New Development Bank

INDEPENDENT EVALUATION OFFICE

Federative Republic of Brazil

PARÁ SUSTAINABLE MUNICIPALITIES PROJECT

PROJECT PERFORMANCE EVALUATION

FULL DOCUMENT | NOVEMBER 2024

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PREFACE

I am delighted to present this report of the findings of the project performance evaluation (PPE) conducted by the Independent Evaluation Office (IEO of NDB) of the Pará Sustainable Municipalities Project in the Federative Republic of Brazil. Notably, both the project and evaluation marked a series of firsts for NDB and IEO: it was the first sovereign guaranteed project financed by the Bank in Brazil and also its first co-financing globally; and also marked IEO's first ever joint evaluation, as it was prepared in partnership with project co-financier the Development Bank of Latin America and Caribbean (CAF) – making it a unique experience in the exchange of experiences and lessons between the two organisations.

The State of Pará is located in Brazil's Amazon region and is hit by heavy rainfall for 6 months of the year, with approximately three metres of rain falling in the State annually. However, 80% of the roads in the state are not paved and only 33% of the roads have a drainage system, meaning that roads and pavements can become unusable and unsanitary. The project aimed to tackle these problems through three main components: improved drainage and road paving, sanitation and telecommunications. The project focused on, for example, paving 186 km of urban roads and managing drainage to improve conditions in twelve municipalities, of which 137 km in nine municipalities were financed by NDB. The roads were upgraded from dirt paths to bituminous asphalt with proper drainage systems to address issues stemming from the heavy rainfall and stagnant water build up.

The project had a total cost of USD 125 million, shared by NDB, CAF, and the State Government of Pará, with the NDB loan amounting to USD 50 million. The project used a parallel financing model where funds from different financiers are designated for specific activities across various municipalities.

Overall, the evaluation found the project to be successful: it improved urban infrastructure in the state's selected municipalities, aligning with local and national development priorities as well as with the broader strategic goals of NDB. A key factor in the project's success was the support from NDB's Americas Regional Office and the centralised project management office (PMO), which ensured consistent project delivery, even during challenging times. In terms of transport infrastructure and results, over 300,000 people, in the heart of the Amazon region, benefited in commuting terms and, also from improved health, access to education and other factors.

At the time of the evaluation, project activities were still ongoing, with the NDB loan only fully disbursed by December 2023, and the CAF loan not fully disbursed. In terms of methodology, therefore, it was a "real-time" evaluation, aiming to generate findings and recommendations.

Areas for improvement identified included: better capacity-building for the PMO and relevant stakeholders and technical assistance could have been a plus for project implementation; knowledge management and innovation – which are crucial for the Bank to be seen not only as a co-financier, but also as a development supporter – were found to be limited in the project; and better project design, and engagement with local stakeholders could have helped the implementation phase, as well as the implementation IT systems for project management and communication. The report also includes an insightful NDB Management Response stemming from this evaluation.

NDB is currently in the process of developing a further project of a similar nature in the same state and I hope that this report will serve as a valuable resource for the design of that project; and, more generally, for those interested in understanding NDB's overall operations in Brazil, highlighting both successful aspects and areas requiring improvement, and thereby stimulating discussions for broader transformation.

Ashwani K. Muthoo
Director General
Independent Evaluation Office

ACKNOWLEDGEMENTS

The Independent Evaluation Office (IEO) of the NDB would like to express its gratitude to all those who have contributed to this evaluation. Specifically, IEO is grateful to the Federal Ministry of Finance, Ministry of Planning and Budget, Ministry of Foreign Affairs, the State Government of Pará, the project staff, and the Municipalities of Rurópolis and Placas. Among other important stakeholders and partners, IEO is also grateful to the beneficiaries who agreed to be interviewed by IEO during the evaluation process.

IEO would like to thank the NDB Board of Directors for their support and broader guidance to ensure the evaluation is appropriately customised to NDB's specific context. A special thanks is due to NDB Management and staff in particular the Americas Regional Office, and other colleagues for their openness in sharing critical reports, data, and insights.

Moreover, IEO would like to express appreciation to the Development Bank of Latin America and the Caribbean – CAF – for their readiness to participate in this joint evaluation with IEO. They provided much support and contributions throughout the evaluation, by peer reviewing the evaluation's methodology at the outset of the process, participating in the main evaluation mission and reviewing the draft final report. IEO also thanks the United Nations Development Programme in Brazil for providing support and data regarding the development of the municipalities.

This evaluation has been conducted under the overall supervision and direction of Mr. Ashwani K. Muthoo, Director General of IEO. The evaluation was led by Mr. Henrique Pissaia (IEO Principal Evaluation Professional), Mr. Igor Andre Bastos Carneiro (Senior Evaluation Expert), Ms. Julia Ambros (Senior Urban Development Expert), Ms. Jaqueline Rabelo Souza (IEO Evaluation Communication and Outreach Expert) and Mr. John Laird (IEO Evaluation Editor and Content Creator).

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ABBREVIATIONS AND ACRONYMS

ARO	Americas Regional Office
BRL	Brazilian Real
CAF	Development Bank of Latin America and the Caribbean
COFIEX	Committee of External Financing
E&S	Environmental and Social
ESG	Environmental, Social, and Governance
DMF	Design and Monitoring Framework
GDP	Gross Domestic Product
IBGE	Brazilian Institute of Geography and Statistics
MDB	Multilateral Development Bank
PAM	Project Administration Manual
PCR	Project Completion Report
PDB	Project Document to the Board
PMO	Project Management Office
PPA	Multi-year Plans (Plano Pluri Annual)
SDGs	Sustainable Development Goals
SEDOP	Secretariat of Urban Development and Public Works of the State of Pará
SEMAS	Secretariat for Environment and Sustainability of the State of Pará

CURRENCY UNITS & EQUIVALENTS, AND MEASUREMENTS

Currency Equivalents
Brazilian Real - BRL
United States Dollar - USD

Exchange rate at Board Approval (March 2018):
USD 1 = BRL 3.40

Average exchange rate for NDB disbursements (from March 2019 through March 2021):
USD 1 = BRL 3.64

Average exchange rate for NDB disbursements (from April 2021 through June 2022):
USD 1.00 = BRL 5.55

Exchange rate at Evaluation (May 15, 2024):
USD 1.00 = BRL 5.15

Measures

m	meter
km	kilometre
m^2	square meter
km^2	square kilometre
mm	millimetre
kbps	kilobytes per second
mbps	megabytes per second
ton	tonne

EXECUTIVE SUMMARY

Background and context

The Pará Sustainable Municipalities Project was the first sovereign guaranteed project approved by the Bank in Brazil and the first co-financing globally. The project aims to improve urban mobility in Pará through increased drainage and street paving. With a total cost of USD 125 million, shared by NDB, the Development Bank of Latin America and the Caribbean (CAF), and the State Government of Pará, the project uses a parallel financing model where funds from different financiers are designated for specific activities across various municipalities. As of the date of this evaluation, 90.51% of planned road paving has been completed, and 100% of the NDB loan has been disbursed. The project's centralised agency ensures coordinated execution, though this evaluation focuses solely on NDB-financed components.

Project design and implementation arrangements

The project had three main components: drainage and road paving, sanitation, and telecommunications; with NDB financing the biggest part of the drainage and road paving. The project focused on paving 186 km of urban roads and managing drainage to improve conditions in twelve municipalities. Nine cities were financed by NDB, and three by CAF. The roads were upgraded from dirt paths to bituminous asphalt with proper drainage systems to address issues like heavy rainfall and stagnant water.

The implementation arrangements included two planned governance levels: a steering committee and a Project Management Office (PMO). However, the steering committee was not created, and the PMO was established in April 2019 as an independent unit to ensure swift project execution and facilitate reporting to NDB and CAF. The PMO oversaw procurement, while municipalities coordinated construction and maintenance. Secretariat of Urban Development and Public Works of the State of Pará (SEDOP) managed environmental monitoring, with oversight by the Secretariat for Environment and Sustainability.

Evaluation methodology and process

The joint evaluation of the project between the Independent Evaluation Office (IEO) and CAF was conducted as part of IEO's 2024 work programme. This was the second project evaluation in Brazil by IEO and the first co-financed and sovereign-guaranteed project evaluated by IEO in Brazil. The evaluation only covered the NDB part of the project and not those components financed by CAF. It was classified as a "real-time" evaluation because project activities were still ongoing, with the NDB loan fully disbursed by December 2023, whereas the CAF loan was not fully disbursed at the time of the evaluation. The evaluation aimed to generate findings and recommendations for improving the quality of ongoing and future NDB operations in Brazil and beyond. The evaluation followed the NDB Evaluation Policy and the Evaluation Strategy 2024–2026, using internationally recognised evaluation methodologies and criteria, customised to the context of NDB, Brazil and the project. It assessed the project based on relevance, effectiveness, efficiency, impact, and sustainability, though only the first three criteria were rated due to the project's (ongoing) implementation status. The evaluation also assessed NDB's and the borrower's performance, and used a six-point rating scale to determine overall project achievement.

The evaluation process included desk reviews, fieldwork, and drafting of the evaluation report. The fieldwork involved a mission to Brazil, where the team conducted interviews, collected evidence, and visited project sites in two of the nine municipalities covered by the project. Discussions were also held with concerned implementing authorities and stakeholders in Belem and Brasilia, including federal and state level government authorities, local authorities, CAF, and other partners. The draft evaluation report was shared with relevant stakeholders for comments, and a final report was prepared, incorporating their feedback. The final report, along with NDB Management's response, will be discussed in the NDB Board of Directors meeting at the end of August 2024, and a stakeholder workshop in Brazil is planned for 2025 to discuss the evaluation's findings and recommendations.

Evaluation findings

Overall Project Achievement: Successful. Overall, thanks to the careful oversight and coordination by the State Government of Pará, along with support from NDB's Americas Regional Office (ARO) and colleagues in headquarters, complemented by the technical expertise and operational capabilities of the PMO (located at the SEDOP), the project has performed well, achieving, to date, most of its objectives and the established indicators in the Design and Monitoring Framework (DMF).

Relevance: Successful. The project's objectives, aimed at improving urban infrastructure and mobility, were consistent with Brazil's Multi-year Plans (Plano Pluri Annual [PPAs]) from 2016 to 2027, which emphasised sustainable development, social inclusion, and reducing regional inequalities. The project also supported NDB's General Strategy for 2017–2021 and 2022–2026, focusing on sustainable infrastructure, inclusiveness, and climate resilience, while contributing to multiple Sustainable Development Goals (SDGs). The project design was deemed suitable for achieving its objectives, with a well-documented Project Document to the Board (PDB) that included contextual problem analysis, institutional arrangements, financial and risk management, and an economic feasibility study. However, the evaluation noted the need for a more comprehensive set of indicators to better measure the project's outcomes and impacts. Despite some challenges, including currency fluctuations, inflation, and approval process delays, the design's alignment with local and national priorities, and the implementation adjustments made during the project, supported its relevance. Overall, the evaluation assesses project relevance as successful.

Effectiveness: Successful. The effectiveness of the Pará project was assessed by evaluating the extent to which its objectives and targets have been achieved. While the project's original DMF could have benefited from additional indicators for better monitoring, newly proposed indicators by the evaluation team have also shown satisfactory results. For instance, there has been a 6% increase in the population with access to paved urban roads, exceeding the target of 5%, and a 50.8% increase in municipal tax collection, surpassing the 10% target. Despite the delay in some activities, such as the installation of trash bins and the development of an operational manual, the project's urban road paving achievements still need to be monitored and be fully implemented. The project has enabled significant investments in small cities, transforming urban landscapes, improving mobility, and enhancing the quality of life for residents. The percentage of high school dropouts decreased by 12.7% in the beneficiary municipalities, surpassing the state and national averages. The evaluation therefore assesses project effectiveness as successful.

Efficiency: Moderately Successful. Administrative efficiency was challenged by Brazil's extensive process for authorising external credit operations, which took 371 days to complete from approval to loan agreement effectiveness. This duration is typical for Brazil due to the necessary federal and senate approvals. Operational efficiency faced obstacles such as increased costs for asphalt linked to oil prices and currency devaluation, inadequate project designs that required adjustments, and heavy rainfall disrupting construction. These factors led to significant amendments and delays, with the project extended by 18 months. Financially, the project experienced a substantial cost

overrun, with an actual contract value reaching BRL 372.8 million, which is 242% of the original estimate. The funding deviation by July 2023 was 31%, primarily due to increased input prices and the devaluation of the Brazilian real. Despite these challenges, the project achieved 100% disbursement by December 2023, with 90.51% of the target 137 km of urban roads completed. The project financing plan was exceeded, with funds received amounting to 172% of the original plan, indicating robust financial management despite the difficulties. In summary, the project faced significant challenges due to the COVID–19 pandemic, currency fluctuations, and operational delays, resulting in an 18-month delay and notable cost overruns. These issues highlighted the need for better risk assessment during the appraisal phase, considering factors like currency risk, oil prices, and local climate conditions. The evaluation therefore assesses project efficiency as moderately successful.

Impact. The impact of the Pará project, though not fully measurable yet due to its ongoing implementation status, has already shown significant positive effects on the lives of beneficiaries. The project, focused on improving urban infrastructure through paving and drainage systems, has led to numerous benefits across multiple levels. Beneficiaries reported spending less on vehicle maintenance and observed improvements in their living conditions, such as enhanced housing and garden aesthetics. These developments indicate a direct positive influence on public health, safety, and overall quality of life. Economically, the project has stimulated growth by attracting new businesses, creating jobs, and increasing property values. This growth is reflected in the substantial rise in municipal tax revenues, with a 50.79% increase in beneficiary municipalities compared to a decrease in the control group. Socially, the project has improved urban living environments, making them more accessible for all residents, including people with disabilities, cyclists, and pedestrians. While a comprehensive impact assessment of the project is premature, these initial observations suggest the project is on track to achieve significant long-term benefits for the communities involved.

Sustainability. The sustainability of the Pará project focuses on ensuring lasting long-term benefits of its infrastructure improvements beyond the project's conclusion. Although municipal budgets are approved annually, which complicates advance funding for maintenance, NDB has included initiatives in the project design to ensure sustainability, such as the procurement of pressure washing trucks for drainage system maintenance (which was removed during the project execution) and training workshops on maintenance operations. These measures, along with routine and periodic maintenance plans, aim to secure efficient operation of the paved roads and drainage systems throughout their design lifecycle of 10 years. NDB's commitment to sustainability also involves capacity-building efforts, including preparing an operations manual and conducting workshops with municipal representatives. These initiatives are designed to foster social accountability and ensure that local authorities maintain the infrastructure. However, concerns remain about the long-term funding for maintenance, especially in municipalities that struggle with regular property tax collection. While some municipalities, like Rurópolis, have allocated funds for maintenance in their budgets, it is unclear if these funds will be effectively utilised. The evaluation team also observed some early maintenance needs and issues with trash clogging some drainage systems. As the project was ongoing at the time of this evaluation, a comprehensive assessment of its sustainability cannot yet be made.

NDB Performance: Successful. Evaluating NDB's performance in the Pará project involves examining its strategic and operational roles throughout the project cycle. Strategically, NDB supported urban development in the Amazon rainforest, which in itself can be considered an important initiative in light of the need for investments in the development of the northern regions of the country. This project was NDB's first co-financed operation with CAF, another important initiative by NDB, aligning with its strategy to collaborate with other development finance institutions. However, NDB's lack of a country-specific strategy for Brazil was a constraint on the undertaking of a more thorough evaluation of how this operation contributes to NDB's wider efforts in promoting economic and social development in Brazil overall. The project also highlighted the need for NDB to provide early capacity-building and technical assistance, which was initially limited. Operationally, NDB faced challenges due to staff shortages and the absence of a fully-fledged appraisal team. Supervision

missions during implementation were limited in scope, and the lack of integrated IT systems created difficulties in account reconciliation and document management. Despite these issues, NDB utilised the country system to ease documentation requirements on procurement. However, the absence of a robust Environmental and Social (E&S) Implementation Plan impacted project compliance. Additionally, NDB's visibility and knowledge management activities were minimal, with no significant knowledge products or a communication strategy developed for this project. Overall, the project marked NDB's first sovereign and co-financed operation in Brazil, highlighting both successes and areas for improvement. While NDB's support to the PMO and its strategic partnerships were beneficial, internal communication, IT systems, and cooperation with the co-financing bank (i.e. CAF) could have been deeper. NDB's performance is nevertheless rated as successful, acknowledging the efforts and results achieved despite the challenges faced in the initial years of NDB operations in Brazil.

Borrower Performance: Successful. The State Government of Pará and the PMO showed strong commitment to the project, effectively managing challenges during its design and execution phases. Despite initial coordination issues with NDB headquarters, which could have benefited from additional capacity-building, the PMO ensured timely report submissions and adhered to the Project Administration Manual. Notably, almost 60% of PMO staff in official positions are women, which is commendable especially for infrastructure development projects. However, there were some gaps in Environmental and Social (E&S) management and compliance, with required actions for information gaps being properly addressed in subsequent reports. Financial management posed some challenges, including delays in disbursements due to language barriers and unfamiliarity with NDB's policies. The PMO required support from ARO and external consultants for document translation and review, highlighting the need for technical assistance. The centralised implementing unit financed by CAF ensured project continuity despite government changes. The borrower also covered cost overruns due to COVID–19, currency depreciation, and rising oil prices, ensuring project completion. Overall, the project delivered strong economic, environmental and social benefits, and the borrower's performance is rated as successful.

Conclusions

The project in Pará has effectively improved urban infrastructure in the state's municipalities, aligning with local and national development priorities as well as the broader strategic goals of NDB. This alignment includes state efforts to support smaller, vulnerable municipalities and the SDGs. The project highlights the benefits of focusing on areas traditionally overlooked by larger development initiatives and showcases the potential for sustainable development through enhanced infrastructure.

A key factor in the project's success was the support from ARO and the centralised PMO, which ensured consistent project delivery despite government transitions. The ARO facilitated smooth implementation by bridging communication gaps and providing logistical support, particularly in overcoming construction challenges during adverse weather conditions. Additionally, the project marked NDB's first co-financed operation with another Multilateral Development Bank (MDB), underscoring the value of resource pooling to extend benefits and enhance outreach.

However, the project faced challenges such as the need for better project design and implementation systems. Issues like the absence of a thorough needs assessment and lack of local stakeholder engagement at the design stage were noted. Capacity-building for project stakeholders was identified as an area needing improvement, with suggestions for tailored training programmes and the introduction of grants for capacity-building. Furthermore, the lack of a robust project management system and language barriers hindered initial work, while limited visibility and knowledge management were also concerns, indicating areas for future enhancement in project execution and communication strategies.

Recommendations

Recommendation 1: Implement local currency loans. The use of local currency reduces exposure to foreign exchange volatility, external inflation and economic shocks, unforeseeable events like COVID–19 and extreme climatic events, which can affect project costs and financial stability; it also supports the local economy and financial markets by increasing demand for the local currency; and lowers transaction costs for projects. Local currency is already being used by some MDB's in Brazil. NDB should implement an action plan for implementing local currency loans in Brazil.

Recommendation 2: Enhance project design and its components. Good project delivery depends on solid project design. This includes having a solid and explicit theory of change to establish the foundation of a strong results framework, making sure that a holistic approach is considered. Improving the design of a project involves a few elements to enhance effectiveness, efficiency, and impact. First, define clear, achievable, and realistic goals/targets. This clarity helps guide the project design, execution, monitoring and evaluation. This is especially needed in accessing sustainable instruments. In addition, stronger contingency planning needs to be inserted in NDB's projects in Brazil. This will help mitigate risks that could derail project objectives and costs.

Recommendation 3: Improve capacity-building initiatives. NDB needs to build on and develop training programmes that are tailored to the identified needs of the project, the implementing agency and relevant stakeholders. These could include workshops, seminars, on-the-job training, and mentoring, preferably using the local language, as most professionals working at the PMO and other relevant stakeholders might have difficulties with English training. In similar projects, a capacity-building initiative for municipalities on tax reform would be highly beneficial to ensure they have enough resources to sustain project activities. Also, assistance for developing traffic studies for pavement design and urban development plans (e.g. on zoning and mobility) could extend the life of the pavements and reduce operational and maintenance costs.

Recommendation 4: Knowledge management and communication plans. NDB has a privileged position to scale up and share knowledge and good practices. To better identify, document, and share lessons and good practices, it is recommended – according to NDB policies and documents – that each project funded by NDB in Brazil and beyond should have an in-built knowledge management and communication plan in design, with key activities to be conducted throughout implementation such as the preparation of publications, brochures, use of social media and the internet, organisation of workshops and other events.

Recommendation 5: Highlight project implementation support enablers – project management IT systems. The use of efficient project management IT systems instead of individual spreadsheets and text files and e-mails would highly simplify procedures related to: operations; procurement; environmental, social and governance; finance, budget and accounting; monitoring and evaluation; communications; and most of the aspects related to project implementation. Good project management systems facilitate effective coordination and communication among diverse teams and areas inside and outside the Bank. They also overcome language barriers, as a field in the system in Brazil could be in Portuguese, while in China, the same field could be in Chinese, at headquarters in English, and so on, facilitating communications and reconciliation of information.

Recommendation 6: Keep expanding co-financing and partnerships. NDB is a leader in co-financing in Brazil, as with three parallel financings under execution in Brazil two are from NDB, and three more are under preparation. In this project, a parallel co-financing model was used, which guarantees independent executions, and, so far, successful implementation. In this way NDB should keep expanding parallel co-financing and implement others, as bridge loans, A/B, syndicated, blended finance and so on, expanding NDB's financing volume, outreach, and impact, with some guidelines or an action plan to implement the Bank's co-financing strategy.

NDB MANAGEMENT RESPONSE

General comments

The Management appreciates IEO's comprehensive evaluation of the Pará Sustainable Municipalities Project.

The Project represents NDB's first sovereign transaction in Brazil at a sub-national level. The Project was implemented in partnership with peer multilateral development bank – the Development Bank of Latin America and the Caribbean (CAF), which invited NDB to join efforts in supporting the State of Pará's endeavors to improve urban mobility and development of rural areas. The Project focused on improvement of urban roads and drainage which allowed to provide better public services to the population of small municipalities along the Trans-Amazonian highway, a remote region that has undergone rapid urbanisation.

The Project has generated significant development impact. The Project contributed to transforming the urban landscape of small cities and improving urban mobility and access to basic public services. It has significant positive impacts on the quality of life of the beneficiary population, economic growth and social well-being. Particularly, it contributed to strengthening infrastructure in small municipalities located in a region characterised by difficult geography and adverse weather conditions. One of the significant value additions generated by the project is the improvement of construction standards and enhancement of engineering procedures, processes and techniques in the State of Pará. Use of country systems and adoption of flexible approach to ESG related matters have been highly appreciated by the Government of the State of Pará.

Although the Project has not fully reached the completion stage, all of its development objectives are expected to be achieved. This is consistent with the view that was endorsed by IEO evaluation ratings. Most importantly, the State of Pará has expressed interest in expanding cooperation with NDB with a number of new projects currently being considered by the Bank. This serves as a testament to the project's success and highlights efficiency of Bank's work in Brazil.

The Management's responses on the recommendations of IEO are presented below.

Recommendation 1: Implement local currency loans. The use of local currency reduces exposure to foreign exchange volatility, external inflation and economic shocks, unforeseeable events like COVID–19 and extreme climatic events, which can affect project costs and financial stability; it also supports the local economy and financial markets by increasing demand for the local currency; and lowers transaction costs for projects. Local currency is already being used by some MDB's in Brazil. NDB should implement an action plan for implementing local currency loans in Brazil.

Management Response

The Management agrees with the recommendation to expand local currency financing which is one of the key strategic objectives of the Bank. Significant progress has been already achieved in this direction. Share of loan approvals in local currencies during the Strategy period has reached the target level of 30%, with the Bank becoming an active issuer in the Chinese renminbi (RMB) and South African rand (ZAR) local bond market. NDB is expecting to approve first RMB denominated transactions in other member countries this year further strengthening our local currency proposition.

Bank undertakes significant efforts to expand local currency operations in its member countries with the rationale for implementation of local currency loans. Currently there is an action plan for implementing local currency loans in some members countries.

Recommendation 2: Enhance project design and its components. Good project delivery depends on a solid project design. This includes having a thorough understanding of the context and solid theory of change to establish the foundation of a strong results framework, making sure that a holistic approach is considered. Improving the design of a project involves a few elements to enhance effectiveness, efficiency and impact. First, define clear, achievable, and realistic goals/targets. This clarity helps guide the project design, execution, monitoring and evaluation, and tailor the costs and timing to the individual characteristics of each project. This is especially needed in accessing sustainable instruments. In addition, stronger contingency planning needs to be inserted in NDB's projects in Brazil. Integrating contingency measures into project planning will help mitigate risks that could derail project objectives and costs.

Management Response

The Management acknowledges the importance of ensuring a robust project design, applying theory of change at the various phases of the project cycle and has already put in place necessary tools both at the appraisal and implementation stages. Every Project Document to the Board (PDB) now includes a dedicated Design and Monitoring Framework (DMF) section outlining project objectives and their indicators based on the theory of change approach, in line with the practice of other MDBs. During the project implementation stage project teams undertake continuous tracking of achievement of DMF indicators to assess the progress and address any potential challenges faced by the project.

Regarding contingency planning for NDB's projects in Brazil, it is important to note that the central government does not welcome including contingencies in the project cost plans, sticking to an approach that the borrower (i.e. subnational government) should exercise tighter cost control measures and increase in cost, if any, shall be covered by subnational budget. Having said this, NDB provides valuable knowledge support to subnational governments in implementing their projects – the work which has been strengthened since Americas Regional Office (ARO) inception.

Recommendation 3: Improve capacity-building initiatives. NDB needs to build on and develop training programmes that are tailored to the identified needs of the project, the implementing agency, and relevant stakeholders. These could include workshops, seminars, on-the-job training, and mentoring, preferably using the local language, as most professionals working at the PMO, and relevant stakeholders might have difficulties with English training. In similar projects, a capacity-building initiative for municipalities on tax reform would be highly beneficial to ensure they have enough resources to sustain project activities. Also, assistance for developing traffic studies for pavement design and urban development plans (e.g. on zoning and mobility) could extend the life of the pavements and reduce operational and maintenance costs.

Management Response

The Management acknowledges the recommendation to improve capacity building initiatives for NDB projects. NDB already pays considerable attention to capacity building, which is often included in project design as one of the components in Bank's projects. The Bank will further explore on how to foster clients' capacity to improve the sustainability of NDB-financed infrastructure investments, however, without policy prescription or judgement and with due consideration of the sovereignty and autonomy of local governments.

Recommendation 4: Knowledge management and communication plans. NDB has a privileged position to scale up and share knowledge and good practices. To better identify, document, and share lessons and good practices, it is recommended − according to NDB policies and documents, that each project funded by NDB in Brazil and beyond should have an in-built knowledge management and communication plan in design, with key activities to be conducted throughout implementation such as the preparation of publications, brochures, use of social media and the internet, organisation of workshops and other events.

Management Response

The Management recognises the importance of strengthening communication and knowledge dissemination, in line with the General Strategy for 2022–2026. The Bank will continue to showcase project success stories in its communications, highlighting development impact, including the social, economic, and environmental outputs and outcomes. NDB will use appropriate communications channels, tools and occasions, such as workshops or seminars, to expand knowledge exchanges and share on a planned basis lessons and good practices.

Recommendation 5: Highlight project implementation support enablers – project management IT systems. The use of efficient project management IT systems instead of individual spreadsheets and text files and e-mails would highly simplify procedures related to operations, procurement, ESG, FBA, M&E, communications, and most of the aspects related to project implementation. Good project management systems facilitate effective coordination and communication among diverse teams and areas inside and outside the bank. They also overcome language barriers, as a field in the system in Brazil could be in Portuguese, while in China, the same field could be in Chinese, at HQ in English, and so on, facilitating communications and reconciliation of information.

Management Response

The Management acknowledges the importance of optimising project implementation processes through the use of advanced IT systems. NDB has established procedures for project initiation, approval, disbursement, publication, and monitoring, and continues to refine and enhance these processes. To support both internal and external stakeholders, communication tools and structured document-sharing platforms have been implemented. The Bank is actively continuing the development and enhancement of comprehensive project lifecycle management systems to improve project tracking, documentation management, real-time data analysis, risk management, and overall operational efficiency, thereby ensuring seamless coordination and communication across all teams and regions.

Recommendation 6: Keep expanding co-financing and partnerships. NDB is a leader in co-financing in Brazil, as with three parallel financings under execution in Brazil two are from NDB, and three more are under preparation. In this project, a parallel co-financing model was used, which guarantees independent executions and, so far, successful implementation. In this way NDB should keep expanding parallel co-financing and implement others, as bridge loans, A/B, syndicated, blended finance and so on; expanding NDB's financing volume, outreach, and impact, with some guidelines or action plan to implement the Bank's co-financing strategy.

Management Response

The Management acknowledges the importance of expanding partnership with other development institutions, including exploring co-financing/parallel financing, which is one of the key targets envisaged by NDB's General Strategy for 2022–2026. The Bank has already established a network of partnerships with MDBs, national development institutions and commercial banks leveraging joint expertise and creating additional synergies. During the Strategy period, 20% of Bank's loans have been co-financed with partner development institutions (multilateral, regional and national), a trend expected to continue in the future.

Most recently, NDB is planning to conduct on the sidelines of annual meeting in Cape Town a high-level seminar "Development Finance Institutions at the Forefront of Infrastructure Investment" that would provide an opportunity to further strengthen cooperation with our development partners.

I. BACKGROUND

A. Project context

1. The Pará Sustainable Municipalities Project is NDB's first sovereign loan-financed project approved for Brazil. The project was designed to improve urban mobility by increasing the percentage of drainage and street paving of municipalities in the State of Pará. The total project cost of USD 125 million was shared by NDB, the Development Bank of Latin America and the Caribbean (CAF) and the State Government of Pará. The project is a "parallel financing" operation by both CAF and NDB. This means that the funds of the two financers were not pooled together but were earmarked to fund specific activities in different municipalities of the state. However, coordination was ensured through a single and centralised project agency responsible for the execution of activities. This evaluation will only cover the components and activities financed by NDB.

2. An overview of the project financing, key dates and state of implementation at the time of this evaluation is found in table 1. More details can be found in annex IX.

TABLE 1.

Overview of project financing, key dates and state of implementation at the time of evaluation**

Project financiers	
NDB loan	USD 50 million
CAF	USD 50 million
State Government of Pará*	USD 25 million
Total project cost	**USD 125 million**
Key dates	
NDB Board approval	March 5, 2018
Loan agreement signed with State of Pará, Brazil • 1st amendment • 2nd amendment • 3rd amendment	March 11, 2019 June 6, 2022 June 28, 2022 September 21, 2023
Implementation start date	March 11, 2019
Closing date (original)	March 10, 2023
Closing date (revised – amendment 3)	September 10, 2024
Project implementation duration	4.5 years
Last drawdown request date	December 6, 2023
First principal repayment date	September 11, 2023
State, at time of evaluation, of:	
Implementation	• 90.51% (124 km) of the planned 137 km of paved urban roads (in the 9 municipalities) has been achieved – civil works category. • Design vertical and horizontal signalling projects of streets in various municipalities of the State of Pará Studies, project and social & technical works category. • Capacity-building is still scheduled to take place
NDB loan disbursement	100% disbursed and 92.37% liquidated.

* The state authorities have committed to fund the cost overruns, if any, through additional equity contributions.
** Project progress report, December 2023 – the last official progress report since the beginning of evaluation.

B. Country context

3. Brazil is the largest country in both South America and Latin America. It covers an area of approximately 8.5 million square kilometres, making it the fifth-largest country in the world by area. As of the latest census in the country (2022), Brazil has a population of about 203 million people, making it the seventh most populous country in the world; and the most populated in Latin America. Brazil hosts diverse geographical features including the Amazon Rainforest, the Pantanal wetlands, and the Atlantic forest. It boasts one of the largest biodiversity counts globally. Brazil represents the second largest forested area in the world, after Russia, holding 12% of global forests.[1]

4. According to International Monetary Fund (IMF) data from April 10, 2024, Brazil currently holds a gross domestic product (GDP) of approximately USD 2.72 trillion, ranking it as the ninth largest economy in the world. The Brazilian economy covers a breadth of sectors, encompassing agriculture, mining, manufacturing and services. Notably, it is a prominent global hub for agricultural production and exportation. Several factors, including commodity prices, domestic consumption and the advancement of infrastructure, shape the growth of Brazil's economy, which has made a significant rebound since the COVID–19 pandemic. After a strong expansion in early 2023, growth momentum is now converging to the economy's potential growth. Amid declines in labour market participation, unemployment has decreased to levels not seen since 2015. GDP per capita nationwide lies at just over USD 11,000 and the annual GDP growth rate is currently estimated at 1.8% for 2024.[2]

C. Pará State context

5. Pará is in the north Brazil, and is the second biggest state in the country, with a geographic area of 1.24 million km^2 (bigger than, for example, Spain and France). The local population is around 8.1 million,[3] however with a low population density of 6.52 inhabitants/km^2. The local economy is based on extractive activities (iron ore, aluminium, wood coal and wood), public services and commerce. Its GDP is the 10th biggest in the country with BRL 262.9 billion (approximately USD 52 billion), in 2021.[4]

6. The state was historically one of the top five Brazilian states by GDP, but over the last few decades it has lost its position as an economic leader. During the construction of the Trans-Amazonian Highway and mines in the 1970s, large groups of workers assembled in the area. These workers settled along the road, but proper infrastructure and living conditions were never fully developed. Starting in 2012, the construction of the Belo Monte Dam, the second largest hydroelectric plant in Brazil, brought around 100,000 more people to the region, creating additional pressure on local infrastructure. For this reason, local inhabitants now lack basic infrastructure, and they fall below the state and national social development indices.

7. Recognising these infrastructure challenges, the government has decided to assist the population that lives along the Trans-Amazonian Highway by providing better public infrastructure, including roads, sanitation, internet connectivity and public lighting. Municipalities along state roads do not have sufficient revenues or experience to organically provide for infrastructure needs. To assist in development, the government of the state has proposed state assistance to improve urban paving in underdeveloped municipalities, as well as for this project. According to their estimates, after the completion of the project, the level of urban infrastructure development will increase from around 1.5% to 30% in affected cities, creating a vastly improved quality of life for residents.

1 World Bank data (2021) – https://data.worldbank.org/indicator/AG.LND.FRST.K2?most_recent_value_desc=true.
2 World Economic Outlook (IMF, April 2024). https://www.imf.org/en/Publications/WEO/Issues/2024/04/16/world-economic-outlook-april-2024.
3 IBGE, IBGE (2023). «Panorama Censo 2022. Instituto Brasileiro de Geografia e Estatística.
4 Sistema de Contas Regionais: Brasil 2021. Instituto Brasileiro de Geografia e Estatística (IBGE).

8. According to the latest census of Brazil in 2022, 10 of the 19 Brazilian cities that have doubled in population over the last decade are in the Amazon, and the region's population grew over 23% in the decade compared to the country's overall growth of 12%.[5] Cities faced the challenge of providing basic infrastructure needs for their burgeoning populations without sufficient revenues or experience.

9. The State of Pará launched the initiative "Sustainable Pará", based on the state plan till 2030.[6] It encompasses 141 municipalities (98% of cities in Pará) and affects 7.5 million people – about 93% of the state population. The programme engages with these municipalities at different levels to improve living conditions in them. The first step of the programme was to engage with municipalities to build up the capacity of local leaders in both management and technical aspects. The second phase is to develop the cities with concrete projects, such as the subject of this evaluation.

10. The economic growth of the State of Pará shows positive signs for 2024 and 2025, driven by various sectors, including tourism, agriculture, mining and other extractive industries. Projections indicate GDP growth between 1.5% and 2.5%,[7] aligned with the national average. This growth is part of a policy that aims to integrate sustainability into the economic sectors, such as bioeconomics and renewable energy, and focus on reducing informality through investments in education and formal employment generation. Pará is also known to be the "gateway" into the Amazon rainforest, attracting many investments and international fora, such as the 30th United Nations Conference on Climate Change (COP 30) which will take place there in 2025.

D. Sectoral context

11. Within municipalities in Brazil, 92.2% of streets are not paved. Pará exhibits a similar situation, with 80% of the municipalities[8] not having urban road planning and most of the existing streets' layouts and sizes not meeting any recognised standards. At the same time, there is an absence of sidewalks of standard width. Urban streets in municipalities are mostly limited to central areas, without reaching low-income populations in suburban areas.

12. Water drainage has become one of the most important issues associated with non-paved roads – especially given the climate in Pará. The State of Pará has an equatorial climate with abundant rainfall throughout the year – approx. 2,921.7 mm falls there annually. This climate has an impact on pavement conditions of highways and urban roads/streets. However, only 33.2% of the road network in the state has a drainage system and 66% of municipalities have less than 25% of the road network with drainage.[9] The latest information collected on the drainage system from the National Sanitation Plan showed that only 58% of the municipalities have some underground drainage systems, with most drainage limited to surface drainage. Because there is no standard, there is inadequate finishing and a lack of maintenance, creating problems such as a lack of manholes, obstructive vegetation, silting and waste accumulation. Poor drainage has also led to damaged private property in the urban areas.

13. The drainage issue also affects natural water courses (streams, ponds and rivers), which collect water waste in many municipalities. In Pará, it is common for residential sewage collection networks to discharge effluent directly into the streets, forming ponds and eventually seeping into waterways.

5 Panorama Censo 2022. https://censo2022.ibge.gov.br/panorama/.
6 Decreto Nº 1745, De 26 De Abril De 2017 – https://www.semas.pa.gov.br/legislacao/files/pdf/509.pdf.
7 Data extracted from Data Pará Dec. 2023 (https://www.fapespa.pa.gov.br/data-para/) and Boletim MacroFiscal da SPE May 2024 (https://www.gov.br/fazenda/pt-br/central-de-conteudo/publicacoes/conjuntura-economica/boletim-macrofiscal).
8 Sistema Nacional de Viacao (SNV): https://www.gov.br/dnit/pt-br/assuntos/atlas-e-mapas/pnv-e-snv.
9 SNIS/Sistema de Drenagem e Manejo de Águas Pluviais Urbanas (DMAPU) 2022.

II. THE PROJECT[10]

A. Project objectives

14. The project aims to reduce poverty and inequalities in the region through the implementation of sanitation, mobility and communication initiatives. Expected benefits include decreased flooding, improved sanitation and reduced road maintenance costs due to implementation of superficial and underground drainage systems along the streets, and improved health of residents due to the reduction of dust generated by unpaved roads, and of open sewage that runs through streets. The objectives of the original project, before amendments, and as per PDB, are to:

    (i) Increase the percentage of drainage and pavements of the municipalities of Pará, improving urban mobility;

    (ii) Minimise the environmental impacts and reduce diseases caused by the inadequate management of solid urban waste in the municipalities;

    (iii) Provide cities with an urban plan that allows legal security, territorial planning, improvement of own revenue collection and expansion planning through master plans; and

    (iv) Expand the population's access to the internet and reduce communication expenses. The project is expected to promote economic development, improve urban infrastructure, and enhance regional management capacity along the Trans-Amazonian Highway, in twelve selected municipalities.

15. NDB is responsible for financing part of the interventions to achieve the first specific objective, "(i) increase the percentage of drainage and pavement of the municipalities of Pará, improving urban mobility". The targeted results for this objective are to:[11]

    - Promote sustainable development and reduce inequalities through the implementation of mobility solutions.
    - Provide better public services to the population along the Trans-Amazonian Highway, a region that has urbanised very rapidly, but remains isolated.
    - Contribute to the development of the local economy and improve living conditions of the underdeveloped municipalities.[12]

16. These objectives are to be achieved through implementing the following activities and outputs:

    - Increase drainage and paving from 33% to 40% in the State of Pará by 2022.
    - Increase the urbanisation ratio in the municipalities supported by the programme from 1.25% to 30%, by 2021 (according to national urbanisation indicator published by the Brazilian Institute of Geography and Statistics [IBGE]).

10 This part of the report references the Project Document to the Board (PDB), and the evaluation Approach Paper prepared by IEO before the field mission.
11 As captured in the Design and Monitoring Framework in the PDB.
12 See Project Proposal Section in the PDB, page 1.

- Pave 186 km (137 km of which was to be funded by NDB) of existing urban dirt roads with the integration of rainwater and installation of trash bins in 12 municipalities, by 2022.

- Develop an operations manual for paving and drainage system maintenance and workshops with representatives of municipalities, by 2022.

B. Project components and activities

17. The complete project, with CAF co-financing and counterpart funds from the borrower, has three main components, as outlined in the PDB: (i) drainage and road paving; (ii) sanitation (building of regional and municipal landfills); and (iii) telecommunications (installation of fibre optic lines). Along with the three main components, the project also included three complementary components: (iv) urban master planning; (v) fees and contingencies; and (vi) "Asfalto na Cidade".[13]

18. NDB partially financed components (i) and (v). All the other components, as well as part of the activities under components (i) and (v) were financed by CAF and the borrower. During project implementation, CAF amended their loan agreement, eliminating components and reallocating funds, though this was not part of the evaluation conducted by IEO. Thus, the following project description will only contain information relating to NDB's segment of the project.

TABLE 2.

Estimated project costs (in USD)

PDB component	Component name	Total	CAF	NDB	Counterpart
I	Drainage and road paving	**66,993,458**	15,562,229	49,875,000	1,556,229
II	Sanitation	**17,479,377**	15,890,343	-	1,589,034
III	Telecommunications	**13,759,143**	12,508,312	-	1,250,831
IV	Urban master planning	**275,000**	250,000	-	25,000
V	Fees and contingencies	**5,914,116**	5,789,116	125,000	-
VI	Asfalto na Cidade	**20,578,906**			20,578,906
Total		**125,000,000**	**50,000,000**	**50,000,000**	**25,000,000**

Source: Project Document to the Board (PDB).

19. **Component 1 – drainage and road paving:** This component was designed with the intention to pave 186 km (137 km funded by NDB) of existing municipal urban dirt roads/streets and manage pluvial draining in several municipalities to improve their urban conditions. Twelve municipalities were inserted into the design of this component (see map in annex VII). Nine cities were financed by NDB, while three cities (Porto de Moz, Anapu, Pacaja – a total of 49 km) were financed by CAF. The total cost of this component was estimated at USD 66.9 million (BRL 214.1 million at the time of project appraisal).

13 A partnership between municipalities and the Pará State Government in the area of urban mobility infrastructure. The programme brings asphalt drainage and paving to the city, where investments focus to improve the traffic and quality of life of the local population.

20. The 12 cities under this component were located alongside the Trans-Amazonian Highway. The selection criteria for streets to be paved focused on maximising the benefits for the local population and solving flood problems to the greatest degree possible. It included the following criteria:
    - Areas subject to floods, flooding and/or critical flooding in the last five years;
    - Areas with higher child mortality coefficients;
    - High impact on urban mobility; and
    - Areas with a low human development index.

21. The paving upgraded the existing urban roads from clay dirt paths to bituminous asphalt roads, with two lanes at a width of 3.5m each, and sidewalks of 1.0–2.5m. The dirt urban streets in place at the beginning of the project were wide enough to accommodate the new paving without affecting the housing alongside. The roads to be upgraded were chosen by each municipality and the rationale used was to be within the urban area of the municipalities, starting in the city centre.

22. The roads included deep drainage to alleviate problems faced in the municipalities due to heavy rainfall and to increase urban climate-resilience. Before the project, rainwater was not managed properly, creating pools of water in some areas, eroding the dirt roads, increasing chances of health problems (such as proliferating dengue mosquitoes and other pests due to the still water), and causing damage to private property. The drainage was applied to the entirety of the newly paved length, in two types: underground and surface drainage. Underground drainage accounted for approx. 60–70% of the total length, with the rest being surface drainage along the two sides of the road at the curb side. The component also included the purchase of maintenance equipment, such as 13 pressure-washing vehicles, to clear drainage pipes and ensure that they function properly. This component was removed from the project and the funds reassigned, at the third loan amendment.

TABLE 3.

Road and drainage details

#	Municipality	Roads paved (km)	Road cost (USD)	Funding source
1	Anapu	15	4,749,925	**CAF**
2	Pacajá	18	5,698,651	
3	Porto de Móz	16	5,065,503	
4	Brasil Novo	14	4,433,683	**NDB**
5	Itaituba	27	8,545,494	
6	Medicilândia	15	4,750,589	
7	Novo Progresso	13	4,116,776	
8	Placas	16	5,065,503	
9	Rurópolis	15	4,749,925	
10	Senador José Porfírio	11	3,484,292	
11	Trairão	12	3,800,534	
12	Uruará	14	4,433,018	
-	Maintenance equipment	-	2,642,400	
-	Contingencies	-	5,457,165	**NDB/CAF**
	Total	**186**	**66,993,458**	

Source: Project Document to the Board.

23. This component also included the addition of permanent trash bins at 100 metre intervals along the sidewalk to promote proper waste handling and reduce waste on the urban roads and in the drainage system. Implementation was expected to take 12–18 months. The component also included the creation of guidelines and training for municipalities to build capacity in maintaining the roads and utilising the drainage equipment (this part of the component was still to be concluded by the time of the evaluation).

24. **Component 5 – fees and contingencies:** This component was financed by CAF and NDB. This included management fees, auditing fees, front-end fees and contingencies for the project components. NDB has agreed to capitalise the front-end fee.

25. **Amendments to components.** After the PDB, the loan agreement then further detailed the usage of NDB-only funds, dividing the project into two components and five sub-components. Component 1. Urban mobility and drainage; 1.1 Civil works; 1.2 Equipment for maintenance; 1.3 Capacity-building; 1.4 Studies, projects, and social & technical works; Component 2. Other costs; and 2.1 Front-end fee. In the third amendment to the project made by NDB and the borrower, dated September 21, 2023, there was a USD 3,611,187 reallocation of funds from the item 1.2. The cost allocation and reallocations are described in table 4.

TABLE 4.

NDB resources allocation and reallocation (USD)

Loan agreement components	Allocation	Reallocation	Status	State	Total (after reallocation)
1. Urban mobility and drainage	**49,875,000**	**49,875,000**	**=**	**12,500,000**	**62,375,000**
1.1 Civil works	46,133,000	49,744,187	↑	12,500,000	62,244,187
1.2 Equipment for maintenance	2,742,000	-	↓	-	-
1.3 Capacity-building	250,000	67,000	↓	-	67,000
1.4 Studies, projects, and social & technical works	750,000	63,813	↓	-	63,813
2. Other costs	**125,000**	**125,000**	**=**	**-**	**125,000**
2.1 Front-end fee	125,000	125,000	=	-	125,000
Total	**50,000,000**	**50,000,000**		**12,500,000**	**62,500,000**

Source: PDB and Loan Amendment 3.

C. Implementation arrangements

26. Two governance levels were initially planned to manage implementation, each complementing each other and generating information for the Pará State Government. The first level was going to be a steering committee composed of representatives of seven secretariats;[14] and the second level a Project Management Office (PMO) – also referred in some documents as Project Implementing Unit (PIU), Project Implementation Agency (PIA) or programme management unit (Unidade Gestora do Programa [UGP]). The steering committee was not, in the end, created.

27. The PMO was eventually established in April 2019, and created to be an independent unit from the above-mentioned secretariats to ensure that the project was executed swiftly and to facilitate reporting to NDB and CAF without disrupting the responsibilities of the various secretariats. Once fully functional, the PMO would have at least eight members, including professionals, in the following areas: an engineer, a construction manager, a financial specialist, a coordinator for Environmental and Social (E&S) aspects, a financial and budgeting specialist, and a technical analyst. NDB required that at least 50% of staff should be permanent public servants (see annex XI for further PMO information).

28. **Procurement:** All procurement for the project was conducted by the PMO, which established a "procurement commission" consisting of seven officials drawn from the procurement, legal, technical and finance departments. The municipalities did not participate in the procurement processes; however, they coordinated and supervised construction and maintenance. The members of the procurement commission would be exclusively dedicated towards procurement of the project until completion of procurement. The procurement followed the Brazilian national legislation.

29. **Environmental monitoring:** The Secretariat for Urban Development and Public Works (SEDOP) of the State of Pará had the overall responsibility for analysing environmental and social risks, conducting impact assessments and preparing reports for the Secretariat for Environment and Sustainability (SEMAS). SEMAS was responsible for issuing permits and licenses for project activities. The PMO coordinated the preparation of the project including coordinating the environmental and social studies. SEDOP monitored the implementation of the Environmental and Social Management Plans (ESMPs) by project contractors, and submitted environmental and social monitoring reports to SEMAS. The environmental and social studies for each municipal project identified monitoring parameters for the construction phase of the project. These included monitoring of air quality (for example on dust levels), noise pollution, impacts from asphalt production activities, and origins control for minerals used in asphalt production. Reporting on these aspects was included as part of the Project Progress Reports (PPRs) produced for NDB.

30. **Project administration manual (PAM):** The PAM described the essential administrative and management arrangements required to implement the project on time, within budget, and in accordance with NDB policies and procedures as applicable, including: roles and responsibilities; project cost, financing, and implementation plans; arrangements for financial management, audit and disbursements; procurement; environment and social framework; and monitoring and evaluation. The contents of the PAM and any revisions to it were to be discussed and agreed by the PMO, CAF and NDB (however during implementation, each institution had its own separate PAM).

14 SEEGEST (Special Secretariat for Strategic Management); SEMSU (Extraordinary Secretariat of Sustainable Municipalities); SEPLAN (Secretariat of Planning); SEFA (Secretariat of Finance); PRODEPA (Information Technology and Communication Company of Pará State); SEDOP (Secretariat of Urban Development and Public Works); and SEMAS (Secretariat of Environment and Sustainability).

III. EVALUATION OBJECTIVES, METHODOLOGY AND PROCESS

A. Background

31. This joint evaluation between IEO and CAF was agreed by the NDB Board of Directors as part of IEO's work programme for 2024.[15] The evaluation followed the main provisions of the NDB Evaluation Policy[16] and the Evaluation Strategy 2024–2026.[17] This is the second project evaluation in Brazil to be conducted by IEO, following the evaluation of the Renewable Energy Projects and Associated Transmission Project[18] completed in December 2023. Furthermore, this was the first co-financed project Bank-wide and the first sovereign guaranteed project to be evaluated by IEO in Brazil. Despite the joint nature of the evaluation, the evaluation only covered the NDB part of the entire project and financing.

32. Joint evaluations can take several forms of "working together". These include from undertaking all activities jointly, such as producing a joint evaluation approach paper and joint final evaluation report, to a "parallel" work method, where each institution produces their own products, according to their specific needs and phases of project execution, but still share information between them. This evaluation followed the latter approach. Since its inception, IEO has been closely coordinating with relevant colleagues in CAF (both in Brasilia and at their HQs), who expressed keen interest in participating in this evaluation, actively contributing to shaping the evaluation's methodology, sharing information and documents, exchanging ideas, and joining the field mission to Pará. CAF colleagues also reviewed the draft evaluation report and provided their comments, which have been included in the final report (see annex I).

33. It is noteworthy that this evaluation was not a completion or ex-post evaluation, given that some project activities were still ongoing at the time that the evaluation was being carried out. The NDB loan was fully disbursed by December 2023, though the CAF loan has not yet been fully disbursed. It is also not a mid-term review (MTR) as both disbursements and the implementation of activities are beyond the mid-point of the project – NDB's implementation activities had already passed the 90% milestone. It can therefore be classified as a "real-time" evaluation, which is increasingly gaining attention among multilateral development organisations, as instruments that can generate important findings and lessons for the way forward. In this regard, the timing of this joint real-time evaluation was particularly important for NDB, which is currently designing a similar follow-up operation in the State of Pará which may highly benefit from lessons learned from this evaluation exercise.

B. Evaluation objectives

34. The evaluation's overarching objectives are to promote accountability and learning. More specifically, the evaluation assessed the results of the operation and generated findings and recommendations for improving the quality of ongoing and future NDB operations in Brazil and beyond.

15 See https://www.ndb.int/wp-content/uploads/2023/12/Final-IEO-work-programme-and-budget-2024-2026.pdf.
16 See https://www.ndb.int/wp-content/uploads/2022/11/IEO_Final-Evaluation-Policy.pdf.
17 See https://www.ndb.int/wp-content/uploads/2023/12/IEO-Evaluation-Strategy-2024-2026.pdf.
18 See https://www.ndb.int/wp-content/uploads/2024/02/Brazil-Report-PPE-final-version.pdf.

C. Methodology, evaluation questions and rating scale

35. The evaluation was undertaken within the overall framework of the NDB Evaluation Policy[19] and Evaluation Strategy 2024–2026. The project evaluation followed internationally recognised evaluation methodologies, criteria, and processes, as adopted by the Evaluation Cooperation Group (ECG) of the MDBs, though appropriately customised to the Brazil, NDB and project context and timing.

36. In line with the main provisions of the latest Good Practice Standards for Evaluation of Public Sector of the ECG, IEO evaluated the project based on the following evaluation criteria: A – Relevance; B – Effectiveness; C – Efficiency; D – Impact; and E – Sustainability.

37. However, taking into account the stage of project implementation, the evaluation only gave a rating for the first three of those criteria: relevance, effectiveness and efficiency (and overall project achievement), but not for impact and sustainability which, although thoroughly assessed, were not assigned a rating since it would not be methodologically robust to rate impact and sustainability before project completion, and especially because CAF-financed activities were still under implementation at the time of this evaluation.

38. In addition to determining overall project achievement, the evaluation assessed NDB's performance as well as the borrower's performance.

39. Based on the assessment and ratings of the above criteria, the evaluation also rated "overall project achievement". The six-point rating scale adopted by IEO is shown in table 5.

TABLE 5.

Evaluation Rating Scale

Rating scale		Description
6	Highly successful	The project achieved or surpassed all main targets, objectives, expectations, and results and can be considered as a model within its project typology (overwhelming positive results and no shortcomings).
5	Successful	The project achieved almost all (indicatively, over 80–95%) of the main targets, objectives, expectations, and results (strong results, with minor shortcomings).
4	Moderately successful	The project achieved the majority (indicatively, 60 to 80%) of the targets, objectives, expectations, and results. However, a significant part of these was not achieved (positive results with some shortcomings in several areas).
3	Moderately unsuccessful	The project did not achieve its main targets (indicatively, less than 60%), objectives, expectations, and results (several shortcomings that outweigh some positive results).
2	Unsuccessful	The project achieved only a minority of its targets, objectives, expectations, and results (largely negative results, with very few positive results).
1	Highly unsuccessful	The project achieved almost none of its targets, objectives, expectations, and results (significant negative results, with hardly any positive results).

19 Ibid.

40. The key questions that were used to assess the performance under each criterion are listed below. (The complete set of questions analysed may be seen in the evaluation framework in annex XIV.)

(i) **Relevance:** To what extent were project objectives aligned with the priorities of NDB, government and target beneficiaries, and was the design appropriate to meet the objectives defined?

(ii) **Effectiveness:** To what extent have project objectives been achieved, or likely to be achieved, at the time of the evaluation?

(iii) **Efficiency:** To what extent does the NDB intervention deliver results in an economic and timely manner?

(iv) **Impact:** To what extent has the NDB intervention generated or is likely to generate significant positive or negative, direct, or indirect, intended, or unintended, higher-level longer-term effects from an economic, social, institutional perspectives?

(v) **Sustainability:** To what extent are the net benefits of the project likely to continue after project completion?

41. The evaluation also focused on answering a leading question: To what extent has the project contributed to improve urban infrastructure conditions in municipalities in the State of Pará to promote sustainable development?

42. More specifically, some of the key questions that the evaluation addressed are listed below.

- How are the project and its co-financing arrangements aligned with NDB's strategy as well as other applicable NDB and government policies and strategies – both current and at the time of design/appraisal?
- Were the design, implementation and monitoring strategies and activities appropriate for meeting defined project objectives?
- Was the project on track to meet its objectives, considering changes, context, and amendments?
- What was the quality and frequency of monitoring and evaluation, and reporting, and has the project internalised lessons during implementation?
- Was adequate attention provided to risk management and mitigation measures during design, appraisal, and implementation?

43. **Stakeholders' participation.** In line with the NDB Evaluation Policy, key project stakeholders were engaged at crucial points throughout the evaluation process. This approach allowed for thorough consideration of their concerns and enabled the evaluation team to gain a comprehensive understanding of the project's design and implementation context. There were several interactions and communications, especially between IEO and the NDB Americas Regional Office (ARO), the Brazilian Government (via the Ministry of Finance and Ministry of Planning), the State of Pará Government, the Municipalities of Rurópolis and Placas, CAF and other relevant partners. Both formal and informal opportunities were utilised to discuss findings, lessons, and recommendations during the evaluation process. CAF also provided a peer review, which is included in annex I.

D. Limitations

44. It is appropriate for the evaluation to highlight a few limitations that may have affected the project's design, implementation, and supervision/monitoring, as well as the evaluation process. This project, approved in 2018, was the first sovereign loan to be approved by NDB in Brazil and was among the very first projects approved by the Bank in the country. When the loan was approved, there was still no regional office in Brazil, hindering the carrying out of some protocols and procedures that the Bank had adopted, largely due to language barriers and limited knowledge by the borrower of NDB's procedures. After the ARO became fully operational (it was established in 2019) the effectiveness and ease of administering operations improved.

45. At the time of project approval, many of NDB's policies, for example project design guidelines, were still under development. Furthermore, the COVID–19 pandemic, which began in 2020, impacted the timeliness of NDB's operations in the country, slowing down several operations, including this project. In addition, the pandemic reduced the availability of materials, increasing costs tremendously – up to 1,500% in some cases – including for cement, asphalt, and other inputs for road construction and drainage. This was somewhat balanced out due to currency fluctuation – the Brazilian real's value decreased by almost 30% during the project cycle. This unfortunately increased inflation, thus, again, making inputs more expensive, since asphalt in Brazil is valued by the oil price, which also went up.

46. As noted in paragraph 33 above, given that at the time of this evaluation project implementation had only reached 90.51%,[20] this evaluation should be considered as a "real-time" evaluation. Two limitations leading from this were:

    (i) At the closure of every project, NDB Management prepares a project completion report (PCR) – a type of self-assessment designed to measure the project's implementation performance and results. PCRs are useful documents for evaluators from IEO to use in their independent evaluations. However, since this project had not been completed at the time of this evaluation, a PCR was not available for IEO teams;[21] and

    (ii) The limited use of impact assessments: not only due to the timing of the evaluation, but also because impact indicators are still being developed by the Bank.

47. Finally, despite several reports, including technical details of the project, being made available to the IEO team, during the evaluation mission the team requested additional information from the PMO and government offices – but not all material arrived in time. Moreover, IEO had to rely on the PMO to support the organisation of field visits and meetings with authorities, which is not ideal for an independent evaluation; and of the nine municipalities involved in the project only two were visited, due to the distances, time and costs involved. Although the two municipalities do provide a sample of the reality, more cities should, ideally, have been visited to give a broader picture of the project.

E. Evaluation process

48. The evaluation was enhanced through systematic quality assurance processes. This involved peer reviews conducted within IEO and additional reviews and contributions from staff at CAF. Feedback on the draft approach paper and the draft final report from other relevant stakeholders further improved the quality of the final report. The evaluation went through the following phases:

20 Project progress report, December 2023.
21 In addition, IEO normally conducts an assessment of the overall quality of the PCR. This is called a project completion report validation – or PCRV. However, for this project no PCRV will be performed, because this project performance evaluation has already been conducted by IEO.

(i) **Desk review.** IEO conducted a comprehensive literature review including, inter-alia, the project design report, PDB, loan agreements, the project progress reports, supervision reports, and other relevant documentation and data.

(ii) **Field work.** Thereafter, IEO organised a field mission to Brazil to conduct data collection and initial analysis. The mission took place in the country from April 8–23, 2024, and key informants were interviewed, additional evidence was collected, and selected project sites were visited. The qualitative analysis relied on the use of semi-structured interview questionnaires used with key interviewees, field observations, and relevant project documents. The quantitative analysis relied mainly on secondary data, including data from the project's internal monitoring and evaluation system, financial data, as well as country and sector data from public sources. At the end of the field work, IEO produced a presentation, capturing its preliminary evaluation findings, and discussed the presentation in a debriefing meeting with the Ministry of Finance, the PMO, CAF, ARO colleagues and other related stakeholders.

The evaluation team visited initiatives in two (out of the nine) cities in Pará – Rurópolis and Placas – where the project was implemented, and met with the mayors, local authorities, construction workers and works auditors, as well as beneficiaries.

Moreover, the team conducted a thorough meeting with the PMO in Belém, Pará; and in Brasília, held meetings with government authorities from the Ministry of Finance (who are also representatives on NDB's Board), Ministry of Foreign Affairs, Ministry of Planning, and with NDB's ARO. Other meetings in Brasilia included with CAF, FONPLATA, the French Development Agency (AFD), United Nations Development Programme (UNDP), and in São Paulo with CAF's Private Sector department. The team held meetings in five cities, while covering around 1,000 km by road (around 200 km unpaved) and 4,830 km by plane inside Brazil. The agenda can be found in annex XV while the list of people met during the field work mission can be found in annex XVI.

(iii) **Drafting of the evaluation report.** Building on the desk and field work, IEO drafted the main evaluation report. The draft was shared with Brazil's Ministry of Finance, CAF, the PMO, other concerned in-country stakeholders, and NDB Management and operations for comments. The report was finalised considering all comments received. An audit trail was produced illustrating how the comments received have been incorporated by IEO in the final report. Once the final report was finalised, NDB Management prepared a written Management Response to the independent evaluation, which is included above.

(iv) **Evaluation lens.** IEO prepared an Evaluation Lens[22] and summarised the main evaluation results, which were translated into Portuguese and Chinese.

(v) **Board discussion.** The final evaluation report along with NDB Management Response was discussed in the Bank's Board of Directors meeting of August 2024.

(vi) **Disclosure.** In line with the NDB Evaluation Policy and Evaluation Strategy 2024–26, the main evaluation report inclusive of the NDB Management Response and the Evaluation Lens will be disclosed to the public at large through the IEO webpages and other relevant communication instruments.

(vii) **Stakeholders' workshop.** In cooperation with CAF, IEO plans to organise a final stakeholders' workshop in Brazil. The workshop would focus on learning, with the aim of discussing and exchanging views on the evaluation's main findings, lessons, and recommendations. The date for the workshop will be decided taking into consideration planned elections in Brazil, IEO commitments and other important aspects, and is likely to be held in 2025.

22 A two-page reader-friendly brochure summarizing the evaluation's findings and recommendations.

IV. PROJECT PERFORMANCE

49. Overall, thanks to the careful oversight and coordination by the State Government of Pará, along with support from NDB's ARO and headquarters teams, and the technical expertise and operational capabilities of the PMO (located at the SEDOP), the project has performed well, achieving, to date, most of its objectives and established indicators in the Design and Monitoring Framework (DMF). Since activities have not been fully completed, this chapter will focus mostly on the first three evaluation criteria: relevance, effectiveness and efficiency, as there hasn't been enough time from project completion to truly evaluate results of impact and the sustainability of project benefits. The evaluation mission was able to capture some important lessons that could be directly applied to the new operation currently being designed for the State of Pará.

A. Relevance

50. In accordance with internationally recognised standards, the relevance criterion evaluated:

(i) How well the project's objectives correspond with the government's policies and the borrowing country's needs, and with NDB's overarching strategy – both at the time of the loan agreement, as well as the current strategy – and other relevant bank policies and priorities;

(ii) Whether the design of the intervention was suitable for achieving the project objectives; and

(iii) How well the intervention has been modified, when necessary, to respond to any changes in circumstances during the implementation phase.

(i) Relevance of project objectives

51. **The project contributes to development in Brazil, through investments in urban infrastructure.** The project is aligned with the federal government's strategic guidelines, according to the multi-year plans or PPAs – the Portuguese acronym for Plano Pluri Annual – at the time of project preparation, during execution and at the end of the project:

(i) PPA 2016 to 2019 – *sustainable development guided by social inclusion and to improve the quality of life of the population, improving urban mobility;*

(ii) PPA 2020 to 2023 – *maintaining the previous guideline and adding articulation and coordination between federal entities, with a view to reducing regional inequalities, since it was implemented through a partnership between the government of the State of Pará and the benefited municipalities; and*

(iii) PPA 2024 to 2027 – *expansion and orientation of public investment, with emphasis on the provision of infrastructure and its maintenance.*

52. **The project is in line with the policy of promoting development in the State of Pará through investments to improve infrastructure and urban mobility.** Alignment correlates with the strategic guidelines of the PPA from 2016 to 2019, to:

(i) Promote sustainable production; and

(ii) Promote social inclusion, especially in relation to strategic dimension *3.4 – Social Infrastructure: housing, sanitation and urban mobility / Asphalt in the City Program – Xingu and Tapajós Integration Regions.* Further alignment and relevance take place in PPA 2020 to 2023, in relation to the strategic guideline of smart growth and strategic axes: infrastructure, economic development, social development, quality of life; and remained aligned with the strategic guideline of smart growth repeated in the PPA 2024–2027, strategic axes – *urban development, infrastructure and logistics, economic development, environment.* Specifically, the project contributes to the *Asphalt in the City Program,* as defined in the PPA 2020–2023 and with the *"Asphalt for everyone Program"* (PPA 2024–2027). The project contributes to the construction of 149 km of paved urban roads, helping the state government to exceed the planned target of 50 km.

53. **Alignment with NDB General Strategy.** The project was approved in 2018. It is highly aligned with NDB General Strategy for 2017–2021 with the rationale of *"Sustainable infrastructure development is at the core of NDB's operational strategy"*. The project also contributes to the General Strategy for 2022–2026, especially to the specific area of transport infrastructure; and cross-cutting themes of inclusiveness and climate change and disaster resilience; as well as to mobilise resources in the form of co-financing with other MDBs, since 50% of the project's resources were financed by the NDB and 50% by CAF.

54. **Alignment with Sustainable Development Goals (SDGs).** The project is highly relevant to SDG 1, SDG 8, SDG 9, SDG 10, SDG 11 and SDG 17. Improving urban mobility by paving urban roads contributes to the movement of products, including locally produced food, to the opening of commercial and service establishments such as restaurants and markets, generating employment and income, all contributing to the eradication of poverty (SDG 1), for decent work and economic growth (SDG 8), expanding infrastructure (SDG 9), and reducing inequalities (SDG 10). Indirectly, even SDG 4 (education) benefits from the facilitation of student accessibility to schools, on streets that, before paving, were obstructed during the long periods of intense rain, common in the Amazon region. Further, the general mobility of the population was also improved, contributing to the accessibility of places of work, sports, and social interaction that give people citizenship. The project also contributed to the construction of sustainable cities (SDG 11), as improving paving supports the reduction of vehicle maintenance, while drainage systems prevent flooding. Lastly, the project also supported SDG 17, as it promoted partnerships between municipal and state governments, as well as MDBs (NDB and CAF).

(ii) Relevance of project design

55. **The project document to the Board sufficiently presents information about the project.** The information on the contextualisation of the problems identified by the team responsible for preparing the project, presented in the PDB, was well documented, and based on official data. The institutional arrangement for the execution of the project, the information for financial, budgetary and procurement management, environmental and social monitoring, risk management and mitigation measures were provided. An ex-ante economic feasibility analysis was carried out which demonstrated the viability of the project.[23] As this is a co-financing project with CAF, the PDB presents the project design including the interventions to be carried out by CAF, beyond the co-financing arrangement. In this evaluation, the focus was on aspects related to the design of the project carried out with NDB resources, related to component 1 in the PDB and loan agreement, as previously mentioned.

56. **The project has a relevant design for understanding the alignment of problems, proposed solutions and objectives.** To understand the vertical logic of the project, it is necessary to review the problems faced by the State of Pará when the project was being prepared,

23 The benefits of the project were estimated based on the appreciation of real estate in the benefited regions, obtained using the hedonic pricing method. The net present value (NPV) was positive for all municipalities. The internal rate of return (IRR) was between 30–38%, which was comfortably higher than the threshold of 12%.

its objectives and intervention strategy. For evaluation purposes, IEO designed a theory of change (ToC) diagram (see annex II), which allows the relevance of the proposed interventions to be observed to solve the problems identified. The central problem was the state's lack of basic infrastructure and low levels of social development, where most urban roads in municipalities were not paved and only 1.5% meet the level of national standards for development (regarding paving, curbs, sidewalks, drainage and public lighting). Added to this were the difficulties faced due to the climatic conditions in the Amazon region, with intense and frequent rainfall for long periods of time, which makes it difficult for people to move around. In addition, it is essential to include the lack of technical, operational, and financial capacity of municipal administrations to carry out infrastructure work. To solve these problems, interventions were proposed for paving and draining urban roads in municipalities (component 1), which were financed by NDB and executed by the state government, with the specific objective of "increasing the percentage of drainage and pavement in nine municipalities of Pará".

57. **The Design and Monitoring Framework shows alignment between the proposed indicators and the project objectives for each component, but a greater number of indicators could have provided a richer analysis of the achievement of results.** With specific regard to the indicators for verifying the specific objective of the interventions financed by NDB (component 1), only one outcome and two outputs were foreseen in the original PDB.

58. So, the IEO team proposed a series of indicators for evaluation purposes that go beyond the basics: an impact indicator, two results indicators and a product indicator. The complete list of original and IEO-proposed indicators (plus measurement objectives for the new indicators) can be found in the table below. See annex III for more information.

TABLE 6.

DMF indicators for component 1 – original and new (proposed)

Indicator category and description	Measure's objective to:	Original or new indicator for this evaluation?
Impact indicator		
Proportion of the population below the international poverty line	Reduce poverty and inequalities in the region through the implementation of sanitation, mobility, and communication initiatives	Proposed new indicator
Outcome (results) indicators		
A. Increase urbanisation rate in the selected municipalities	-	Original indicator
B. Population increases with access to paved urban roads, with drainage, half and sidewalk	Increase the percentage of drainage and pavement of the municipalities of Pará, improving urban mobility	Proposed new indicator
C. Increased municipal tax collection	Increase the percentage of drainage and pavement of the municipalities of Pará, improving urban mobility	Proposed new indicator
Output (product) indicators		
1. Square meters of paved urban roads, with drainage and sidewalks	-	Original indicator
2. Operational Manual developed for maintenance of paved urban roads with drainage system	-	Original indicator
3. Training workshop of technicians to maintain urban roads in the municipalities	-	Proposed new indicator

Source: IEO evaluation team.

59. **The loan amendments did not lead to any changes in the design of the project but did lead to funding reallocations and a time extension to project implementation.** Three loan amendments took place during implementation: Amendment Letter N. 1 on June 20, 2022; Amendment Letter N.2 on June 28, 2022; and Amendment Letter N. 3 on September 21, 2023. The most significant changes concerned the:

(i) Reallocation of resources between spending categories, from the other categories to the civil works category (see table 4), due to the increase in the cost of building materials, as a result of the inflation caused by the COVID 19 pandemic (Amendment Letter N.2); and

(ii) The extension of the implementation period by 18 months to September 10, 2024, due to delays in execution (Amendment Letter N. 3). The delays were caused by difficulties in purchasing construction materials as mentioned above, delays in the project's accountability and disbursement procedures by the PMO, and problems with one of the construction companies. The delays caused mismatches in the measurement and payment schedules for the works. NDB's Americas Regional Office provided significant support to the PMO team to carry out the accountability procedures and avoid further delays in disbursements. During the mission, the evaluation team was informed that delays in the disbursement of project funds, in addition to the financial difficulties that the company responsible for the works was facing and the increase in the cost of construction materials, were the main reasons why that company ended up abandoning the works. This paralyzed implementation for one year in Rurópolis (see project performance assessment, H1 2023). Consequently, the PMO called upon the company that came second place in the original bidding process to take over the construction work, and they began in the middle of the rainy season. This also brought further delays to the construction works, since pavements cannot normally be built and installed during the rain. The new company, together with the PMO construction supervision team, managed to resolve the problems and continue with the works, which were completed satisfactorily.

60. **The institutional governance arrangement was not implemented as expected, but the project was prioritised by the state government, which contributed to decisions being taken quickly, avoiding further delays.** As mentioned in para. 26 above, the original institutional arrangement planned for implementing the project was made up of two levels of governance:

(i) The steering committee (with seven state secretariats); and

(ii) The PMO, the unit responsible for executing the project, with eight employees. The steering committee was ultimately not implemented, as decided by the new government managers elected in 2018. Decisions about the project were taken directly by the Secretariat for Urban Development and Public Works, with direct dialogue with the State Governor, taking quicker decisions on the implementation of the project. The PMO team included career civil servants (two employees)[24] and the others were consultants hired to support project management and supervision of the works, with CAF funding. The general coordination of the PMO reported that the support of the management and works supervision consultants was essential to guarantee the implementation of the project. Another relevant aspect identified was the close working relationship between the PMO team and the municipalities for the execution of the works and the resolution of adverse circumstances during implementation. One instance was the modification of work procedures to avoid damage to the work during periods of heavy rain.

24 The PDB pointed out the importance of 50% of the PMO team being state career civil servants, but there were not enough professionals, and it was necessary to hire support consultants.

61. **Management and monitoring processes.** The project's monitoring activities were foreseen in the project administration manual and included the preparation of monitoring reports – project performance assessments, project progress reports, and monitoring missions.

62. **Risks and mitigation measures.** The project's risk matrix (see annex XII) shows the expected risks that have occurred, and the mitigation measures planned:

(i) There were changes in government due to the elections for governor in 2018, as foreseen, but the project was maintained according to the prepared design, with no significant changes in the implementation of the interventions or in the management of the project. The only change was the exclusion of the steering committee, but this did not affect the execution of the project, since it was prioritised by the governor as being directly aligned with government policies;

(ii) There were risks to *maintaining the project's results* – but effective mitigation efforts were implemented: for example, 13 pressure washing trucks were bought to improve maintenance of the drainage network, and garbage cans were installed every 100 metres of the newly paved roads to avoid clogging of drainage systems with garbage, which would otherwise flood. Also, the preparation of the operations manual of the roads and drainage system, and workshops with representatives from municipalities to coordinate project implementation and promote adequate maintenance of the investments are scheduled to be held;

(iii) The expected risks related to financial management occurred, as already explained, although they were mitigated with ARO support, however causing execution delays; and

(iv) *Technical risks due to excessive rainfall* in the Amazon occurred, however, the only risk identified was of a delay in starting the project, not a risk of delays during the whole project due to the annual raining season. The planned mitigation measure of starting work during the dry season could not be implemented in one of the municipalities (Rurópolis) due to construction delays. So the construction company's team, together with the PMO's construction supervision team, mitigated such problems by developing innovations in the construction processes – for example by opening and completing small construction sites instead of large ones. In addition to the expected risks, the COVID–19 pandemic affected the execution of the project, due to the increase in the cost of construction materials, especially asphalt for paving (a product derived from oil), causing an increase in project costs and delays in execution. The increase in costs was paid for by the state government, and did not jeopardize the completion of the works.

63. Major risks not identified were currency fluctuations, inflation, and the length of internal approval processes. Currency risk and inflation are constant risks for the execution of projects in Brazil; however, the project was also affected by currency and oil price fluctuation. Additionally, the time for governmental approval should be better considered and measured, which can cause additional risks. (Costs overruns and their causes will be discussed under the section on efficiency).

64. **Summary.** The project objectives were indeed relevant not only to the country and local context and government priorities, but also consistent with the broad development goals that Brazil has been in pursuit of. They were also consistent with NDB's general strategy at the time. Considering the need to add indicators to better assess the achievement of the project's objectives, especially related to the DMF, as reflected in the below section, and a better identification of major risks involved in the project, the **Relevance** of the project is rated as **Successful (5)**.

Criterion	Rating
Relevance	Successful (5)

B. Effectiveness

65. The effectiveness criteria assessed the extent to which the project objectives and targets have been achieved or are likely to be achieved. Other areas that are assessed under this criterion are the extent to which the project supported innovations in response to stakeholders' needs, and whether the project achieved other objectives or had any unexpected consequence(s).

66. **Project Design and Monitoring Framework.** As indicated in the NDB Project Implementation Guidelines (2018), the DMF is a core element of the project administration arrangements to ensure a logical structure is in place for a result-focused project design. As mentioned in paragraphs 57 and 58 above, the IEO team considered that the DMF could have had more indicators to ensure better monitoring of the project and further evaluation of its effectiveness (please see table 6 above for the IEO indicators for this evaluation). It would also have been important to provide indicators for cross-cutting issues of gender, diversity and environment (see annex III for some suggestions of indicators to be used in similar projects and annex V for contrafactual examinations for these indicators).

67. **For evaluation purposes, new indicators are proposed.** The IEO team proposes an impact indicator, two outcome indicators and an output indicator to be added to the project's DMF and considered in the evaluation of the project's results: impact indicator – *Proportion of the population below the international poverty line;*[25] results indicators (outcomes): B. *Population increase with access to paved urban roads, with drainage and sidewalk;* and C. *Increased municipal tax collection;* product indicator (outputs) – *Training workshop of technicians to maintain urban roads in the municipalities.* (See annex II which contains a diagram showing the vertical logic of how these proposed indicators contribute to understanding the achievement of project results.) The conceptual and methodological information, baseline data and target for the new indicators are presented in annex III. The evaluation team designed an effectiveness matrix to visualise the new proposed indicators and to check whether the indicators would be achieved after the end of the project – which is scheduled for September 2024.

68. **Project objectives achievements.** The original outcome indicator in the DMF, "Outcome A. Increase urbanisation rate in the selected municipalities", could not be measured because the data from the 2022 Brazilian Institute of Geography and Statistics census has not yet been made available by the Brazilian government; so this indicator should be measured by the project team after the end of the execution period. For the new indicators proposed by IEO team (see paragraph above), the results were satisfactory: regarding Outcome B there is a 6% growth in the population with access to paving, drainage and sidewalks, which exceeds the target of 5%; regarding Outcome C the collection of taxes from the municipalities has increased by 50.8%, which exceeds the target of 10%. These results are attributed to the project, as shown in the counterfactual analysis (see annex V). Regarding outputs, the targets for the first indicator are on track to be achieved, since 124 km of urban roads with drainage systems have been built, against the target of 137 km;[26] while the effective implementation of the last 13 km and the implementation of the trash bins need to be monitored and assessed by the NDB's operations team. Activities to obtain the other output, *"Operational Manual for maintenance of paved urban roads with drainage system"* are underway and the effective implementation need to be monitored and assessed by NDB's operations team.

25 See: https://odsbrasil.gov.br/objetivo1/indicador111.
26 Project Performance Assessment, December 2023.

TABLE 7.

Design and Monitoring Framework achievements

Design summary	Performance indicators and targets	Reporting mechanism	Achievements
Impact			
Reduce the proportion of people living below the international poverty line in the Pará State, contributing to achieving SDG 1.	Proportion of the population below the international poverty line (%) in Pará. Base line (2018): 13%; Target: 10%.	Statistics published by the IBGE for measuring indicator 1.1.1/SDG 1 see here.	Exceeded: 7.5% of the population of Pará lived below the international poverty line in 2022.
Outcomes			
Outcome A. Increase the urbanisation ratio in the municipalities attended by programme.	Increase the urbanisation ratio in the municipalities supported by the programme from 1.25% to 30%.	2022 IBGE Demographic Census.	Data from the 2022 IBGE Demographic Census has not yet been made available by the government. Check at the end of the project.
Outcome B. Increase in the population with access to paving, drainage and sidewalks.	Increase 5% in the population with access to paving, drainage and sidewalks.	2022 IBGE Demographic Census https://cidades.ibge.gov.br/.	Exceeded: increase 6.9% of the population with access to paving, drainage and sidewalks.
Outcome C. Increased municipal tax collection.	10% increase in municipalities' own revenue (e.g. municipal taxes).	Data from the "SICONFI" portal/National Treasury Secretariat (2023).	Exceeded: increase 50.8% in municipalities own revenue.
Outputs			
Urban dirt roads upgraded to paved roads with the integration of rainwater and installation of trash bins.	137 km of existing urban dirt roads upgraded to paved roads with the integration of rainwater and installation of trash bins in 9 municipalities.*	PMO Reports.	On track: 124 Km of existing urban dirt roads upgraded to paved roads with the integration of rainwater.
Development of Operations Manual for Paving and Drainage system maintenance and workshops with representatives of municipalities.	1 Operations Manual for Paving and Drainage system maintenance; 1 Workshop.	PMO reports.	Activities in progress.

Source: Project Progress Report Dec 2023; PDB.
Note: IBGE = Brazilian Institute of Geography and Statistics.
* (1) the PDB refers to 186 km of urban roads for the 12 municipalities. For evaluation purposes, we only considered the 9 municipalities benefiting from NDB resources, so that the target is now 137 km. The target of 186 km considered three municipalities benefiting from CAF resources (Anapu, Pacajá and Porto de Moz).
(2) PMO planned to pave 149 km of roads by the end of the programme, which will exceed the target of 137 km. By December 2023, the official figure, according to the Project Progress Report, was 90.51% of the target of 137 km paved, i.e. 124 km paved.

69. **The project made investments for small cities – which are otherwise without the capacity to make investments from their own resources – possible.** The institutional arrangements put in place by the State of Pará has made it possible to make significant investments to improve the lives of the population of small towns that would otherwise not have the financial, technical, and operational capacity to carry out the work. Eight of the nine municipalities have populations ranging between 10,000–50,000 inhabitants and the ninth has just less than 100,000 people. These, according to Brazilian legislation, cannot receive external financing (see municipal population data in annex V). Additionally, small municipalities do not have efficient tax collection systems of their own, so they have extremely limited investment capacity (see table with municipal own revenues in annex V). Most of their income comes from direct transfers from the state and federal governments. Furthermore, municipalities are not likely to have qualified professionals to lead infrastructure investment projects like this only by themselves.

70. **The development of an operations manual for paving and drainage system maintenance and workshops with representative of municipalities.** During the mission the IEO team was informed that the operations manual was under review and that the dates of the workshop were under discussion due to the municipal elections that will result in some management changes starting from January 2025. The operations team will have to find a solution to the lack of training in this project and how to ensure that training occurs in future projects.

71. **The project was able to transform the urban landscape of small cities and contribute significantly to improving urban mobility, access to basic public services and quality of life of beneficiaries.** The project made it possible to complement a significant part of the urban infrastructure of the municipalities, contributing significantly to urban mobility and improving people's quality of life. In municipalities, paved streets now cover a large part of the urban perimeter, contributing to modifying the urban landscape and people's lives. Due to the prolonged seasons of intense rain in this region, people were often unable to move around because of the excessive mud on the roads, and even wastewater that would run down streets, hindering access to basic education and health services. However, with the new paving and drainage systems in place, the percentage of high school pupils not completing their education decreased in the municipalities that benefited from the project, with even slightly better averages compared to the State of Pará and Brazil as a whole. On average, as shown in table 8 following page, the percentage of pupils not completing their education in the nine beneficiary municipalities fell from 18.76% in 2017 to 16.38% in 2022, a decrease of 12.7%, while for the State of Pará the dropout rate fell by 11.48% and for Brazil by 6.56%. Before the project, the non-completion rate was slightly higher in the group of beneficiary municipalities than in the State of Pará and in Brazil.[27] Difficulties in getting around also caused losses to small commercial and service establishments, in addition to hampering the circulation of goods in cities. Furthermore, the dust generated from un-paved roads in seasons without rain caused several serious respiratory diseases. The project improved the quality of life over 300,000 people in small cities in the Amazon region (see table 15).

27 Sources: data prepared by the UNDP based on data from the Anísio Teixeira National Institute for Studies and Research (INEP). Basic education census, 2014 to 2022. Available at: https://www.gov.br/inep/pt-br/acesso-a-informacao/dados-abertos/indicadores-educacionais/taxas-de-rendimento-escolar.

TABLE 8.

Percentage change in high school dropouts before and after the project

Country, state, municipalities benefited	High school		
	2017	2022	%
Brazil	**6.1**	**5.7**	**-6.56**
Pará	**12.2**	**10.8**	**-11.48**
Itaituba	15.8	15.1	-4.43
Medicilândia	20.4	8.5	-58.33
Novo Progresso	21.6	19.2	-11.11
Placas	11.6	10.6	-8.62
Rurópolis	14.5	5.5	-62.07
Senador José Porfírio	19.2	22.6	17.71
Trairão	34.4	30.1	-12.50
Uruará	12.6	19.4	53.97
Municipal average	**18.76**	**16.38**	**-12.72**

Source: UNDP/data from INEP: Basic education census, 2014 to 2022.
Note: There is no information available for Brasil Novo.

72. **The project contributed to generating innovations in constructing paving with drainage systems, during periods of intense rain.** As mentioned previously, there were delays in the execution of works in the municipality of Rurópolis which meant that work had to advance during periods of intense rain. The works supervision team, together with the construction team, discovered a way to continue the work, despite difficult weather conditions, by reducing the length of each work front and only starting a new front (with new excavations), when the drainage systems on the first front had been completed. And so, by successively opening and completely closing small sections of works, they were able to avoid disruptions due to the amount of rain, and complete the works.

73. **In summary,** as the project is ongoing and is scheduled to end in September 2024, some indicators could not be measured either due to a lack of information (such as for outcome A) or because some activities are still ongoing – such as the installation of the trash bins and development of the operations manual. For this real-time evaluation, new indicators were proposed. The results already achieved show that the project is on course to achieve the proposed objectives at the end of implementation. The evaluation assesses **Effectiveness** as **Successful (5).**

Criterion	Rating
Effectiveness	**Successful (5)**

C. Efficiency

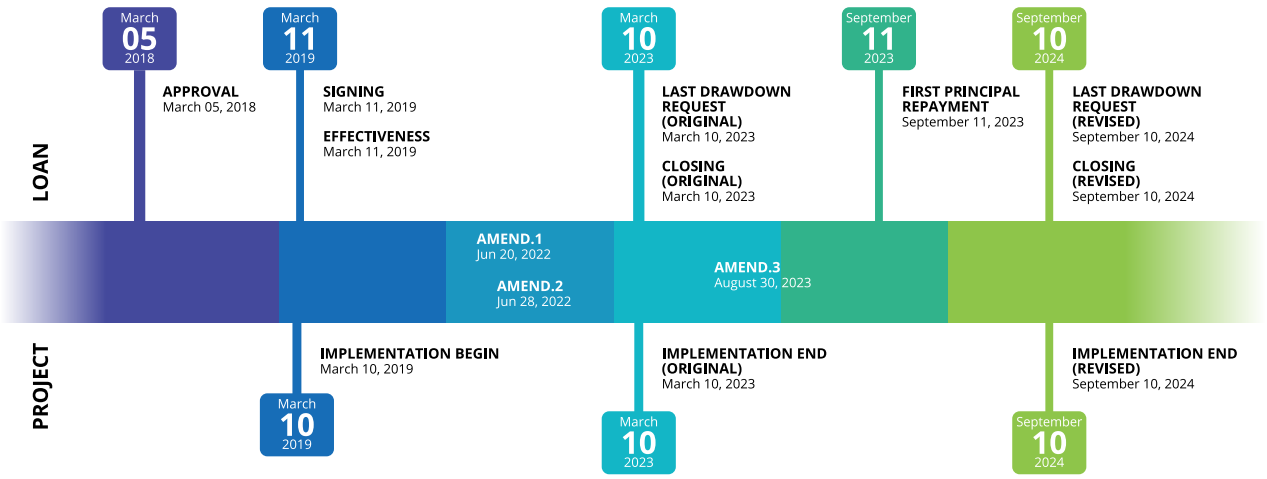
74. The efficiency criterion aims to determine the extent to which the NDB intervention has achieved, or is expected to achieve, results economically and promptly. "Timely delivery" refers to the realisation of outcomes within the planned schedule or an adjusted timeframe that accounts for changes in context. Efficiency also considers operational efficiency, specifically the effectiveness of the intervention's management.

(i) Administrative efficiency

75. As shown in figure 1 below, the time taken between NDB Board approval, the signing of the loan agreement, and effectiveness of the project took 371 days. This is about the average length of time taken in Brazil's sovereign portfolio for most MDBs, due to the country's extensive approvals process. External credit operations for states and municipalities need to be authorised by the Federal Government and the Senate. To this end, approval is required in four main steps, with several intermediate steps from: the Brazilian Coordination for Foreign Financing (COFIEX) (*Coordenação de Financiamentos Externos*), National Treasury, National Finance General Prosecutor (PGFN) (Procuradoria Geral da Fazenda Nacional) and Federal Senate. The first instance is COFIEX, a body linked to the Ministry of Finance responsible for the weighing up and evaluating projects for international fundraising. The state or municipality must send a consultation letter that will be analysed by the GTEC (COFIEX Technician Group), considering the technical content of the project and a preliminary analysis of the entity's payment capacity. With the approval of COFIEX, a request for limited verification is opened with the National Treasury Secretariat (STN). This second stage aims to evaluate state or municipal finances and loan conditions, to understand if they are within the criteria determined by the legislation. With the favourable opinion of STN, the process is sent to the Attorney General of the National Treasury, where the legal analysis of the minutes of the contract is performed. Then the request is sent to the Presidency of the Republic, which sends a message to the Senate for approval in the plenary. With this last endorsement received, the entity is finally authorised to sign the contract with the financial institution. This is a major aspect affecting implementation that needs to be considered by NDB in its future projects.

FIGURE 1.

Project implementation timeline



Source: Elaborated from PDB, PAM, Project Performance Assessments and PPRs.

(ii) Operational efficiency

76. As presented above, the loan agreement went through three amendments, the latest extending the project completion by 18 months due to operational challenges faced by the PMO, including:

- **Change in the costs of inputs for works during the period.** Most of the inputs for asphalt are linked to international oil prices, that consider the exchange rate and oil variation in the international market. Due to the increase in oil prices and substantial devaluation of local currency since project appraisal, the value of asphalt has risen by almost 140% (as of the last project progress report in December 2023), which could be better equated if the loan was in local currency.

- **Change in project designs.** The initial bids were built only on Basic Design Projects (Projetos Básicos), which contained limited technical information about the streets to be paved. Once the contracts were initiated and the detailed projects were executed, it became necessary to adjust the estimated quantities for the works, including inputs, drainage volume and asphalt paving. These changes were reflected in the amendments to the contracts. The bidding process, conducted by the previous government, did not account for logistical issues and input scarcity in the municipalities, nor did it include a feasibility study. All these studies and their associated costs were undertaken after the contracts were signed, leading to a significant increase in the quantities of works compared to those presented during the bidding. The use of country systems limits the enforceability of proposals and recommendations to make the bidding process more agile or tailored to avoid these kind of issues.

- **Excessive rain during project implementation.** The Amazon region experiences two seasons: the rainy season and dry season. The rainy season, lasting from October to March, brings long-duration rainfall on a daily basis which halts paving works (see annex VIII). During the dry season, it still rains almost daily but with less intensity, providing a six-month window for construction. However, due to amendments or re-tendering of some contracts during implementation, works were interrupted during the dry period and could only resume after 12 months, resulting in the loss of the entire dry season. Preparatory works, such as the base and sub-base that were not asphalted during the dry period were destroyed by rains, and will need to be redone, increasing contract costs.

(iii) Contract and funding

77. At the time of evaluation and based on the latest project performance assessment in 2023, deviation of funding was at 31%.

TABLE 9.

Project funding deviation by July 2023

Initial estimate (BRL million)	Latest estimate (BRL million)	Cost-overrun funding / Shortage of planned funding
153.8	**388.7**	Cost-overrun of BRL 234.9 million, due to sharp increase in prices of inputs, which will be funded by currency devaluation, increase in state government counterpart funding and reallocation of loan proceeds.

Source: Project Performance Assessment in 2023.

78. Initially, the project envisaged four contracts financed by NDB, with a total contract value of approximately BRL 153.8 million. The remaining project costs were to be covered by counterpart funding through the "Asfalto na Cidade" project and financial costs such as front-end fees, commitment charges, and interest during construction. By the end of the reporting period, eight contracts had been awarded, totalling BRL 372.8 million, which is 242% of the total contract value estimated at appraisal. Due to the devaluation of the BRL during project implementation, the cost overrun in USD amounted to USD 19.32 million, corresponding to a deviation of approximately 31% from the initial contract estimates. The following table provides the actual contracts awarded per year.

TABLE 10.

Contract amount awarded per year

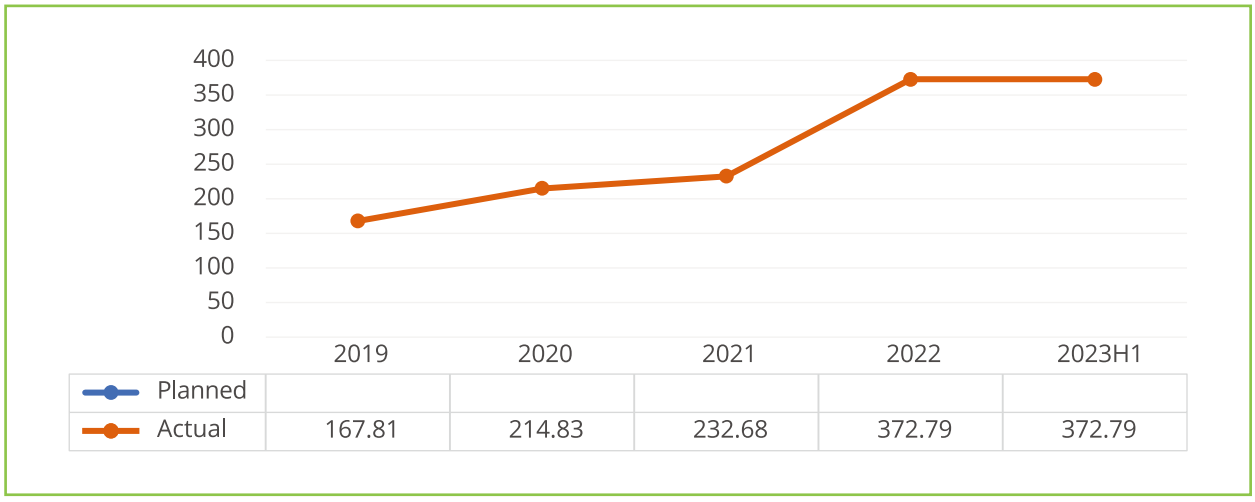
Contracted amount (BRL million)	FY2019	FY2020	FY2021	FY2022	FY2023	Total
Plan*	-	-	-	-	-	-
Actual	167.81	47.02	17.85	140.11	167.81	372.79

Source: Project Performance Assessment 2023.
Note: Total contract amount awarded differs from project funding latest estimate since the latter includes actual and estimated price escalation of contracts.
* The project administration manual did not include a yearly plan for contracting.

FIGURE 2.

Contract signing curve

(Accumulated, BRL million, original plan vs actual values as of June 30, 2023)



Source: Project Performance Assessment 2023.
* The project administration manual did not include a yearly plan for contracting.

(iv) Financing

79. By the end of the reporting period, the project cost incurred was BRL 365 million, which was 98% of the latest project cost estimates. The funding received by the implementing agency was BRL 366.41 million, which was 172% of the original financing plan. The difference between the incurred costs and funds received by the implementing agency is BRL 1.37 million considering the advance for eligible expenditures has not been completely used within the original loan availability period.

TABLE 11.

Project financing (BRL million)

	2019	2020	2021	2022	2023H1
Original financing plan	21.25	116.88	53.13	21.25	-
Actual cost incurred	78.09	107.23	62.64	71.04	46.00
Funding received	84.13	112.56	86.63	43.79	39.26
• **Government of State of Pará CF**	53.14	1.83	-	36.62	39.26
• **NDB Loan**	30.99	110.73	86.63	7.17	-
Actual funding received as % of original financing plan	396%	96%	163%	206%	-

Source: Project Performance Assessment 2023.

TABLE 12.

Project fund cumulatively received by sources (BRL million)

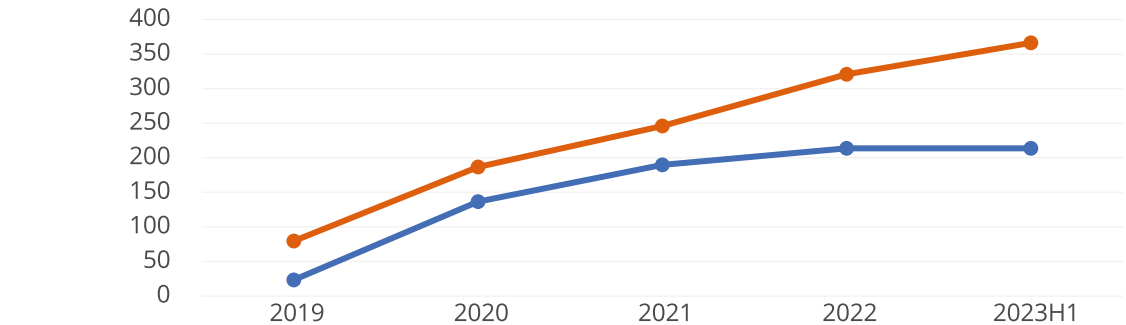
Source	Planned	Actual	A/P (%)
NDB loan	170.0	235.52	138.5%
Government of State of Pará CF	42.5	130.85	307.9%
Total	212.5	366.37	172.4%

Source: Project Performance Assessment 2023.

80. The difference between the original financing plan and the actual financing is shown in the following figure:

FIGURE 3.

Project financing curve
(Accumulated, BRL million, original plan vs actual values as of June 30, 2023)



	2019	2020	2021	2022	2023H1
Planned	21.25	138.13	191.25	212.50	212.50
Actual	78.09	185.32	247.96	319.00	365.00

Source: Project Performance Assessment 2023.

(v) NDB loan disbursement

81. The NDB loan disbursement ratio was 93% by June 30, 2023, and reached 100% by December 2023, while 90.51% of the NDB target of 137 km of newly paved roads had been reached.

TABLE 13.

Project disbursement by year

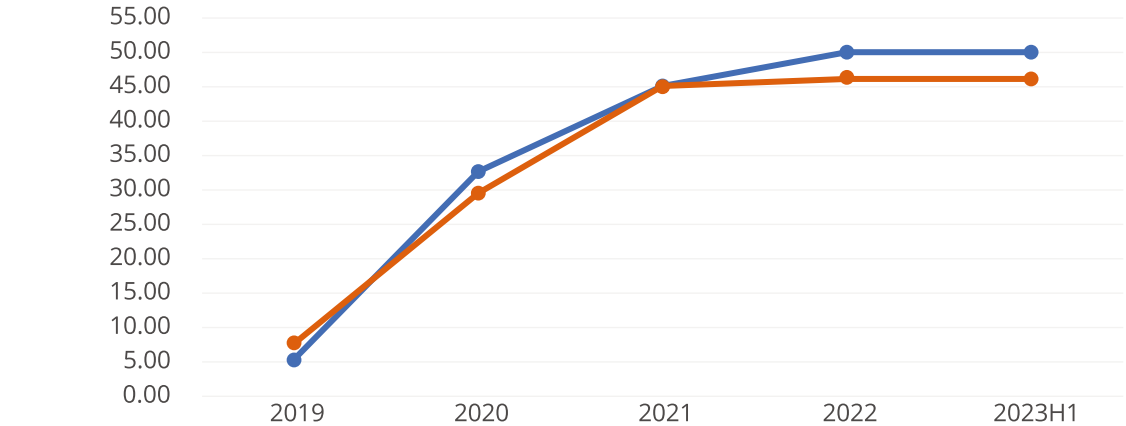
Disbursement of NDB Loan (USD million)	FY2019	FY2020	FY2021	FY2022	FY2023	Total
Plan*	5.00	27.50	12.50	5.00	-	50.00
Actual	7.72	21.64	15.57	1.39	-	46.32

Source: Project Performance Assessment 2023.

FIGURE 4.

NDB loan disbursement curve

(USD million, original plan vs actual values as of June 30, 2023)



	2019	2020	2021	2022	2023H1
Planned	5.00	32.50	45.00	50.00	50.00
Actual	7.72	29.36	44.93	46.32	46.32

Source: Project Performance Assessment 2023.

TABLE 14.

Project cost overrun (in millions of USD)

Financing plan			
Uses of funds			
	Original	**Revised**	**Change**
Civil works contracts			
Original contracts	46.12	43.00	
Consorcio Brasil Novo*	0.00	3.38	
Sub-total	**46.12**	**46.38**	**0.6%**
Other project components			
Equipment for maintenance	2.75	2.75	
Capacity-building	0.25	0.25	
Studies, design and social & technical	0.75	0.49	
Works			
Front-end fee	0.13	0.13	
Sub-total	**3.88**	**3.62**	**-6.6%**
State of Pará counterpart			
"Asfalto na Cidade" programme	12.50	13.85	
Consorcio Avante Pará I*	0.00	4.09	
Consorcio Avante Pará II*	0.00	4.19	
Consorcio Acari-Pavienge-Ibiza*	0.00	9.68	
Sub-total	**12.50**	**31.81**	**154.5%**
Total uses	**62.50**	**81.81**	**30.9%**
Cost overrun		**19.32**	
Sources of funds			
	Original	**Revised**	**Change**
NDB Loan			
Disbursed	0.00	44.93	
Remaining disbursement	50.00	5.07	
Sub-total	**50.00**	**50.00**	
State of Pará counterpart			
Original counterpart funding	12.50	13.85	
Additional counterpart funding to cover costs-overruns	0.00	17.96	
Sub-total	**12.50**	**31.81**	**154.5%**
Total sources	**62.50**	**81.81**	**30.9%**

Source: Project Performance Assessment 2023.

82. The PDB and PAM assigned USD 1.6 million for contingencies in the NDB funded part, representing around 3.2% of the NDB budget. A higher contingency should be considered for this kind of project, especially considering the currency risk, the geographical and climactic characteristics of the region and the time of execution. Even though the COVID–19 pandemic could not be predicted, it should be considered as an extreme factor, like climate change, that can interfere in the costs involved for project implementation. As IEO identified in its Evaluation of NDB's Fast-Track Support to the Covid–19 Emergency a strategy for dealing with uncertainties like COVID–19 should be in place in the Bank, including elements to be considered during the appraisal and corrections to make during project execution. Local currency financing is one of the tools. For example, even with a higher contingency of around 10%, and not considering the reassignment of resources, the project would have run into a considerable cost overrun. As per the loan agreement the borrower had to cover the cost overrun, in order to guarantee the implementation of the project.

83. **In summary.** As described above, the implementation of the project was conducted during the COVID pandemic which brought numerous challenges. Regardless of these factors, the project is almost complete, however with a significant cost overrun, and around 18 months delay. The cost overruns were covered by the State of Pará funds as agreed. These costs could have been better assessed during the appraisal phase, to consider the effects and risks of currency devaluation and international oil prices, added to external factors, such as climate change and the climatic and geographical characteristics of the location of the project. Also, a more robust contingency line in the initial budget and the financing in local currency should be considered. Moreover, the time for internal approval within the Brazilian Government of 371 days also impacts the costs appraisal. Considering that there were three loan amendments and high project cost overruns took place during implementation, the rating of **Efficiency** is assessed as **Moderately Successful (4)**.

Criterion	Rating
Efficiency	**Moderately Successful (4)**

D. Impact

84. Impact measures the extent to which the project has created significant positive or negative effects, whether intended or unintended, at higher levels environmentally, economically, or socially. It is important to remember that the project has not yet concluded, which affects the evaluation of this criterion. In most development projects, the impact often takes time to become evident. Therefore, it is too early to assess the overall development impact for this project, particularly for outcome indicators, as mentioned previously. Furthermore, detailed data is essential to assess impact on specific groups, such as women and youth. The evaluation team has requested additional data, though it had not yet arrived by the time of this report. It is also important to recognise that impact may not solely result from the construction of streets and drainage systems. Therefore, a quasi-experimental evaluation with counterfactuals was conducted, proving further indication of impacts.

85. The project already presents noticeable social and economic improvements in the lives of beneficiaries. Urban development projects focused on pavement and drainage systems offer multifaceted benefits, including enhanced infrastructure, economic growth, improved public health and safety, environmental sustainability, greater social well-being, climate resilience and improved urban aesthetics. All of these are, at different stages for each municipality, present in the project areas.

86. **Improved infrastructure.** Since the installation of better paving in most municipalities, beneficiaries informally consulted confirmed they spent less on vehicle maintenance than before. It was also evident, through observations by the evaluating team, that in places where paving and drainage were present, beneficiaries were more likely improve their housing and gardens – for example by painting and installing window-walls and window-doors, facing the streets.

87. **Economic growth.** The improved infrastructure mentioned above attracted new businesses, especially inside neighbourhoods. This led to job creation and economic growth. Additionally, the newly enhanced infrastructure led to an increase in property values in the surrounding areas in all nine municipalities. Consequently, there was an increase in the municipalities' own revenue, based on an increase in the tax-take from the main municipal taxes: property and urban tax, tax on the transfer of movable property and tax on services of any nature, as indicated by the results of "Outcome C – Increased municipal tax collection", (see table 7 in the "effectiveness" section). Before and after analysis was carried out for the group of beneficiary municipalities and a control group made up of similar-sized municipalities located in nearby regions in the State of Pará.[28] In the beneficiary municipalities, there was a 50.79% increase in the collection of these taxes between 2017 and 2023, while in the control group there was a reduction in collection of - 1.54% (see annex V), which demonstrates the positive economic impacts attributed to the project.

TABLE 15.

Increased municipal tax collection

Municipality	Population 2022	Own collection of municipal taxes (USD)		
		2017	2023	%
Municipalities benefiting from the project				
Brasil Novo	24,718	652,574	474,040	(27.36)
Itaituba	123,314	5,361,323	10,546,279	96.71
Novo Progresso	33,638	1,575,052	474,040	(69.90)
Placas	18,668	69,179	551,835	697.70
Senador José Porfírio	22,576	406,461	234,490	(42.31)
Trairão	15,242	390,951	446,663	14.25
Uruará	43,558	964,269	1,476,363	53.11
Total	**281,714**	**9,419,809**	**14,203,709**	**50.79**
Control group				
Paragominas	105,550	10,905,243	11,632,247	6.67
Bagre	31,892	77,906	54,380	(30.20)
Gurupá	31,786	261,551	348,946	33.41
Itupiranga	49,754	780,914	819,189	4.90
Curionópolis	19,950	1,079,628	271,174	(74.88)
Jacundá	37,707	848,087	931,699	9.86
Tracateua	28,595	683,229	353,600	(48.25)
Total	**305,234**	**14,636,558**	**14,411,233**	**(1.54)**

Source: (1) Population – IBGE 2022; (2) Municipal taxes – FINBRA/STN.

28 Difference-in-differences combines these two methods to compare the before-and-after changes in outcomes for treatment and control groups and estimate the overall impact of the programme. Difference-in-differences takes the before-after difference in treatment group's outcomes.

88. **Social benefits.** According to interviews during the mission, the infrastructure installed by the project led to a more comfortable and efficient urban living environment, enhancing the overall quality of life for residents. The improved streets and drainage systems enhanced accessibility for all, including for people with disabilities, cyclists, and pedestrians.

89. **In summary**, the pavement and drainage activities in the project provided initial improvements for public health, and economic improvements for beneficiaries. Since the project is still not finished it is not possible to carry out a wholistic assessment of the impact at this stage; and, as a consequence, it is not possible to provide a performance rating for the impact criterion.

E. Sustainability

90. This criterion evaluated the longevity of the project's benefits beyond its conclusion. Specifically, sustainability concerns whether the project's net benefits are expected to persist or are likely to endure after its completion.

91. **Project results maintenance.** Municipal budgets are approved annually, meaning that allocating funds for project maintenance (e.g. on drainage systems) in advance is not possible. In this context, NDB proposed that in the PDB and PAM some initiatives be added to ensure sustainability of the works and results from the project.

92. **Project design sustainability.** During project appraisal, the decision was to implement bituminous asphalt streets, with two lanes, (3.5 m each), and sidewalks of 1.0–2.5 m wide, with a design life cycle for paved roads of 10 years. It was crucial to include the maintenance in the design stage, since this activity will not generate an income of its own, thus not allowing for traditional financial evaluations of return rates. Proper maintenance secures efficient operation during or even beyond the life cycle. The average construction cost is about USD 316,700 per km. The annual maintenance cost is estimated to be approximately 10% of the unit construction cost.

93. In order to underline the importance that it holds for road maintenance, NDB proposed to further finance two additional parts in the project:

    (i) Procurement of pressure washing trucks for drainage system maintenance; and

    (ii) Training workshops on road and drainage maintenance, and guidance on using relevant equipment (e.g. cold mixed asphalt paving repair and the use of pressure washing trucks).

    Road maintenance was also fully considered in the project planning stage, which included:

    (i) Routine maintenance, including road cleaning, paving repair; and

    (ii) Periodical maintenance, including repaving sections, adding structural reinforcements, reconstruction after removing existing broken paving and other improvements in design and construction.

94. The maintenance of a drainage system is based on the monthly cleaning of the drainage structures. Pressure washing trucks will use clean, high-pressure water to clean the system. A further benefit of such cleaning will be to reduce rainwater overflow in urban areas.

95. NDB also financed capacity-building to prepare an operations manual of the roads and drainage system, and to fund workshops with representatives from municipalities to coordinate project implementation and promote adequate maintenance of the investments. Engagement with local communities will also clarify responsibilities of government authorities vis-a-vis local authorities who are ultimately responsible for the maintenance of the roads and drainage networks. This part of the project has not taken place yet. It is important to remember that a large part of this component was reallocated to the construction works expenditure category, as presented in the 3rd loan amendment (see table 4).

96. **Maintenance cost expenditure for longer results.** The project also included a cost expenditure category specifically for maintenance and project sustainability. This includes the purchase of maintenance equipment (e.g. pressure washing vehicles) to maintain drainage pipes and ensure that they function properly. The maintenance cost includes routine maintenance (e.g. of potholes, vegetation control, cleaning and maintaining drainage services, signage and safety, and slopes) and is assumed to be 10% of the total construction cost based on the estimates provided by SEDOP. To improve the maintenance of the drainage network, 13 pressure-washing trucks were included in the procurement plan of the project. Furthermore, NDB and the government agreed to include trash cans every 100 m in the scope of Component 1 to prevent households from depositing trash on the streets which will then clog the drainage system after rainfall.

97. **Municipal budgets for streets maintenance.** One issue that concerned the evaluation team was the source of funding for streets/drainage maintenance in the long run. Some municipalities stated that they don't regularly collect property taxes, which hinders their budget for streets and drainage maintenance. This means that project results sustainability would need to be evaluated on a case-by-case situation to understand:

    (a) If municipalities are indeed allocating 10% of construction costs to fund maintenance; and

    (b) Are using these funds for project maintenance.

    Reviewing the Annual Budget Law (LOA) which describes the budget for the following working year for the project municipalities, there is limited information of funding allocated for maintenance. Using Rurópolis, one of the cities that the team visited as an example, the 2023 LOA[29] (which budgets for 2024) states that BRL 1.5 million would be spent on drainage maintenance and BRL 2.1 million for road maintenance in 2024 (see highlights in figure 5). This is an example of a good result, as the municipality has showcased the importance of allocating and maintaining project results. Though it is very reassuring to see this expense stated in the municipality's LOA, the evaluation team cannot confirm if this was spent and on which drainage systems and road maintenance.

29 Reference from https://ruropolis.pa.gov.br/wp-content/uploads/2024/01/LEI-469.pdf.

FIGURE 5.

Rurópolis 2023 annual budget law – highlights for roads and drainage maintenance for 2024

CÓDIGO	E S P E C I F I C A Ç Ã O	PROJETOS	ATIVIDADES	TOTAL
04	Administração	0,00	904.200,00	904.200,00
04 122	Administração Geral	0,00	904.200,00	904.200,00
04 122 0001	Gestao Administrativa	0,00	904.200,00	904.200,00
04 122 0001 2.109	Aquisição de Óleo Diesel para Recuperação de Vicinais Aquisição de Óleo Diesel para recuperação de vicinais		904.200,00	904.200,00
15	Urbanismo	7.953.500,00	19.027.624,00	26.981.124,00
15 122	Administração Geral	0,00	8.894.624,00	8.894.624,00
15 122 0007	Infra-estrutura Urbana e Rural	0,00	8.894.624,00	8.894.624,00
15 122 0007 2.055	Manutencao das Atividades da SEMINFRA Manter o funcionamento da SEMINFRA		6.798.300,00	6.798.300,00
15 122 0007 2.056	Manutencao e Obras em Vias e Logradouros Publicos Manter em boas condições de acesso as ruas e calçadas e de funcionamento dos logradouros		2.096.324,00	2.096.324,00
15 451	Infra Estrutura Urbana	5.930.800,00	4.521.000,00	10.451.800,00
15 451 0007	Infra-estrutura Urbana e Rural	5.930.800,00	4.521.000,00	10.451.800,00
15 451 0007 1.018	Urbanizar e Pavimentar Vias Publicas Pavimentar Vias e Calçadas	1.643.400,00		1.643.400,00
15 451 0007 1.019	Obras de Infraestrutura Urbana Prover recursos para as diversas obras de infraestrutura Urbana	297.400,00		297.400,00
15 451 0007 1.045	Revitalização da Praça Cívica Revitalização da Praça Cívica	990.000,00		990.000,00
15 451 0007 1.046	Recuperação de Vias Públicas Recuperação de Vias Públicas	2.000.000,00		2.000.000,00
15 451 0007 1.047	Recuperação e Instalação de Pontes e Pontilhões Recuperação e Instalação de Pontes e Pontilhões	1.000.000,00		1.000.000,00
15 451 0007 2.057	Implementação e Manut de Identificação d e Vias e Logradouros Prover de recursos para identificação de vias e logradouros		21.000,00	21.000,00
15 451 0007 2.110	Manutenção na Drenagem Urbana Manutenção na Drenagem Urbana		1.500.000,00	1.500.000,00
15 451 0007 2.111	Confecção de Bloquete Sextavado Confecção de Bloquete Sextavado		3.000.000,00	3.000.000,00
15 452	Serviços Urbanos	0,00	5.612.000,00	5.612.000,00
15 452 0008	Saneamento Básico	0,00	5.612.000,00	5.612.000,00
15 452 0008 2.058	Manutenção da Coleta de Lixo e Limpeza P ublica Manter a coleta de lixo e limpeza publica		5.612.000,00	5.612.000,00

- continua -

Source: Rurópolis Town Hall website – https://ruropolis.pa.gov.br/lei-no-469-2023-de-21-de-dezembro-de-2023.

98. **Actual status on the ground.** Some issues attracted the attention of the evaluation team. First, it needs to be guaranteed that the trash bins are in place, to prevent trash clogging up the drainage system. Second, in the municipalities visited, the team already noticed some maintenance needed in the asphalt and sidewalks. To prevent asphalt degradation, NDB could assist by developing a traffic study for pavement design and urban development plans regarding zoning and mobility. Third, some drainage inlets were filled up with trash and plants. Fourth, some sidewalks were destroyed by inhabitants to build ramps, and some were poorly maintained – with a build-up of rubbish and dirt, and plants invading them, meaning that the sidewalks were not usable by the public. Lastly, the capacity-building workshop for maintenance, including the manuals, are still to take place, so the evaluation may not assess this part of the activity.

99. **In summary**, the maintenance component was reassigned inside the project, the manual and dissemination activities are still not implemented, and some maintenance is already needed. However, as the project is still under implementation, the evaluation does not consider it methodologically robust to assign a performance rating to sustainability at this stage.

F. Overall project achievement

100. In this case, the "overall project achievement" is a composite measure composed of the three core evaluation criteria: relevance, effectiveness and efficiency. The rating for overall project achievement is not simply an arithmetic mean of the ratings given to the aforementioned individual criteria. Rather, it is derived from a comprehensive assessment of performance and represents IEO's holistic judgment of the project's successes and areas for improvement.

101. Project relevance and effectiveness were successful, considering the design of the process during the initial phases of the Bank's existence, and the completion, so far, of the key component of the project. Efficiency was Moderately Successful, considering that costs had overrun, and there were other challenges during the implementation, that could have been avoided. As presented in table 16, the **Overall Project Achievement** is considered **Successful (5)**. This is because, notwithstanding the challenges with efficiency which may be partly attributable to the fact that this was NDB's first sovereign operation in Brazil and the organisation had limited capacities in its initial years, the project overall has been successful in meeting its objectives and contributing to development in the municipalities.

TABLE 16.

Summary of evaluation ratings

Criterion	Rating
Relevance	Successful (5)
Effectiveness	Successful (5)
Efficiency	Moderately Successful (4)
Overall Project Achievement	**Successful (5)**

V. OTHER EVALUATION CRITERIA

A. NDB performance

102. Evaluating the performance of NDB encompasses multiple facets throughout the project cycle. These include the design of the project, the technical support offered, monitoring and supervision activities, self-evaluation processes, knowledge management, and additional aspects.

(i) Strategic performance

103. NDB, as a multilateral development bank aiming to support infrastructure and sustainable development projects in Emerging Markets and Developing Countries (EMDCs), issued a loan to support urban development (paving and drainage) infrastructure in Brazil, specifically in the Amazon rainforest. This initiative serves as a model for other MDBs and demonstrates the Bank's confidence in Brazil's sustainable development, particularly regarding its most vulnerable areas. The loan was not issued in local currency. NDB lacks a country-specific or sector strategy for Brazil, which hinders a comprehensive evaluation of the NDB portfolio in the country and linkages there among the Bank's projects. Despite the project's significance to both the Bank and the country, the evaluation suggests that it would be beneficial to develop such a planning instrument, as also highlighted by the Ministry of Finance.

104. **Financing for impact – co-financing.** According to NDB's General Strategy for 2022–2026, "NDB will also deepen its cooperation with development finance institutions (DFIs), … financing after a mid-term strategic review and taking on board any lessons learned". This was NDB's first co-financing operation, aligning with the Bank's strategy, paving the way for similar operations in Brazil and worldwide. The project was designed and implemented jointly with the Development Bank of Latin America and Caribbean, being the first sovereign guaranteed project of NDB in Brazil. The project and one with FONPLATA are among the three co-financed projects under execution of Brazil, among all development institutions. CAF also provide some trainings and capacity-building initiatives, such as the project manager workshop that showed a number of areas that can help improve the performance of development projects. Events like this can be jointly organised. In the same vein, there is great potential to go beyond simply co-financing projects together: for example, in sharing knowledge and information during the implementation of projects without significant costs for any of the parties involved, especially with both NDB and CAF having a physical presence in Brasilia.

105. **Transport infrastructure.** The project fully aligns and contributes to one of the Bank's key areas of operation, transport infrastructure, as referenced in the General Strategy, "within the transport sector, NDB will support [...] as roads, ports, and airports". The project brings connectivity, improving people's lives and developing local economies. Over 300,000 people in the middle of the Amazon Rainforest – usually vulnerable people that are not considered due to the distance and tough conditions to reach them – not only were benefitted in logistic terms, but also as regards their health, education and so many other factors than what "a simple road" may bring.

106. **Strengthened on-the-ground presence.** The existence of a centralised implementing unit (financed by CAF) showed to be an important tool to ensure the execution and continuity of the project, even with governmental changes (after elections) at state and municipal levels. This also helped advocacy issues, such as finding solutions for the rainy season, that brings non-minor construction challenges. ARO's support to the PMO, such as helping in translating documents, bridging information and data gaps between NDB headquarters and the PMO, and in presenting financial information to NDB headquarters was instrumental for the project implementation, as aimed for in the NDB General Strategy for 2022–2026.

107. **Provision of technical assistance and capacity-building.** Capacity-building for the PMO and relevant stakeholders could have been provided earlier in the project. Even though procurement, and environmental, social, and governance (ESG) were based on country systems, further work related to capacity-building and technical assistance could have been a plus for project implementation. The PDB stated that, "A set of capacity-building activities for the PMO will be designed to ensure smooth and effective project implementation", while according to the PAM "capacity-building was estimated based on the activities to be performed by the PMO at USD 600,000 to meet the requirements of the project". Table 4 above shows that USD 250,000 was originally allocated to capacity building, though amendment 3 of the loan agreement reduced that amount to USD 67,000 – a 73% reduction.

108. **Lack of IT systems and common repositories.** The reconciliation of accounts and disbursement requests were done in Excel spreadsheets. It was reported that one mistake in one cell of one Excel file took a long time to be solved and almost jeopardised the continuation of the operation and the relationship between the Bank and the local government – not just for the current operation but for future ones too. Also, as stated before, there were several difficulties for the PMO to elaborate some documents and provide some information in English, which could be remediated with an electronic disbursement system. Even though help from staff in the ARO was positive, NDB must balance the costs involved in using its limited staff to translate documents and review Excel sheets, against the use of other systems.

109. This project had different procurement and E&S specialists during the life cycle. Different teams inside the Bank related internal communication difficulties between departments and difficulties to access documents. Each department has its own SharePoint filing system that is not accessible for all areas inside the Bank. These kinds of issues could be solved with an integrated project management system and common repositories of documents.

(ii) Operational performance

110. **Project appraisal and monitoring.** It's important to acknowledge that the project was initiated at the onset of the Bank's operations when there were constraints in terms of staff and comprehensive bank-wide policies and manuals. The evaluation mission noted that during the appraisal phase, involvement was primarily from the operations team, lacking a fully-fledged team encompassing ESG, procurement, strategy, etc., for an in-depth on-site project appraisal. Monitoring missions were usually carried out by one consultant or one staff member, without the presence of a comprehensive NDB team. For projects in remote or difficult access areas, the project team should take into consideration the additional costs involved in time, transportation and personal security involved in appraising and monitoring these projects, in the same way for the construction costs.

111. NDB became engaged with the project after CAF and the State of Pará had already finished much of its feasibility study and environmental assessment. NDB partnered with CAF to deliver what would originally be a CAF operation. The partnership was a positive strategy implemented by NDB to inaugurate its operations in Brazil learning from an experienced strategic partner in the country, speeding up the approval and implementing processes. The absence of technical support and capacity-building efforts during the appraisal phase could restrict NDB's ability to offer extra value and bring international expertise to the project's design.

112. **Procurement and E&S.** NDB executed procurement with efficiency. Despite facing staff shortages, especially technical experts in procurement, the NDB team managed to carry out these processes. The PMO also benefited from the country system, which eased the need for extensive documentation, though a consultant needed to be hired, as explained above. The E&S team had limited participation during the whole project cycle, also the project didn't have an Environmental and Social Impact Management Plan in place. Project progress reports show difficulties in receiving E&S information and compliance, and a closer relationship and eventual technical cooperation could have smoothened out some of the challenges.

(iii) Additionality

113. The first questions the evaluation team received in the beginning of the field mission from the Ministry of Finance were, "what is NDB's additionality compared to other MDBs?" and, "how do these additionalities, such as the use of country systems, actually improve project implementation?". These questions forced the team to go beyond basic the recipe used to describe NDB's traditional additionalities. Although NDB has always referred to the use of country systems, lending in local currency (which does not take place in Brazil in sovereign guaranteed projects) and a few other sole additionalities, it has never quantified the real benefits of these features. For example, how many days/weeks/months does the project implementation benefit from the use of country systems? From this, the evaluation team kept in mind during its mission two items that need much improving in NDB's operations: improvements on NDB visibility and its additionality features.

114. Financially, NDB provided almost half of the project's funding, yet limited technical capacity-building, as previously described. The financial management consultant was keen in supporting the PMO to deliver results on time, though further capacity-building, especially in the beginning, could have been provided.

115. **Knowledge management and visibility.** Knowledge management and innovation are critical for NDB's development value proposition as an MDB. It is in the interest of the Bank to be seen not only as a co-financier, but also as a Bank that can support clients with technical assistance issues, knowledge exchange and non-financial products. Very limited knowledge management and visibility are present in the project. Until the time of the evaluation, no knowledge products were prepared and/or distributed – and the evaluation team believes that developing a document on lessons learned, or best practices for building in challenging contexts would have been beneficial in this regard. In addition, according to the loan agreement a stakeholders communication strategy should have been developed, but this was not available.

116. Maintenance manuals to support municipalities with drainage maintenance are in the process of conclusion, representing what will probably be the only knowledge product elaborated during project lifecycle. The PMO shared some videos related to the project, with no exposure of the Bank on them. The evaluation team concluded that the Bank was not very visible during project implementation. For example, during the evaluation mission the construction company's signs had the letters "NDB" displayed, but not the logo; although the PMO showed some pictures of board signs with the NDB logo on them. In general, NDB's visibility in project areas was minimal, and the Bank has not made efforts to document and share lessons and good practices from the operation within and beyond Brazil.

117. **Cooperation.** Despite the initial cooperation and even with the fact that the PMO was shared by both institutions and financed by CAF, no joint work was developed after the signature of the loan agreements. On the other hand, during the evaluation cycle, CAF was involved from day one, and joint meetings with CAF were held with the Ministry of Planning, Ministry of Finance and CAF's evaluation director and its team participated in most of the field mission.

118. **In summary**, the project was the first sovereign and co-financed operation in Brazil, where in the early stage of the project, NDB was still developing its in-house knowledge hub, and standardising practices and guidelines, which could have brought more support to the PMO. After the on-the-ground presence of ARO was established, operations took a new turn, with the Bank directly supporting the PMO in language, translation and operations issues. Internal communication, IT systems and the cooperation with the co-financing Bank need more consideration. Considering the phase of the project execution and that this was the first sovereign project in Brazil, and that the Bank is currently developing a "follow-up" operation with similar features in the state, the **NDB Performance** is considered **Successful (5)**.

Criterion	Rating
NDB Performance	**Successful (5)**

B. Borrower performance

119. The borrower, the State Government of Pará, and the project management office consistently demonstrated commitment to the project, effectively navigating challenges during its design and execution phases. Initially, the PMO encountered challenges in coordinating with NDB's headquarters and in meeting operational requirements; additional capacity-building at this stage would have been beneficial.[30] A notable fact of the PMO is that almost 60% of its staff in official positions are women, something not common in most infrastructure projects.

120. During project implementation, in general reports from the PMO were presented to ARO in a timely manner and complied with the Project Administration Manual's provisions. Some issues related to NDB's assessments of the PPRs refer to E&S management and capacity, including completion of actions pertaining to the compliance with the country system and Environmental and Social Framework (ESF) requirements.

121. Some information gaps regarding the renewal process of the environmental licenses and other E&S requirements were present in some of the progress reports. The project was found to be in partial compliance with NDB ESF and country system requirements, with the required actions for information gap findings listed by NDB for future action to be taken. Nonetheless, whenever an issue was identified in a progress report cycle, these issues were likely to be resolved by the next progress report period.

122. Currently, while the E&S Impact Management reports are only partially complied with, all other aspects of the NDB's compliance table are properly addressed. One way of improving this could be the implementation of technical assistance or capacity-building. The PMO could have requested such support, since several E&S reports during the project lifecycle were lagging compared to other aspects of the project.

30 As outlined in annex XIV, the evaluation team utilised several key questions to assess the borrower's performance, including whether the borrower provided the financial resources (co-financing) as stipulated in the Project Design Report and loan agreement, the type and level of human resources assigned by the PMO to the "project execution team," the adequacy of the financial management systems implemented by the borrower and sub-borrowers, and the frequency and quality of audits, among others. For further details on the PMO's structure and role, see annex XI.

123. In terms of financial management, while the PMO proved to be efficient in the speed of the execution of works, its capacity related to the financial control of the project and accountability to NDB was limited at first and, in some cases, disbursements were delayed due to language barriers and lack of familiarity with NDB's policies. One specific incident related to the last disbursement, where one Excel spreadsheet cell didn't reconcile. This almost led to contractual noncompliance, which was resolved after the support of ARO and an external consultant. As rule, ARO had to provide support to translate and review documents before they were submitted to NDB headquarters.

124. The existence of a centralised implementing unit (financed by CAF) proved to be an important tool to ensure the execution and continuity of the project, even with governmental changes after elections at state and municipal levels – something which does not often happen in Brazil. This also helped advocacy issues, such as finding solutions for construction during the rainy season, that bring non-minor challenges. When these centralised units are established, it is important to guarantee sufficient budget and personnel, and NDB should measure the percentage of budget allocated depending on the context of the operations.

125. During the implementation, as mentioned previously, there was the COVID–19 pandemic, currency depreciation and a rise in oil prices. The borrower guaranteed financial resources to cover the cost overruns, guaranteeing the complete implementation of the asphalt present in the project.

126. The Brazilian Federal Government had a limited involvement in the project. As mentioned in paragraph 75, in projects with NDB, the Federal government receives the project proposals (*carta consulta*) from the subnational entity wishing to receive a loan and analyses its viability using a well-established and rigid grading system, through the COFIEX of the Ministry of Planning. After the appraisal and approval, the Federal government negotiates and signs the contract as a sovereign guarantor. During project execution, it will conduct formal desk reviews of the project implementation, renegotiating the contract in special cases. In other words, the Federal Government has a relatively passive role related to the project from its identification to its closing. Some other MDBs have a country strategy implemented together with active negotiations with the Ministry of Planning and/or Ministry of Finance, leading to a more active involvement of the Federal Government with the specific MDB, for instance through regular dialogues during the project cycle.

127. **In summary.** Some E&S aspects were not presented in a timely manner and some difficulties on financial reports and account reconciliations happened during the implementation. On the other hand, the overall result and timeliness of the project's deliverables were strong evidence of a well-implemented intervention. The project has been generating positive economic, environmental, and social benefits to the State of Pará and the cost overruns were fully covered by the borrower. Considering the complex context in which the intervention was implemented and that this was the first sovereign project by NDB in Brazil, the **Borrowers' Performance** is considered **Successful (5)**.

Criterion	Rating
Borrower Performance	**Successful (5)**

VI. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

128. **Overall, the project has successfully achieved its primary objective of enhancing urban infrastructure in municipalities within the State of Pará.** This has enabled the State to advance in its sustainable development plans and initiatives, even before the total completion of the project. Valuable insights were gained across all criteria, showcasing a strong alignment with local priorities and NDB's overarching strategies, including both the General Strategy for 2017–2021 and for 2022–2026. This alignment extends to the National and Pará Pluriannual Plan. Additionally, the project complements state-level efforts to support smaller, more vulnerable municipalities with populations ranging from 10,000–50,000 residents, often situated in areas less targeted by traditional development initiatives, particularly those from MDBs. Moreover, the project's alignment with six SDGs further underscores its holistic impact and contribution to broader sustainable development objectives.

129. **Support from the Americas Regional Office.** A valuable takeaway from the project experience was the crucial role played by ARO in ensuring consistent project delivery. In addition, the presence of a centralised implementing unit – the project management office – supported by CAF funding, proved to be a critical mechanism for maintaining project execution and continuity, even amidst governmental transitions at the state and municipal levels. This support was particularly beneficial for addressing advocacy issues, such as overcoming construction challenges during the rainy season. The ARO's assistance to the PMO, including tasks like document translation, bridging information gaps between NDB headquarters and the PMO, and presenting financial information to NDB headquarters, played a pivotal role in facilitating smooth project implementation.

130. **Co-financing with other MDBs.** This project marked NDB's inaugural collaboration with another MDB through co-financing, underscoring the value of pooling resources to extend project benefits to a wider range of beneficiaries and enhance NDB's outreach. The project, jointly designed and implemented with CAF, represents NDB's first sovereign-guaranteed venture in Brazil and its first co-financed operation in the country. Notably, it is one of two ongoing NDB co-financed projects within Brazil (the other being with FONPLATA) and among only three in the country. CAF played an active role during the appraisal of the project, and during the evaluation process, participating in meetings and providing support and information alongside their evaluation and the Brazilian office's teams. The PMO in Pará actively participated in field visits, directly supporting missions, and coordinating logistical aspects of this real-time evaluation.

131. **Challenges with project enablers – local currency with contingency.** Though NDB is becoming well recognised for its unique benefits, such as lending in local currency and the usage of country systems, some of these benefits are not being used in Brazil. One issue raised by the Ministry of Finance is lending in local currency. First, lending in local currency would allow reduced currency risk, shielding the borrower from fluctuations in exchange rates. This stability can enhance financial predictability and reduce the risk of unexpected repayment challenges caused by currency devaluations. Also, this would bring lower transaction costs associated with currency conversion, hedging, and managing foreign exchange risks. This can make borrowing more affordable for local entities and governments and increase NDB's advocacy in Brazil. Overall, lending in local currency can contribute to more sustainable and resilient development outcomes by mitigating currency risks and external inflation, due to international crises, climate change and extreme events like COVID–19. It also fosters economic stability and local investment, as well as bringing in further co-financing from other stakeholders.

132. **Improvements in project design.** It has been mentioned in other evaluations that NDB still needs to tackle some limitations related to project design. The evaluation team found that when project implementation started, there was no local support or ARO, which could have been a major factor in understanding the local context and needs. The importance of conducting a thorough needs assessment to understand the specific challenges and opportunities in the target area is a must for a strong project design that includes a complete and explicit theory of change (see annex II), and the indicators that could have been used during implementation (see annex III). It is essential to engage with local stakeholders, communities and experts to gather insights and prioritise areas for intervention, something that the evaluation team understood did not take place at the design and appraisal stage; and also with studies on, for instance, urban planning, mobility plans and revenue support assistance. Another challenge to the project design was the holistic approach in terms of possible indicators the project could have measured. The formal indicators at the DMF did not consider thoroughly social (such as gender and vulnerable communities), economic, and environmental factors. Similar calibration should be done related to the costs and time of appraisal, monitoring, supervision and construction.

133. **Effective capacity-building for project stakeholders.** It was pointed out to the evaluation team that further capacity-building could have been provided to improve project performance during the complete project life cycle. The first concerned a needs assessment. Then, tailored training programmes need to be delivered to the PMO related to procurement, ESG, finance, budget and accounting (FBA), and other divisions and sectors in the Bank. It is noteworthy that the Bank is still at a phase of alignments and adjustments related to its operations. When the project was conceptualised in 2017–2018, many of the Bank's procedures, policies and manuals were still being adjusted. NDB still doesn't use grants as a capacity-building tool, unlike other MDBs, though after various comments made by stakeholders during the evaluation mission, it should start considering this option as a possibility for future operations.

134. **Challenges in project implementation – systems, language, and supervision.** Project management systems are crucial for measuring and running operations related to the progress, effectiveness, and impact of a project. They help in tracking performance against planned objectives, identifying areas for improvement, making informed decisions, and ensuring accountability and transparency. After consulting stakeholders, it was evident that the project did not have an automated project management system in place to facilitate PMO and ARO communications, track project indicators, as well as support financial operations and transactions. Operations' controls and communications are still done in manual spreadsheets or on Word files. This is not related to "country systems", when referring to procurement or financial databases. What is being referred to here is to project management and communication platforms, where the PMO could easily insert the requested data, and ARO (or headquarters) could, in real time, understand what is going on, and refer to the project's indicators and context without the need to consult someone else on the other side of the world. Project management systems need to be well thought-out and support the whole project cycle. As mentioned, language is also a basic challenge that has been presented in the project. Professionals at the in-country implementation level have limited understanding of other languages other than the national official language (in this case, Portuguese). This hindered a lot of the initial work before the ARO was established. A system could automatically solve this as other peers have teams in every area to attend to the borrowers in their local languages.

135. **Limited visibility and knowledge management.** While recognising the limited staff and resources in the ARO, especially in the initial phases of implementation, insufficient attention was devoted to capturing, documenting and dissemination the lessons and good practices from the operation, and communicating the results of the project to a wider audience. This is a missed opportunity for strengthening NDB visibility, especially in light of the pioneering partnership with CAF and the general success of the project.

B. Recommendations

136. **Recommendation 1: Implement local currency loans.** The use of local currency reduces exposure to foreign exchange volatility, external inflation and economic shocks, unforeseeable events like COVID–19 and extreme climatic events, which can affect project costs and financial stability; it also supports the local economy and financial markets by increasing demand for the local currency; and lowers transaction costs for projects. Local currency is already being used by some MDB's in Brazil. NDB should implement an action plan for implementing local currency loans in Brazil.

137. **Recommendation 2: Enhance project design and its components.** Good project delivery depends on a solid project design. This includes having a thorough understanding of the context and solid theory of change to establish the foundation of a strong results framework, making sure that a holistic approach is considered. Improving the design of a project involves a few elements to enhance effectiveness, efficiency and impact. First, define clear, achievable, and realistic goals/targets. This clarity helps guide the project design, execution, monitoring and evaluation, and tailor the costs and timing to the individual characteristics of each project. This is especially needed in accessing sustainable instruments. In addition, stronger contingency planning needs to be inserted in NDB's projects in Brazil. Integrating contingency measures into project planning will help mitigate risks that could derail project objectives and costs.

138. **Recommendation 3: Improve capacity-building initiatives.** NDB needs to build on and develop training programmes that are tailored to the identified needs of the project, the implementing agency, and relevant stakeholders. These could include workshops, seminars, on-the-job training, and mentoring, preferably using the local language, as most professionals working at the PMO, and relevant stakeholders might have difficulties with English training. In similar projects, a capacity-building initiative for municipalities on tax reform would be highly beneficial to ensure they have enough resources to sustain project activities. Also, assistance for developing traffic studies for pavement design and urban development plans (e.g. on zoning and mobility) could extend the life of the pavements and reduce operational and maintenance costs.

139. **Recommendation 4: Knowledge management and communication plans.** NDB has a privileged position to scale up and share knowledge and good practices. To better identify, document, and share lessons and good practices, it is recommended according to NDB policies and documents, that each project funded by NDB in Brazil and beyond should have an in-built knowledge management and communication plan in design, with key activities to be conducted throughout implementation such as the preparation of publications, brochures, use of social media and the internet, organisation of workshops and other events.

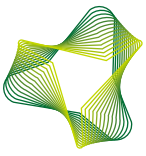
140. **Recommendation 5: Highlight project implementation support enablers – project management IT systems.** The use of efficient project management IT systems instead of individual spreadsheets and text files and e-mails would highly simplify procedures related to operations, procurement, ESG, FBA, M&E, communications, and most of the aspects related to project implementation. Good project management systems facilitate effective coordination and communication among diverse teams and areas inside and outside the bank. They also overcome language barriers, as a field in the system in Brazil could be in Portuguese, while in China, the same field could be in Chinese, at headquarters in English, and so on, facilitating communications and reconciliation of information.

141. **Recommendation 6: Keep expanding co-financing and partnerships.** NDB is a leader in co-financing in Brazil, as with three parallel financings under execution in Brazil two are from NDB, and three more are under preparation. In this project, a parallel co-financing model was used, which guarantees independent executions and, so far, successful implementation. In this way NDB should keep expanding parallel co-financing and implement others, as bridge loans, A/B, syndicated, blended finance and so on; expanding NDB's financing volume, outreach, and impact, with some guidelines or action plan to implement the Bank's co-financing strategy.

VII. ANNEXES

The annexes to the report (listed below) are available on the Independent Evaluation Office website at: https://www.ndb.int/wp-content/uploads/2024/11/Annexes-EN-Brazil-Para-State-Project.pdf

- Annex I. Peer Review: Development Bank of Latin America and the Caribbean (CAF)
- Annex II. Theory of change (ToC) and vertical logic
- Annex III. Proposal of revised project Design and Monitoring Framework with updated indicators – holistic approach
- Annex IV. Project Design and Monitoring Framework
- Annex V. Contrafactual examination of proposed indicators
- Annex VI. Suggested outcomes for urban infrastructure projects
- Annex VII. Project area map
- Annex VIII. Pluviometry maps of Pará
- Annex IX. Project data
- Annex X. Project disbursements
- Annex XI. The role and structure of the Project Management Office (PMO)
- Annex XII. Risks and mitigation measures
- Annex XIII. Evaluation criteria and evaluation aspects explained
- Annex XIV. Evaluation framework
- Annex XV. Evaluation mission agenda
- Annex XVI. List of key people met during the evaluation process
- Annex XVII. List of documents reviewed
- Annex XVIII. Economic information related to the project implementation phase
- Annex XIX. Photos from the evaluation mission



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