



Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 04-Nov-2022 | Report No: PIDA34458



BASIC INFORMATION

A. Basic Project Data

Country Brazil	Project ID P178993	Project Name Mato Grosso Resilient, Inclusive, and Sustainable Learning Project	Parent Project ID (if any)
Region LATIN AMERICA AND CARIBBEAN	Estimated Appraisal Date 17-Nov-2022	Estimated Board Date 14-Feb-2023	Practice Area (Lead) Education
Financing Instrument Investment Project Financing	Borrower(s) STATE OF MATO GROSSO	Implementing Agency SECRETARIAT OF EDUCATION - MATO GROSSO	

Proposed Development Objective(s)

The objective of the Project is to support the State of Mato Grosso to improve teaching practices, teachers’ digital readiness, and schools’ learning environments.

Components

- Component 1: Strengthen Pedagogical Interventions and Management for Learning Recovery
- Component 2: Transform Digital Infrastructure
- Component 3: Create Green, Resilient, Inclusive, and Safer Schools
- Component 4: Project Management, Monitoring, and Evaluation

PROJECT FINANCING DATA (US\$, Millions)

SUMMARY

Total Project Cost	100.00
Total Financing	100.00
of which IBRD/IDA	100.00
Financing Gap	0.00

DETAILS

World Bank Group Financing



International Bank for Reconstruction and Development (IBRD)	100.00
Environmental and Social Risk Classification	
Moderate	
Decision	
The review did authorize the team to appraise and negotiate	

B. Introduction and Context

Country Context

1. **The COVID-19 pandemic shocked the Brazilian economy while it was still recovering from the 2015-16 recession.** Brazil experienced a period of economic and social progress between 2003 and 2014, with the country’s economy growing at an annual average of 4 percent over that period and significant reductions in poverty and income inequality. This positive trend was interrupted by a recession in 2015-16, followed by a mild recovery before the emergence of COVID-19 in the country. Economic activity contracted by 3.9 percent in 2020, less than in most advanced and emerging economies and the lowest contraction among the largest Latin American economies and despite the large number of COVID-19 cases and deaths, in part due to limited mobility restrictions and the Government’s strong policy response. Propelled by a strong recovery of 4.7 percent in the services sector, economic growth rebounded in 2021 with a 4.6 percent growth rate. But in a context of high inflation, monetary policy tightening, uncertainties related to the presidential elections in October 2022, and a challenging external environment, growth is expected to slow to 1.5 percent in 2022, and only mildly accelerate until 2024 on the back of easing inflation and reduced uncertainty post-elections.

2. **In response, the Brazilian Government put forward a comprehensive vaccination program and a large fiscal package focused on social assistance to protect the most vulnerable.** Brazil is one of the countries most affected by the COVID-19 pandemic in the world. As of October 6, 2022, it registered more than 686,000 COVID-19-related deaths (the second highest in the world, representing 11 percent of total world deaths), and recorded more than 34.7 million infections (third in the world, 6 percent of the world total). During 2020 and until the first half of 2021, the country’s health system was under severe stress. Since then, the Government has rolled out an extensive vaccination program. As of end of September 2022, 80.7 percent of the population was fully vaccinated against COVID-19 (two doses), and 55.7 percent of people had received at least one booster dose. The Government also responded to the economic crisis with an unprecedented fiscal stimulus package of BRL\$815.5 billion (US\$157 million) (11.4 percent of Gross Domestic Product, GDP) in 2020 and BRL\$137.2 billion (1.6 percent of GDP) in 2021. The social emergency transfers program, *Auxilio Emergencial*, reached 66 million individuals and the *Auxilio Brasil* Cash Transfer (CCT) program (which replaced the long standing *Bolsa Familia* program) was expanded to 18 million individuals. This assistance mitigated the pandemic’s impact on poverty, even lowering it to



12.8 percent in 2020 (based on US\$5.50, 2011 Purchasing Power Parity). Poverty increased again in 2021 as emergency transfers to support the poorest were reduced and it is expected to stabilize around 15.6 percent in 2022 and 2023 due to slow adjustments in the labor market after job losses during the pandemic.

3. **The pandemic had a strong negative impact on human capital accumulation.** Brazil is among the Latin American countries that suffered the longest spell of public school closures, which is estimated to have increased learning poverty (the percentage of children unable to read and understand a simple text at age 10) from 48 to 70 percent, from 2019 to 2021, disproportionately affecting the poor. As a result, COVID-19 is estimated to have reversed a decade-long trend of steady progress in the Human Capital Index (HCI), which in 2019 reached 0.60.¹ Recent World Bank projections indicate that, in a realistic scenario, the HCI for Brazil could have fallen by 9.6 percent between 2019 and 2021 to 0.54.²

4. **Within Brazil, Mato Grosso is a large and diverse state, rich in natural habitats.** The State of Mato Grosso (MT) is the third largest state of Brazil with an area of 903,357 km², and one of the least densely populated (3.9 inhabitants/km²), holding only 1.6 percent of the Brazilian population (3.5 million people). The state has a diverse population. According to the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística, IBGE*), MT has the fourth-largest number of indigenous peoples' communities, located in 59 municipalities. The state also ranked 19 out of 27 on the number of quilombos communities.³ MT presents a unique environment with a variety of biomes. The Amazon biome covers 53 percent of the State, the *Cerrado* (tropical savanna) 40 percent, and the Pantanal (tropical wetland) 7 percent. The State is part of the Legal Amazon region, but this extensive environmental capital is threatened by growing deforestation, large forest fires, and other phenomena related to climate change – such as more frequent and intense droughts. Expansion in agriculture has resulted in large areas of the Amazonia deforested, challenging sustainable progress in MT. Moreover, an increasing number and frequency of wildfires have affected the state, creating environmental and health risks for the population.

5. **MT has shown good economic performance, but poverty remains high and the state has been disproportionately affected by the COVID-19 pandemic.** MT is the fourth richest state in Brazil and one of the largest producers of soy worldwide. Between 2002 and 2019, MT experienced the highest GDP growth in the country, at 5 percent average annual growth compared to a 2.3 percent national average. More than half of its economic activity is associated with agriculture, and the state accounted for 28 percent of Brazil's grain production in 2020. Despite good economic performance, poverty in MT is still high and increased during the pandemic. Data from the Unified Registry for Social Programs (*Cadastro Unico*) indicate that around 12 percent of the population were living in extreme poverty, under less than BRL\$151 (US\$30) per month in 2020, an increase of 9.9 percent from 2018. In October 2020, around 30 percent of the population was earning less than half of the minimum wage (BRL\$110 per month or US\$3.70 a day) and was eligible for support from the *Auxilio Emergencial* program. MT has reported 14,910 COVID-19 deaths since the beginning of the pandemic (data from August 16, 2022) and 2.2 percent of the country's deaths (although MT accounts for just 1.6 percent of the country's population). As of August 11, 2022,

¹ The HCI is an index that captures the expected productivity of a child born today as a future worker. It ranges from 0 to 1 (with "1" signifying that a child born today can expect to achieve full health and full education potential) and has three main components: (i) quality and quantity of schooling (education), (ii) child survival rates (child survival), and (iii) adult mortality rates and stunting (adult health).

² World Bank (2022). Brazil Human Capital Review. Washington, DC.

³ A quilombo is a settlement founded by Afro-descendant people in Brazil and its construction process is directly related to the slavery regime (1550-1888) established in the country during colonization. *Quilombola*, or residents of quilombos, are descendants of enslaved Africans, known as maroons, who established their own maroon communities after fleeing slavery as a form of resistance.



72.7 percent of the population had received two doses of the COVID-19 vaccine, and 36.3 percent at least one booster dose, figures lower than the national average.

6. **Human capital is a key challenge for sustainable development in MT and the Government has shown a strong commitment to addressing it.** The HCI for MT was 0.589 in 2019, below the national average and ranking 14 out of 27 states in Brazil. Despite the economic growth record, the HCI trajectory over the last decade in MT has been among the five weakest in the country. These results are driven by poor and stagnant educational outcomes, despite considerable fiscal investments in the sector by the state. Education losses are associated with sixty percent of the estimated HCI decline due to the COVID-19 pandemic. With high investment and weak results, MT needs to improve the efficiency of public education expenses to achieve better outcomes without compromising its overall fiscal reform.⁴ Education has been a priority of the state government and there is strong political will to conduct reforms to address the sector's structural challenges and reverse COVID-19 learning losses.

Sectoral and Institutional Context

7. **Despite considerable investments in education over the past years, learning outcomes were already weak in MT before the pandemic.**⁵ In 2021, investment per student in MT was on average BRL\$4,994.34 (US\$962) per year, greater than that of the richest state in Brazil, Sao Paulo, which spent BRL\$4,138.64. Despite this high investment, according to the 2019 National System for Evaluation of Basic Education (*Sistema de Avaliação da Educação Básica*, SAEB), learning outcomes in Portuguese and mathematics for both primary and lower secondary education in MT were the lowest in the Central-West region and below the national average (including Sao Paulo). While several factors contribute to inefficiencies in the sector, poor coordination between municipal and state schools, suboptimal distribution and size of schools throughout the vast state area, and the need to strengthen the teachers' pedagogical skills and materials have been identified by the government as important bottlenecks behind education spending efficiency. The results of the state network in the 2019 Index of Basic Education Development (*Índice de Desenvolvimento da Educação Básica*, IDEB) were stagnating, with 43 percent of schools neither reaching the target nor improving IDEB scores.⁶⁷ Furthermore, there are several learning inequalities within the state. SAEB results in MT show that the state network has lower performance than the municipal network on average, and that the urban-rural achievement gap is significant. Learning levels are particularly weak in upper grades, with many students at level zero on the SAEB proficiency scale in Portuguese and mathematics in 9th grade, especially in rural areas.⁸

⁴ As part of the broader *Progestão Program*, which is assisting Brazilian states to implement reforms that will improve efficiency in public expenditure, the state of MT requested World Bank support to consolidate recent fiscal reforms and improve efficiency in whole-of-government public sector management systems and service delivery (*Progestão Mato Grosso: Public Sector Management Efficiency*, P178339).

⁵ A summary of the MT education system is available in the Annex 2.

⁶ The IDEB ranges from 0 to 10 and considers promotion rates and learning outcomes in Portuguese and mathematics from the National Evaluation System of Basic Education (*Sistema Nacional de Avaliação da Educação Básica*, SAEB). Education networks (states and municipalities) and schools have targets to achieve; by 2022, Brazil should achieve a 6 on the IDEB scale, comparable to the education quality of developed countries.

⁷ As described in Annex 2, the education system in MT (as in all states of Brazil) includes schools administered by the state government, schools administered by municipalities, and schools administered by private parties. State network refers to the group of schools under the state administration, while the municipal networks include those schools run by the municipalities.

⁸ The definition of learning levels comes from SAEB and are found here:

https://download.inep.gov.br/publicacoes/institucionais/avaliacoes_e_exames_da_educacao_basica/escalas_de_proficiencia_



8. **Repetition and dropout rates in MT in upper grades are among the highest in the country.** The state network adopts an automatic promotion policy through primary education. Therefore, repetition (2.7 percent) is low compared to the national average (3.3 percent) and the Central-West region (4.6 percent). For lower secondary education, repetition rates for the MT state network (7.0 percent) are still lower than the national average (8.3 percent). However, repetition spikes as students move to upper secondary. Before the pandemic (2019), in the first year of upper secondary education (10th grade), the MT state network had the highest repetition rate among Brazilian states, at 25.3 percent compared to the national rate of 14.5 percent. The state network also had the second-highest dropout rate in the first year of upper secondary: 13.5 percent compared to the national rate of 7.0 percent.

9. **Schools in MT were closed for long periods during the pandemic, with unequal and low student engagement in remote learning.** Schools were closed for 260 days in MT,⁹ with the state network and most of the municipalities returning to face-to-face schooling only in mid-August 2021. States and municipalities provided a wide range of alternatives for remote learning via radio, television, printed materials or online content, text messages, phone calls, and offline e-learning, especially in rural and under-resourced communities. In addition to cross-state differences in access to remote learning opportunities, within-state and between sector differences are also significant.¹⁰ In MT, 70 percent of state schools and 24 percent of municipal schools were ill-equipped and digitally unprepared to offer remote learning during the pandemic. Moreover, 45 percent of students in the public school network do not have internet access at home.¹¹ Students' engagement in the school routine from home was thus a challenge. According to the *Pesquisa Nacional por Amostra de Domicílios* (PNAD) 2020, only 36 percent of upper secondary students engaged in remote learning during the pandemic; the remote learning modality has also been related to increased mental health challenges for students.

10. **The pandemic therefore increased dropout levels in MT and caused significant learning losses, aggravating its learning crisis.**¹² The summative assessment conducted by the Ministry of Education (*Ministério da Educação*, MEC) in 2021 shows that learning levels in MT reverted to pre-SAEB 2015 performance levels. For example, the performance of fifth graders in Portuguese and mathematics dropped to the equivalent of that from six years and eight years ago, respectively. For 12th grade students, the setback was of at least 17 years. In the coming months and years, MT needs to adopt urgent and decisive strategies to recover and accelerate learning. Overall, school closures and low engagement in remote learning resulted in learning losses or substantial learning lags and an increased risk of dropouts due to lack of student motivation. The estimates for the state of São Paulo, for example, show that the

do_saeb.pdf. As indicated by the SAEB scaling, students in Level zero require special support as they do not show the minimum content knowledge in the subject expected for the grade.

⁹ This is lower than the average for Brazil (285 days), but higher than other states such as Espírito Santo (229 days) and Amazonas (245 days). The statistics refer to the average number of days public schools were closed for primary, lower, and upper secondary education. Source: INEP questionnaire about school response during COVID-19; administered between February and May 2021 (<https://www.gov.br/inep/pt-br/areas-de-atuacao/pesquisas-estatisticas-e-indicadores/censo-escolar/pesquisas-suplementares/pesquisa-covid-19>)

¹⁰ A survey conducted by the Ministry of Education (*Ministério da Educação*, MEC) in 2020 reported that the strategy of delivering printed learning materials to students was used by schools in almost all states and municipalities of Brazil. However, the use of more complex strategies was more prevalent among state schools than municipalities. For instance, synchronous learning with direct teacher-student interaction was a resource for 63 percent of the state schools and only 27 percent of the municipal schools. The survey can be accessed here: <https://painelcovid-seb.mec.gov.br/questionario-censo-escolar-2020/q-06.html>.

¹¹ Síntese de Indicadores Sociais – Uma Análise das condições de vida da população Brasileira 2021 .

¹² Learning losses is the learning that didn't take place during school closures as well as the forgetting of previously acquired learning and lost potential future learning.



risk of school dropout has increased by 365 percent in the wake of the pandemic.¹³ Initial data for MT shows that the dropout rate in the first year of public upper secondary school, which was already at alarming levels pre-pandemic, increased by five times in 2021 compared to 2020.¹⁴

11. **Dropout, performance, and attendance also vary significantly by gender.** In 2021, the dropout rate in the first year of upper secondary school was larger for boys than girls: while 4.4 percent of girls dropped out school, this rate for boys was 5.4 percent. Before the pandemic, the gender gap was more significant: in 2019, the dropout rate was 10.9 percent for girls and 15.8 percent for boys. Thus, the gender gap in dropout rates was reduced from 5 p.p. to 1 p.p. since 2019. This result indicates that either the policy of automatic promotion benefits more boys than girls or that, if automatic promotion benefits both genders equally, girls dropped out more than boys during COVID-19. However, the reasons for dropping out of school differ between genders. According to a 2020 report from UNICEF for Brazil, boys between 11 and 14 years old never answered "household chores" or "care for a family member" as reasons for not attending school.¹⁵ Among girls, 22.6 percent chose one of these options.¹⁶ Girls also outperform boys in Portuguese, but they show lower learning outcomes in mathematics. In upper secondary public schools, 21.7 percent of girls have an insufficient score in Portuguese, while this number is 31.5 percent for boys. In mathematics, 45.5 percent of girls and 39.1 percent of boys in upper secondary in MT have an insufficient score.¹⁷ Moreover, girls have a higher attendance rate than boys, and the Gender Parity Index (GPI)-the ratio of girls to boys enrolled in secondary school--was 1.05 in 2019.¹⁸

12. **Violence in the school environment among adolescents is another significant challenge in MT for boys and girls, with prevalence differing across genders.** While 44 percent of girls aged 13 to 17 in MT felt humiliated by peer teasing, only 34 percent of boys did. Physical aggression is more prevalent among boys: 16 percent of male students have experienced physical assault from schoolmates, whereas 10 percent of girls experienced the same. Gender-based violence is prevalent and affects girls more severely: 20.4 percent of girls aged 13 to 17 in MT were victims of attempted non-consensual sexual contact, unwanted touching, or sexual harassment, while this rate for boys was 7.2 percent.¹⁹ While there is no updated data yet, reports gathered during school visits by the World Bank team during the preparation mission indicate that violence in schools increased after the pandemic and has been reflected in the schools' environments.

13. **With multiple fronts ahead, the efforts of the MT government to recover from the impacts of the pandemic on the education sector and accelerate education progress are focused on three key and interrelated challenges:** (i) deficiencies in teaching practices and school management strategies; (ii) gaps in schools' digital readiness; and (iii) lack of safe, inclusive, green, and climate resilient learning environments. In addressing these challenges, the MT government aims to both recover learning losses incurred during the COVID-19 pandemic and improve on the state's pre-pandemic learning trajectory.

¹³ Lichand, G., Dória, C. A., Neto, O. L., & Cossi, J., 2021. The Impacts of Remote Learning in Secondary Education: Evidence from Brazil during the Pandemic.

¹⁴ Across Brazil, the dropout rates for 2020 were meager compared to previous years. The schools' automatic promotion, implemented during 2020, can explain this phenomenon. In 2021, the rates increased sharply: in MT, state upper secondary school dropout rates have risen from 0.8 to 4.9.

¹⁵ The sample size was 30,098 boys and 29,662 girls for the study. UNICEF, 2020. Out-of-School Children in Brazil. Access: https://www.unicef.org/brazil/media/14881/file/out-of-school-children-in-brazil_a-warning-about-the-impacts-of-the-covid-19-pandemic-on-education.pdf.

¹⁶ Girls are also more susceptible to child marriage and teen pregnancy, which are additional factors that increase dropouts and the risk of not returning to school.

¹⁷ SAEB, 2017.

¹⁸ World Development Indicators, 2019.

¹⁹ PeNSE, 2019.



Ensuring the quality of teaching and improving school management need to be at the center of any effort to address learning losses and establish learning acceleration strategies, but other elements can complement and boost the impact of good teaching practices, especially at the most vulnerable schools. The pandemic has shown that technology can be an invaluable resource for teachers, schools, and education systems as a whole. It has also demonstrated that most schools and teachers around the world, in Brazil, and in MT in particular, lack the equipment and skills to make good use of technology in their efforts to accelerate learning. Moreover, a safe, climate resilient, and adequate school environment can contribute to the quality and continuity of the teaching-learning process, and the sustainability of its impact. The status of each of these elements in MT is summarized below.

Deficiencies in teaching practices and school management strategies

14. **The Secretariat of Education of MT (*Secretaria de Estado de Educação, SEDUC*) designed a Learning Recovery Plan in 2020, which focuses on individualized remedial learning activities in schools' Learning Labs to mitigate the impacts of the pandemic on student learning, but its implementation has been unequal.** Established in 2017, the Learning Labs offer after school and personalized assistance to students with learning gaps in literacy, Portuguese, and mathematics. Currently, the Learning Labs operate in 450 schools of the state network, with 1,400 teachers providing support to (i) 9,983 students in primary education, (ii) 23,777 in lower secondary education, and (iii) 7,338 in upper secondary education. There is, however, significant variation within schools in terms of the Learning Labs' operation and quality. In particular, many Learning Labs teachers lack specialized training in remedial education and accelerate learning techniques, many schools have inadequate learning environments and technology (as further described below), and pedagogical materials and assessments used are not standardized. Providing adequate teacher training and materials allowing schools to introduce personalized tutoring strategies would help foster best practices in teaching and support the implementation of the Learning Recovery Plan.

15. **In 2021, SEDUC made a significant investment in pedagogical materials for students and teachers and learning assessment system.** After the reopening of schools, MT started the implementation of a priority program based on a five-year social-impact bond contract with *Fundação Getúlio Vargas* (FGV), which includes (i) the development and distribution of structured learning materials for each learner in grades 3 to 12, aligned with the National Common Core Curriculum (*Base Nacional Comum Curricular*) for all subjects; (ii) the development of structured teacher guides, aligned with student learning materials, to support teachers in delivering their classes; and (iii) a 120-hour teacher training plan during each school year. The program also introduces a bimonthly formative assessment for all students in the MT state network and an end-year summative assessment to measure learning improvement. Preliminary evidence from the first semester of the program's implementation identified challenges related to teacher engagement and to the alignment of the learning material content to students' proficiency levels. The findings also outline the need to include further support and training to teachers and complementary actions to improve school management and school learning conditions. The activities supported by the project are complementary to this main program of the MT government.

16. **Teachers in MT lack the training in teaching practices and coaching needed to tackle learning recovery.** The state network employs a large percentage of teachers with no pedagogical certification (46 percent in secondary education) and with short-term contracts (57 percent in primary education and 66 percent in lower secondary education). These teachers usually have less experience than those with longer-term contracts, receive no formal training, and generate a high level of turnover at the school level.



In some municipalities, such as *São José do Xingu* and *São José do Povo*, all teachers are under short-term contracts. Consequently, many teachers in MT lacked effective pedagogical practices even before the pandemic. Given that the pandemic had uneven impacts on student outcomes, it is even more critical that teachers be able to effectively assess students' learning losses and adjust their instruction techniques to the appropriate learning level. They must also be prepared to support students' socioemotional needs. While the state has an ongoing teacher professional development program, it usually consists of on one-off, mostly theoretical training sessions that are not based on the teachers' specific needs and that lack follow-up actions to support the application of changes in teaching practices in the classroom. It is therefore necessary to design training programs that are more practically oriented and provide skills allowing teachers to identify individual student learning levels to ensure that they are qualified to attend to students' specific needs and to help them recover from their learning losses.

17. **A learning recovery and acceleration strategy requires improving schools' management strategies and promoting active collaboration and alignment of the state with MT municipalities.** Under the Learning Recovery Plan, the state is reorganizing the SEDUC regional level of governance to enhance the implementation of learning recovery interventions in state schools and collaboration with municipalities, mainly focusing on primary education. SEDUC identified during the pandemic the lack of capacity to track students lagging behind and at risk of dropout, so they plan to get better data about the students' performance and to create a system to identify the key risks related to dropout, among other interventions. Newly established Regional Departments will support the supervision of interventions to improve teaching practices, digital readiness, learning environments, and coordination with municipal schools. To reverse the effects of COVID-19 and accelerate learning, MT will also need to ensure active cooperation with municipalities and provide more efficient and adequate funding for municipal schools. Evidence from the Ceará state shows that incentive mechanisms can lead to rapid improvements in the quality of service delivery by municipal schools, especially when combined with comprehensive and supportive technical assistance.²⁰ The SEDUC in MT is making an effort in this direction by implementing the *Alfabetiza MT* school incentives program, which is based on the Ceará model,²¹ and introducing incentives (financial and social rewards) for top-performing teachers and their respective schools with remarkable management practices.

18. **MT has the opportunity to strengthen the cooperation with municipalities to undertake learning recovery and acceleration strategies because of the constitutional change in the Brazilian Fund for the Development of Basic Education Financing (*Fundo de Desenvolvimento da Educação Básica - FUNDEB*).** The amendment of the Brazilian constitution established a results-based financing component for all states based on the experience of Ceará that carried out a similar reform in 2007. The key change is related to the transfer of the main state sales tax (*Imposto sobre Circulação de Mercadorias e Serviços, ICMS*) to municipalities, which after the reform is linked to improvements in education results. The reform of FUNDEB has been considered as the main inducement to promote the cooperation between the federal, state, and municipal governments to implement federal education policies. MT has just passed a law institutionalizing at the state level the transfer of 12 percent of ICMS revenues based on this new incentives' mechanism. One of the key challenges that the state faces is to build the capacity of at the municipal level to comply with the new legislation and cooperate to implement the learning recovery and acceleration strategies.

²⁰ Júnior, I. J. L., de Oliveira, V. H., & Loureiro, A. (2020). Incentives for Mayors to Improve Learning: Evidence from state reforms in Ceará, Brazil.

²¹ The program is implemented in collaboration with the NGO Partnership for Literacy in Collaboration Scheme (*Parceria pela Alfabetização em Regime de Colaboração, PARC*).



Gaps in digital readiness for teaching and learning

19. **Limited school internet connectivity hinders the attempts to modernize teaching and tackle the learning losses caused by the COVID-19 pandemic.** Although most state and municipal schools (96 percent and 87 percent, respectively) have internet connectivity, only 50 percent of state schools and 60 percent of municipal schools have broadband. Around 35 percent of state schools and 53 percent of municipal schools monitor the quality of their internet connection and, of these, only 22 percent and 30 percent, respectively, have a bandwidth greater than 20 Mbps – which is considered the minimum to support adequate learning activities (meaningful connectivity).²² According to the school census (*Censo Escolar*) 2020,²³ there is a significant digital gap between urban and rural schools; only 18.5 percent of rural schools have a broadband connection, compared to 64.7 percent of urban schools. Furthermore, even though state schools receive stipends to provide internet access for teachers and students and the 548 urban schools provide internet access via Asymmetric Digital Subscriber Line (ADSL) technology, only 75 of 261 rural schools are able to provide internet access with the appropriate bandwidth via satellites.²⁴ To increase the quality of distance learning in MT, it will be important to upgrade the bandwidth of the current ADSL internet access through the extension of the fiber network in the metropolitan, urban, and rural areas, as well as increase internet access via satellite in rural schools where other technologies are not available.

20. **The current technological infrastructure in schools, including the Local Area Network (LAN), is obsolete, as most of the investment in this infrastructure was made in 2012.** Since then, updated infrastructure has only been acquired for new schools, which means most schools in the state require a significant technology infrastructure upgrade. Although SEDUC recently purchased 6,000 new laptops for teachers to be donated to municipal schools as part of its infrastructure modernization efforts, and more than 37,000 laptops for students, which are currently deployed and managed through a Mobile Device Management console, the access to internet in the schools by these devices is limited not only due to poor internet connections, but also due to an outdated and limited LAN in the schools.

21. **The effective pedagogical use of technological infrastructure and of modern learning technologies will require the development of both teachers' and students' skills.** The provision of technological equipment alone will not achieve its intended purposes of enhancing learning. Capacity building for teachers and students to integrate learning technology effectively in the pedagogical process will be key to ensuring that the technology is used as a key resource to support learning recovery and acceleration. In particular, teachers need training to develop the skills to properly use technology as a pedagogical tool. According to a 2017 EDUTEC study, most teachers were not trained to use technology in the classroom, although 82 percent of the teachers in state schools use computers (desktops, notebooks, tablets) in the classroom.²⁵ Moreover, 43 percent of the teachers who use devices consider the equipment inadequate.²⁶ Ensuring that teachers have the skills to use technology in the classroom will

²² <https://a4ai.org/>

²³ <https://analitico.qedu.org.br/>

²⁴ The Asymmetric Digital Subscriber Line (ADSL) is a communications technology that offers faster connection speeds over traditional telephone lines, as compared to the connection speeds that dial-up internet provides.

²⁵ See in the link <https://cieb.net.br/relatorio-do-guia-edutec-avalia-adocao-de-tecnologia-para-fins-educacionais-em-14-estados-brasileiros-e-no-distrito-federal/>.

²⁶ SAEB, 2019



increase their adaptive capacity to continue teaching in a hybrid environment, if needed, in the event of any interruptions to schooling, including due to climate-related disasters.

22. **The SEDUC digital management system is outdated and inefficient, posing a challenge for managing human resources, and student enrollment and transportation.** SEDUC's existing Education Management and Information System (EMIS) is based on a monolithic software architecture that is outdated and undocumented, making it difficult to improve the existing capabilities or add new functionalities without affecting its integrity. This outdated EMIS is used for teacher recruitment and allocation, which leads to errors in defining class sizes and distribution of teachers, especially for math and science teachers. The system is also inadequate in addressing inefficiencies in the distribution of student enrollment, an important challenge in MT due to its large geographical area and low population density. Considering that 86 percent of schools are in urban areas, SEDUC struggles to implement an enrollment system that also efficiently benefits the 14 percent of students from rural areas. In parallel, SEDUC provides daily school bus service for 107,990 students (12 percent of total enrollees, of which 33 percent live in rural areas).²⁷ Consequently, managing a school bus system for a small percentage of students who are geographically dispersed across rural areas can be quite costly (1.4 percent of current expenditure in education).²⁸ Additional inefficiencies, such as an outdated teacher remuneration system, inefficient allocation of teachers, and limited fiscal space, along with the fact that 88 percent of total current expenditure on education is allocated to teachers' salaries, hamper the state's capacity to invest in learning resources and in the modernization and maintenance of the school environment.

Lack of safe, inclusive, green, and resilient learning environments

23. **School closures and disruptions due to climate change shocks and natural disasters pose significant management challenges in MT, while also hampering health and learning.** The education sector in MT is seasonally affected by disaster events that restrict access to educational facilities, such as floods, wildfires, landslides, and droughts, and these are expected to increase in frequency and intensity because of climate change. Water-borne diseases are likely to become more common since high temperature increases the disease agents' survival and replication, and floods can spread the disease agents faster.²⁹ WASH interventions have been proven effective in reducing water-related diseases.³⁰ The lack of monitoring systems does not allow an understanding of the magnitude of these climate-related impacts on learning or their relative weight (as compared to other causes) on dropout and learning. As a result, the lack of adaptiveness of schools to climate-related shocks contributes to learning losses in climate-affected areas, making improving the education sector's resilience to school closures an urgent priority.

24. **MT's climate change challenges could also have an impact on educational performance.** In some months over the year, the temperature in Cuiabá has increased by one and a half degrees Celsius when

²⁷ <https://radareducacao.tce.mt.gov.br/extensions/radareducacao/censoMatriculas.html>

²⁸ There are currently 1.965 shared school bus routes that represent 41.862.836 km per year and an additional 1.232 state bus routes that represent 19.995.262 kms per year. The total school transportation expense is shared between the State and the Municipalities and represents an annual investment of over BRL\$100 million.

²⁹ Levy K, Smith SM, Carlton EJ. Climate Change Impacts on Waterborne Diseases: Moving Toward Designing Interventions. *Curr Environ Health Rep.* 2018 Jun;5(2):272-282. doi: 10.1007/s40572-018-0199-7. PMID: 29721700; PMCID: PMC6119235.

³⁰ <https://www.who.int/europe/news-room/fact-sheets/item/water-and-sanitation>



comparing 1931-1960 to 1991-2020,³¹ and average annual temperatures are expected to rise by 1.7°C to 5.3°C by the end of the century due to climate change. Consequently, approximately 94 percent of schools resort to using air conditioning as the main ventilation in the classrooms. Floods, droughts, wildfires, and heat waves are also expected to become more frequent and intense, posing additional threats to infrastructure and to the health and safety of teachers and students. According to the Integrated Disaster Information System (S2ID), in the last decade, the number of reported wildfires, floods, and droughts has increased by more than 50 percent.³² Rising temperatures are of increasing concern, especially for vulnerable groups such as children and the elderly.³³ Preliminary evidence from Brazil shows a causal effect between higher temperature and lower scores on the national high school upper secondary education (12th grade) exam used for college admissions.³⁴ In fact, a child who experiences temperatures two degrees above average is predicted to attain one and a half fewer years of schooling than one who experiences average temperatures.³⁵ The government of MT is willing to integrate a focus on the environment into the education sector's policies and reforms to address these expected changes.

25. **MT's poor maintenance practices for school infrastructure are not conducive to learning and are far behind national climate and environmental standards.** Physical learning environments can contribute to the improvement of education outcomes when they provide certain characteristics, such being gender-friendly; offering sufficient Water, Sanitation, and Hygiene (WASH) facilities; offering accessibility for students and teachers with disabilities; being child-centered (nature-based, individualized, providing appropriate stimulation); and providing indoor environment qualities to promote learning. There is limited school infrastructure oversight by SEDUC; a lack of planning, discontinuity of resources, and lack of modern management tools have hampered the maintenance of schools and the ability to ensure adequate school conditions. Most public schools were built several decades ago, and some school facilities were not originally designed for offering educational activities. SEDUC estimates that 400 schools (out of the 759 schools in the network) need rehabilitation works, particularly to address the frequently reported deterioration of roofs and walls of school buildings due to high humidity. Furthermore, although MEC and state programs have attempted to develop sustainable, low-carbon and climate-resilient schools in all states in Brazil, little progress has been observed in MT and other states of Brazil.³⁶ For example, nearly 71 percent of public schools do not manage their waste adequately and, due to weather conditions, there is intensive use of air-conditioning in 73 percent of schools.³⁷ Additionally, more than 20 percent of schools do not have sufficient energy access and need significant electricity upgrades to promote energy efficiency. The use of alternative energy sources and

³¹ INMET, 2021. The measurement used as a reference is the minimum temperature in each month. October has increased 1.6 °C, and April and November have increased 1.5 °C. The temperature increase was registered in all months. Source: Instituto Nacional de Meteorologia. (2022). Normais Climatológicas do Brasil. <https://portal.inmet.gov.br/>

³² Event catalogue from Sistema Integrado de Informações sobre Desastres - S2ID (<https://s2id.mdr.gov.br/>).

³³ Climate Risk Profile: Brazil (2021): The World Bank Group.

³⁴ Melo, A. P., & Suzuki, M. (2021). Temperature, effort, and achievement: Evidence from a large-scale standardized exam in Brazil. mimeo.

³⁵ PNAS, 2019

³⁶ MEC considers that schools are sustainable when they maintain a balanced relationship with the environment and compensate for their environmental impacts with the development of appropriate technologies to ensure quality of life for present and future generations.

³⁷ Based on an assessment of infrastructure conditions developed by the SEDUC, 27 schools do not have a waste management system, 470 schools have septic tanks, and 145 schools have access to a public sewerage system. In addition, 226 schools report that the existing waste disposal management is insufficient.



efficient equipment is scarce,³⁸ and old devices and outdated power transformers contribute to high electricity usage in schools.

26. **School environments lack resilience, especially in Indigenous and *Quilombola* schools.** Between 1995 and 2019, the material damage to public school infrastructure in MT was BRL\$10.4 million, with BRL\$25.6 million in losses due to climate induced events and natural disasters.³⁹ These disasters affect school transport routes, which are frequently disrupted or closed for prolonged periods, affecting student and teacher attendance, and sometimes affecting the school calendar. The impacts on rural, Indigenous Peoples, and *Quilombola* community schools are even more significant. The 216 Indigenous Peoples and *Quilombola* community schools that are supported by the state and federal governments do not have adequate maintenance systems that ensure the quality of the school environment. Based on community consultations, SEDUC considers that 30 of these Indigenous Peoples and *Quilombola* community schools also need significant rehabilitation works to establish effective learning environments. Investment in physical and social infrastructure is an essential condition for increasing the climate resilience and adaptability of communities.⁴⁰

27. **A significant share of schools in MT are still not inclusive and lack appropriate adaptations to ensure equal access to all students and teachers.** In 2019, 25 percent of schools in MT did not have any accessibility resource, such as accessible toilets, ramps, or lifts. Although Brazil ratified the UN Convention on the Rights of Persons with Disabilities (CRPD) in 2008, a significant percentage of schools do not have design features or learning environments adequate for students with disabilities. In addition, teachers do not receive proper training to provide support to students with special needs.

28. **The schooling environment is associated not only with schools' physical facilities, but also with their social climate, and in MT, ensuring safety is a challenge for schools.** MT is one of the five states with the highest rates of threats to teachers and principals in its state public schools.⁴¹ According to SAEB 2019 data, students came to class carrying a weapon in 26 percent of state schools and 17 percent of schools experienced drug dealing events. Moreover, violence, bullying, and cyberbullying affecting students aged 13 to 17 in the school environment are multidimensional and have larger impacts among girls and residents of Cuiabá. The state lacks structured mechanisms to prevent school violence: only 34 percent of schools implement the SEDUC guidance to mitigate violence in schools, while 86 percent implement only sporadic actions. In addition to within-school violence, the lack of adequate infrastructure in and around schools adds to an unsafe environment. SAEB 2019 data shows that 22.9 percent of schools have poor or inadequate lighting outside the school. The 2019 National School Health Survey (*Pesquisa Nacional de Saúde do Escolar*, PeNSE) report highlights that 11 percent of students did not attend school due to unsafe routes from home to school or from school to home in MT; proper infrastructure supporting students' safe access to school is especially important in MT considering that its schools are spread out across the state.

³⁸Based on the same assessment, 624 schools have access to the public electricity network, 15 schools rely on power generators, 1 school has sustainable energy access (solar, wind), and 4 do not have any energy access. In addition, 130 schools report that the existing energy access is insufficient.

³⁹ Relatório de danos materiais e prejuízos decorrentes de desastres naturais no Brasil : 1995 – 2019 / Banco Mundial. Global Facility for Disaster Reduction and Recovery. Fundação de Amparo à Pesquisa e Extensão Universitária. Centro de Estudos e Pesquisas em Engenharia e Defesa Civil (2020).

⁴⁰ Hallegatte, Stephane; Rentschler, Jun; Rozenberg, Julie. 2020. Adaptation Principles: A Guide for Designing Strategies for Climate Change Adaptation and Resilience. World Bank, Washington, DC. World Bank. <https://openknowledge.worldbank.org/handle/10986/34780> License: CC BY 3.0 IGO

⁴¹ Brazilian Yearbook of Public Safety (2019).



C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

29. The objective of the Project is to support the State of Mato Grosso to improve teaching practices, teachers' digital readiness, and schools' learning environments.

Key Results

30. The indicators used to track progress on the achievement of project objectives are:
- i. Percentage of 6th grade teachers with improved teaching practices in Portuguese and mathematics in the state network⁴²
 - ii. Student dropout rate in 10th grade in the state network (disaggregated by gender)
 - iii. Percentage of teachers with digital skills' improvements
 - iv. Percentage of secondary students with access to sustainable, safe, inclusive, and resilient learning environments in the state network⁴³

D. Project Description

31. **The proposed Project will be financed through a loan in the amount of US\$100 million, using an Investment Project Financing (IPF) with Performance-Based Conditions (PBCs) instrument.** By supporting system-wide activities aiming to improve teaching practices and foster better management of schools, the Project will promote recovery from COVID-19-related learning losses and accelerate learning progress in MT. In addition, the Project will build more conducive social and physical learning environments and narrow digital divides, thereby increasing the resilience of MT schools to climate-induced and natural events.

32. **With a focus on supporting the state on its learning recovery and acceleration strategy, the Project will address key interrelated challenges in the education sector.** The Project will be structured into four Components. Component 1 will support short-term focused interventions to improve teaching practices and will strengthen individualized remedial learning programs to reverse learning losses and accelerate learning progress in municipal and state primary and secondary schools. It will also include activities to improve schools' management strategies and foster collaboration between the state and municipalities, given that this is critical to achieve visible and sustainable changes in education outcomes in MT. Components 2 and 3 will contribute to long-term structural interventions to transform digital technology and the school infrastructure of state primary and secondary education. Specifically, these components seek to ensure that technology is effectively used to promote learning and to improve the

⁴² Improvements in teaching will be measured with the TEACH instrument. It is a free classroom observation tool that provides information about the teaching practices inside classroom. The tool is designed to be used in primary classrooms (grades 1-6) and was designed to help low- and middle-income countries track and improve teaching quality.

⁴³ SEDUC developed standards for the physical learning environments based on qualities and characteristics that can help to improve education outcomes. Eight factors related to sustainable (i, ii) safe (iii, iv) inclusive (v, vi, vii) and resilient (viii) schools will be monitored to track these standards in the schools that will benefit from the Project's interventions. The factors are: (i) reduction of thermal transmittance of walls, windows and roofs; (ii) construction waste management and maintenance of schools; (iii) violence prevention plan; (iv) adequate WASH facilities; (v) national accessibility physical standards; (vi) learning laboratory rooms for students with learning gaps; (vii) resource rooms for special education students; and (viii) fire risk management and training.



education sector's resilience to school closures. Component 2 will support schools' digital readiness by providing adequate connectivity, upgraded systems and training. Component 3 will facilitate adequate learning environments by rehabilitating and maintaining school infrastructure, adapting school infrastructure to be more resilient to the potential impacts of climate change, and promoting safe and inclusive school environments. Component 4 will support Project coordination and technical assistance activities. The Project will support primary and secondary education, with activities focusing on different levels of education and prioritizing vulnerable schools to achieve its development objectives.⁴⁴

Component 1: Strengthen Pedagogical Interventions and School Management Strategies for Learning Recovery (US\$21.0 million, disbursed against the achievement of two PBCs)

33. **Component 1 will support pedagogical and school management interventions to address students' learning recovery and acceleration.** The objective of this component is to support SEDUC's learning recovery and acceleration strategies through interlinked and evidence-based interventions. This Component will focus on: (i) the design of pedagogical interventions tailored to address students' specific learning gaps and support students at risk of dropping out, creating a comprehensive approach at the school level to strengthen the Learning Labs activities and an effective Early Warning System (EWS); (ii) the development of a new Teacher Professional Development (TPD) program to improve pedagogical techniques that boost learning recovery; and (iii) support to the implementation of a collaborative system between SEDUC and MT municipalities by strengthening policies for better school management, principals and teachers' selection, and accountability. The Component will be disbursed against three PBCs that will reflect the capacity of the state to provide technical assistance to implement a learning recovery strategy for all its primary and secondary schools and promote cooperation with municipal networks.

34. **Subcomponent 1.1: Promote learning and schooling recovery interventions (US\$16.0 million).** The main objectives of this Subcomponent are to promote an effective response to recover from learning losses and reduce the dropout rates of lower and upper secondary students in state schools. To achieve these objectives, three main activities will be supported, all aligned with Pillar 2 of the GCRF – protecting people and preserving jobs. The first activity will finance the strengthening of Learning Labs in schools of the state network. The second relates to the implementation of a TPD program based on international best practices. The third activity involves the design and implementation of an Early Warning System (EWS) to prevent student dropout.

35. **Quality Learning Labs to address individualized learning needs.** The tasks associated with this activity are: (i) the implementation of standards for personalized tutoring strategies to map learning gaps, creating small groups of students with similar learning difficulties, regardless of their grade or age; (ii) the design of structured pedagogical digital and non-digital materials focusing on foundational learning in basic competencies; (iii) training for Learning Labs personnel; and (iv) the provision of learning materials for students, such as workbooks and energized books to promote students' engagement.⁴⁵ The activities will be coordinated with the Component 2 to boost the use of technology on the Learning Labs. In addition, this Subcomponent is aligned with the hybrid education interventions implemented by SEDUC in collaboration with FGV and Google for Education to respond to students' specific learning needs and reduce gaps in their understanding. It also promotes learning continuity in the event of climate disasters or other shocks that could result in school closures. The continuity of learning is secured by providing tools

⁴⁴ Vulnerable schools are those with lower education quality index (IDEB) and with more poorest students, measured by number of beneficiaries of CCT, as well as the indigenous and *Quilombolas* schools.

⁴⁵ Energized books use QR codes to connect with the digital content of the hybrid learning strategy.



for students and teachers for remote learning (e.g., structured materials and energized books that students can take home in case of school closures). The activities are consistent with The National Learning Recovery Policy, which is supported by the Recovering Learning Losses from COVID-19 Pandemic in Brazil Program for Results (P178563).

36. **Design and implementation of a TPD Program to promote pedagogical classroom management, and leadership and school management.** The following pedagogical classroom management activities will be financed: (i) the design of a new professional development program for teachers--targeting 3rd through 9th grade teachers--to improve their teaching techniques, in alignment with personalized tutoring standards; (ii) the design and implementation of peer-to-peer learning opportunities and a continuous coaching system to establish feedback mechanisms for teachers; and (iii) the development of practical training materials on pedagogical skills. A classroom observation tool (TEACH) will be used to assess adherence to and usage of the content of the TPD program. Interventions on leadership and school management include: (i) the training of pedagogical coordinators and school leaders on the use of data (such as internal and external learning assessments), leadership techniques, planning, and setting standards and benchmarks of management processes; and (ii) the definition of quality index target (IDEB) and policy milestones of programs implementation to increase accountability at the classroom and school levels. The activities will address the differences on teaching practices between male and female teachers in MT whenever needed. Teachers will also receive training on climate preparedness and response, so that they can effectively manage in the event of a climate related event.

37. **Development of an EWS to identify and support students at high risk of dropping out.** The design of the EWS involves three main actions: (i) the design and implementation of a “dropout risk” questionnaire (with yes/no questions) for students, and a “dropout triggering factors” questionnaire (e.g., teenage pregnancy, sexual violence, bullying, exposure to extreme weather events, and other drivers) for school coordinators; (ii) the development of personalized interventions based on the mappings of the dropout risk and triggering factors; and (iii) specific training on implementation of anti-dropout interventions for school personnel. This initiative is aligned with the federal program to prevent school dropouts and builds capacity at the central and regional levels to support municipal networks to integrate information and actions.

38. The results of these activities will be captured through the following PBCs:

- i. **PBC 1: Percentage of state schools implementing personalized tutoring in adequate Learning Labs (US\$11.0 million).** It will monitor the development and implementation of personalized tutoring classes in state schools to help recover learning losses and contribute to the return to in-person education by improving Learning Labs activities. The monitoring of the PBC will be supported by an external verification agent (EVA).
- ii. **PBC 2: Percentage of state schools implementing the Early Warning System (EWS) to prevent student dropout and evasion (US\$10.0 million).** This will track the implementation of the EWS in state schools to predict students’ risk of dropping out related to school closures, and climate change induced events, as well as the implementation of personalized mitigation strategies. The monitoring of the PBC will be supported by an external verification agent (EVA).

39. **Subcomponent 1.2: Strengthen school management and promote state-municipality cooperation and cost efficiency (US\$5.0 million).** This Subcomponent aims to support the state in the reorganization of the regional governance structure and the decentralization of school management through the training of regional department personnel and the provision of technical assistance from the state to municipalities to promote a collaborative system between SEDUC and MT municipal governments. The key activities supported under the Subcomponent include: (i) capacity building for



SEDUC and regional department personnel on management and leadership for the decentralization of school coordination under the regional departments; and (ii) capacity building and awareness-raising activities for local stakeholders in the education and financing sectors to support the implementation of the reform of the main state sales tax (ICMS) at the municipal level. The latter is aligned with the reform of the ICMS results-based financing program to promote the cooperation of municipalities to implement the state and national learning recovery and acceleration strategy, as well as to promote the efficient allocation of funds via a rigorous mechanism of incentive. The preparation of emergency plans aligned with the early warning systems will be included in the capacity building on school coordination, that will allow a coordinated response to be implemented in place in case of climate related events. This subcomponent is aligned with Pillar 4 of the GCFR, strengthening policies, institutions and investment for rebuilding better, as its activities address longer-term goals to support the improvement of systems for inclusive and sustained learning recovery.

Component 2: Transform Digital Infrastructure (US\$20.0 million, disbursed against two PBCs)

40. **Component 2 will improve the digital conditions for teaching and learning through better digital infrastructure of state schools and SEDUC.** This component will improve school connectivity and the usage of existing technology, such as the equipment that were recently acquired and deployed and the existing learning platform and will provide targeted training to enhance teachers' and students' digital skills. It will also expand the use of geospatial data to foster management systems efficiency. This component will include two PBCs.

41. **Subcomponent 2.1: Improve schools' connectivity and digital skills (US\$16.0 million).** This Subcomponent will establish the digital infrastructure needed to guarantee schools' connectivity, provide digital upgrades and enhance teachers' and students' digital skills, in consonance with GCRF Pillar 4, strengthening policies, institutions and investment for rebuilding better. The improvement in teachers' and students' digital skills benefits the remote learning quality in case of school disruptions due to climate change shocks. Activities under this Subcomponent will include: (i) improvement of internet bandwidth through the deployment of fiber links to large schools; (ii) local area network, including Wi-Fi connectivity in schools; (iii) proactive management of network equipment through a Network Management (MDM) system; and (iv) provision of training and materials to increase digital skills. The Project will upgrade internet connections in 150 large schools (schools with more than 700 students) in the metropolitan, urban, and rural areas where it is possible to extend the existing fiber network, as well as the LAN in 186 large schools. The Subcomponent will also monitor internet bandwidth quality through the deployment of *Medidor Educação Conectada* Software in all targeted schools, as well as the deployment of physical networks to provide comprehensive internet access inside the schools (classrooms and administrative areas).

42. **To optimize the impact of this investment, the Subcomponent will also support the development and integration of a new digital skills training program into the state curriculum.** These activities will be aligned with Component 1 to foster TPD opportunities using tech-based solutions and enhance classroom pedagogical practices. Furthermore, the Subcomponent will target schools with a higher risk of exposure to climate change induced disasters (to support increased or more reliable remote connectivity) and promote the responsible disposal and recycling of obsolete technological equipment.



Providing schools' internet connection contributes to the community climate resilience since approximately 87 percent of MT schools are used as shelters in emergencies⁴⁶.

- i. **PBC3: Number of state schools with adequate internet connection (US\$16.0 million).** This PBC will track the quality and availability of internet connectivity in the state schools. This will ensure that each school has adequate internet access in relation to its student population, as per the existing MEC guidance on adequate Internet being defined as a minimum of 100Kbps per student multiplied by all students in each shift. The monitoring of the PBC will be supported by an external verification agent (EVA).

43. **Subcomponent 2.2: Upgrade the existing Education Management and Information System (EMIS) (US\$4 million).** The subcomponent will support the upgrade of the existing outdated and inefficient EMIS software to improve education system and schools management and promote efficient decision-making in municipal and state networks. The new EMIS will incorporate the functionalities of the existing EMIS into a new system, adding new functionalities to improve management, such as geolocation of schools, students, and teachers. This EMIS will be integrated with the existing teacher training Learning Management System (LMS) and the future school equipment and maintenance systems to improve interoperability and consistency of data between the systems. Actions will include: (i) upgrading MT's current EMIS (SIGEDUCA); (ii) development of a student registration portal that will collect geospatial data as the front end of the new student registration module; (iii) creating a school bus routing and planning system based on the geospatial data of students and schools; (iv) developing a teacher management system to support efficient deployment and allocation of teachers; (v) enhancing the existing LMS with new functionalities to support blended education; and (vi) integrating the LMS with the Training Management module of the EMIS that will be developed. The EMIS will be maintained by the Superintendence of Information Technology (*Superintendência de Tecnologia da Informação*, SUTI) that has the technical capacity in place to manage the information system. This subcomponent is also aligned with the fourth Pillar of the GCRF, strengthening policies, institutions and investment for rebuilding better, as it supports the enhancement of management and information systems that will address immediate, medium and long-term barriers to better school management and improved educational systems.

44. **The Project will also contribute to scaling up all the state's systems for municipal networks to promote data interoperability between systems and more efficient use of educational data.** These system components will be developed as a modular service-oriented architecture (SOA) and will be deployed in SEDUC, municipal education departments, and municipal and state schools to ensure harmonization in the use of the management systems across the state. The EMIS will contribute to measuring the impact and risk rating of natural and climate-induced disasters in schools, which will be used to inform the school network of possible climate events and carry out evacuations or put in place emergency management plans. The LMS will support training delivery to teachers and other capacity building activities to raise the school community's awareness of the importance of climate change disaster risk management and how to implement mitigation and adaptation measures.

- i. **PBC 4: Upgrade of the Education Management and Information System (EMIS) (US\$4 million).** It will monitor the development and implementation of the EMIS in state schools. This will contribute to strengthening the SEDUC's capacity to manage the education system and promote efficient decision-making based on geospatial data in municipal and state networks, which will be tracked based on the percentage of schools using the functionalities of the new EMIS. The achievement of this PBC will also contribute to SEDUC decision-making processes related to

⁴⁶ Based on the assessment of infrastructure conditions developed by SEDUC.



schools' resilience to climate change shocks and natural disasters. The monitoring of the PBC will be supported by an external verification agent (EVA).

Component 3: Create Green, Resilient, Inclusive, and Safer Schools (US\$53.0 million, of which US\$15 million will be disbursed against the achievement of two PBCs)

45. **Component 3 will support the rehabilitation of school infrastructure and complementary strategies to promote safer, more inclusive, greener, and more climate-resilient learning environments.** This component will help SEDUC design and improve school environments to support learning recovery and acceleration and increase resilience to future crises and climate change impacts.⁴⁷ Investments in infrastructure will support the construction of energy-efficient solutions, ensure access to water supply and waste management systems, and improve WASH infrastructure. In addition, the Component will ensure infrastructure improvements for schools in Indigenous Peoples and *Quilombolas* communities, as well as architectural conditions to build safer schools for girls (appropriate physical facilities, including school buildings, grounds, separate sanitation facilities, furniture, lighting and security equipment). Furthermore, the Component will establish complementary strategies to create an adequate environment for students with disabilities and to better include and protect vulnerable students through violence prevention plans. This Component will include two PBCs in the amount of US\$13 million.

46. **Subcomponent 3.1: Rehabilitate and maintain safe, inclusive, green, and resilient infrastructure (US\$46.0 million).** This Subcomponent will improve school infrastructure to promote safe, inclusive, green, and climate resilient learning environments;⁴⁸ adapt physical school environments for students and teachers with disabilities; and rehabilitate Indigenous Peoples and *Quilombolas* schools based on community consultations. Activities to improve school infrastructure will include: (i) the development and implementation of a School Infrastructure Maintenance Management System (MMS)⁴⁹ to strengthen the state's school infrastructure operation and maintenance (O&M), the system will enable policymakers to make risk-informed investments in infrastructure by providing information about disaster-risk and climate-vulnerable areas; (ii) architectural and engineering designs and civil works for the rehabilitation of existing schools in line with green, resilient, and inclusive principles;⁵⁰ ⁵¹ (iii) procurement of equipment such as power stations, solar panels, and energy star-rated air conditioning equipment to improve energy efficiency in selected school facilities; (iv) civil works to improve WASH facilities, including connection to public water supply and wastewater pipelines to avoid water-borne and infectious diseases, such as Dengue fever and measles; (v) civil works to improve girls' safety in schools (appropriate physical facilities, including school buildings, grounds, separate sanitation facilities, furniture, lighting and security equipment);⁵² and (vi) adapting architectural designs and rehabilitating schools to promote inclusive environments for Indigenous Peoples, *Quilombolas*, and students with disabilities. This subcomponent is

⁴⁷ See Patrinos (2019) for the learning challenge in the 21st century: <https://documents1.worldbank.org/curated/en/237951586807728651/pdf/The-Learning-Challenge-in-the-21st-Century.pdf>.

⁴⁸ Including their ability to address natural disasters such as floods, droughts, and fires.

⁴⁹ The school MMS is a systematic method for inspecting and rating school conditions in a given area, as well as prioritizing and recommending rehabilitation and maintenance to maximize results within a given budget amount.

⁵⁰ Architectural and engineering designs would also benefit construction of new schools that will not be financed under the Project. Rehabilitation includes reducing the thermal transmittance of roofs and walls - which reduces the need for artificial ventilation-; improving the schools' waste management system and drainage.

⁵¹ Architectural and engineering designs would also benefit construction of new schools that will not be financed under the Project.

⁵² Illustrative checklist on how to ensure safe physical spaces in schools: <https://www.endvawnow.org/en/articles/1756-safe-and-welcoming-schools-.html>



aligned with Pillar 3 of the GCRF, strengthening resilience, by enhancing schools' preparedness in responding to risk of disasters, reducing crises impacts and improving climate resilience mechanisms.

47. **In combination with the technical assistance under Subcomponent 4.2, this Subcomponent will support the development of a School Infrastructure Investment Plan based on a school mapping exercise.** This plan will organize the infrastructure interventions of SEDUC, for example, within a system of broad versus targeted activities, pre-investment and investment phases, and investment versus management. These activities will target 75 state schools in MT's most vulnerable and fragile areas, including 15 schools in Indigenous and *Quilombolas* communities, which will be selected based on needs assessments and in consultation with beneficiary communities. The selection process of the targeted schools is described in Annex 2.⁵³

48. **Furthermore, to improve the adaptive capacity of the school system against climate change impacts, the Subcomponent will support the development of a framework for scaling up low-carbon and climate-resilient infrastructure interventions in the medium to long term through school infrastructure plans.** Carbon emissions will be reduced by improving schools' waste management system and decreasing energy consumption by acquiring energy-efficient equipment. Energy efficiency and WASH considerations will be informed by a technical assessment that will identify sustainable and scalable energy efficiency solutions, following international best practices adequate to the local context, to improve the quality of learning environments for children and increase the resilience of the school system to climate shocks.

- i. **PBC5: Development and implementation of the School Maintenance Management System (MMS) in state schools (US\$8.0 million).** This PBC will monitor the development and implementation of the MMS in state schools, which will contribute to rehabilitating and maintaining the current school network to be more safe, inclusive, green, and climate resilient. The Project will also monitor the flow of funds and training of the school administrators to ensure the sustainability of the system. The monitoring of the PBC will be supported by an external verification agent (EVA).

49. **Subcomponent 3.2: Promote violence prevention and inclusive education in schools (US\$7 million).** This subcomponent will support complementary activities to prevent violence and promote inclusion, in coordination with the EWS activities under the Subcomponent 1.1, considering the correlation between high levels of school violence and dropout risk. Both activities mitigate the dropout rate in vulnerable contexts in the short, middle, and long term. The EWS helps to identify students with high dropout risk, and to propose tailored interventions acting on short- middle terms. The Violence Prevention Plans support the school in building activities to create a safer environment in long-term results on drop-out rates. Preventive interventions will be carried out with a gender lens, focusing on the prevention of School-related Gender-based Violence (SRGBV), psychological violence, bullying, and cyberbullying. Key activities will include: (i) focus groups and in-depth interviews to identify the leading causes of violence in schools and collect suggestions for implementation of the violence prevention plan; (ii) development of activity toolkits to prevent school violence, which can include activities based on cognitive behavioral therapy theory, a system of violence notification, and activities with the student association. The program will have an intercultural approach to respond to the needs of indigenous schools and will have a differential approach for girls and boys and their specific needs. The implementation of these activities is expected to reduce dropout among vulnerable girls and boys and

⁵³ Through a diagnosis-analysis-planning process and in consultation with stakeholders, vulnerable and fragile schools will be identified and the need for interventions in the selected school facilities will seek cost-efficient engineering solutions applicable to the local context.



thus reduce negative economic impacts related to lost lifetime earnings.⁵⁴ This subcomponent is aligned with Pillar 2 of the GCRF – protecting people and preserving jobs, by addressing gender equality in its activities.

50. **The Subcomponent also seeks to help overcome the barriers to educating all children and promote equality and non-discrimination.** Aligned with subcomponent 1.1 activities, it will do so by: (i) providing teacher training and acquisition of teaching and learning materials (TLM) to support disability-inclusive teaching; (ii) carrying out consultations with indigenous and *Quilombolas* communities to integrate cultural components and traditions specific to each community in the rehabilitation of schools; and (iii) adaptation and provision of TLMs for Indigenous Peoples and *Quilombolas* schools based on the community consultations. Universal design will also be applied on selected infrastructure to eliminate architectural and physical barriers for disabled students, teachers, and any other person with disabilities.

- i. **PBC6: Percentage of secondary schools in the state network implementing violence prevention plans (US\$7.0 million).** Activities to address barriers to education access and promote equality and nondiscrimination will be monitored, through the preparation of plans to prevent and combat violence, including psychological violence, bullying, cyberbullying, and Gender-Based Violence (GBV). The monitoring of the PBC will be supported by an external verification agent (EVA).

Component 4: Project Management, Monitoring, and Evaluation (US\$5.75 million)

51. **Component 4 will support Project coordination, capacity building of SEDUC, and the implementation of Monitoring and Evaluation (M&E) activities.** A Project Management Unit (PMU) will be established under this Component to carry out Project coordination, including project management, procurement, financial management, M&E, and environmental and social management. Capacity building will be provided to SEDUC and the municipal network teams to enable them to design and coordinate the Project's main activities.

52. **Subcomponent 4.1. Project Coordination (US\$2.0 million).** The main objective of this Subcomponent is to support SEDUC in the effective coordination of the Project. The subcomponent will finance: (i) the PMU's operational costs, basic equipment, and goods and materials; (ii) implementation of the Governance Risk Assessment System (software and protocols) to identify possible fraud in public expenditures and the Spend Analysis System for strategic procurement; (iii) capacity building for internal controls and verification of PBCs; (iv) staff to support environmental and social (E&S) management; (v) communication strategies for the dissemination of the Project's activities, and (vi) studies for participating agencies with emerging needs.

53. **Subcomponent 4.2. Training, Monitoring, and Evaluation (US\$3.75 million).** This Subcomponent will provide technical assistance to strengthen SEDUC's institutional capacity to implement the Project and carry out its main activities, such as the design of green and inclusive schools and the development of the EWS. It will also finance studies on critical topics, including, *inter alia*: (i) revision of the SEDUC teacher management policies to define standard procedures and implement entry and qualification requirements (certification) for teachers and school principals; (ii) development of merit- and need-based school principal and teacher recruitment and deployment policies, by strengthening SEDUC's capacity to monitor and evaluate personnel performance and practices⁵⁵; (iii) school mapping, school infrastructure investment planning, and supply and demand analysis for resizing (internal organization) and reordering

⁵⁴ See Ending Violence in Schools: An Investment Case for the analysis for the cost-benefit analysis of violence-prevention interventions: <https://openknowledge.worldbank.org/handle/10986/35969>.

⁵⁵ The FUNDEB reform establish as a condition the merit-based selection of principals for the states and municipal network to receive additional funds of the federal government.



(municipalization) of the state school network; (iv) surveys of schools' technology infrastructure and teachers' digital skills (in collaboration with the *Centro de Inovação para a Educação Brasileira*, CIEB); (v) evaluation of the effect of the pandemic on learning, socioemotional skills, and teaching practices (through the use of the TEACH classroom observation tool); (vi) training for the SEDUC team on the development of architectural projects for sustainable, climate resilient, and inclusive schools; and (vii) training for the SEDUC team on planning and project management.

54. **Counterpart funds in the amount of US\$25 million will be accounted and reported, as the amounts executed under any project components but not claimed for reimbursement under the project.**

Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Assessment of Environmental and Social Risks and Impacts

Environmental and social risk ratings are Moderate. Overall, the proposed activities do not present environmental complexity and are not expected to endanger living natural resources, or to pose a risk of environmental pollution and degradation of natural resources (air, soil, water), or to affect biodiversity or habitats, either positively or negatively, directly or indirectly, or depend upon biodiversity for its success. The proposed construction works will not have large-scale, significant, and irreversible adverse direct impacts and/or downstream implications on the environment. Their impacts are expected to be localized and preventable through responsive mitigation measures. Construction and rehabilitation works would not rely on heavy machinery and are not expected to increase potential traffic and road safety risks to local communities. On the contrary, the project is expected to have a positive impact on the natural resource efficiency management and pollution prevention through: the development and implementation of natural resources consumption efficiency practices, including paper consumption reduction, water and waste management in public schools; the identification of opportunities to shift the source of electricity and improve energy efficiency; reductions in consumables, school travel time and energy consumption through the digitalization of public administration services; and improved geospatial database and electronic tools for education monitoring natural resources. It also represents an opportunity to increase the Borrower's capacity for improving governance of biodiversity and ecosystem services, while meeting other objectives such as climate change mitigation. The Project is not expected to bring adverse impacts to Indigenous Peoples or require land acquisition or restrictions in land use. On the contrary, Indigenous Peoples and other disadvantaged and vulnerable social groups will benefit from the construction and rehabilitation of community schools and the provision of equipment and access to the Internet to schools and students. The Project is also designed to address challenges related with gender, gender-based violence, and SEA/SH, which are related with girls' school drop-out rates. High volumes of labor influx are not expected in these works and, consequently, the social risks ordinarily associated with labor influx are not expected to be significant. However, some schools may be located in rural communities and the works may be hard to supervise.

E. Implementation



Institutional and Implementation Arrangements

30. **Implementing Agency.** SEDUC will be responsible for coordinating, monitoring, and reporting on overall Project activities and its outcomes. A PMU will be established within SEDUC to execute this Project, and specifically, within SEDUC's Cabinet office (*Núcleo Estratégico de Captação de Recursos e Avaliação de Projetos*, NGER). Other Sub-secretariats will implement and monitor specific components and subcomponents, reporting back to NGER/SEDUC. The Sub-secretariat for Educational Management (*Secretaria Adjunta de Gestão Educacional*, SAGE) will oversee all Pedagogical Development related activities. The Sub-secretariat of Regional Management (*Secretaria Adjunta de Gestão Regional*, SAGR) will be responsible for regional management and for monitoring the implementation of activities at the level of Regional Directorates. The Sub-secretariat for Systemic Administration (*Secretaria Adjunta de Administração Sistêmica*, SAAS) will carry out the Project's financial management and procurement. The Sub-secretariat of Infrastructure and Property (*Secretaria Adjunta De Infraestrutura E Patrimônio*, SAIP) will coordinate and execute all construction works and Information Technology (IT) activities, and the Sub-secretariat for People Management (*Secretaria Adjunta de Gestão de Pessoas*, SAGP) will coordinate and implement all capacity building activities.

31. **The PMU will put together a core team that will include a project coordinator, a deputy coordinator, a senior financial management (FM) specialist, a senior procurement specialist, an M&E specialist, a senior environmental specialist, a senior social specialist, and a communications specialist.** The PMU will assign a focal point within its structure to each of the sub-secretariats and other participating agencies to enable close coordination and monitoring of results and activities. External consultants will be hired, as required, to guarantee essential support to the PMU. Additional operational protocols will be refined and agreed during the Project preparation phase and will be included in the Project's Operations Manual.

32. **SEDUC's downstream monitoring of the Project's implementation will be supported by the 15 recently created Regional Directorates of Education (*Diretorias Regionais de Educação*, DREs).⁵⁶** The DREs are organizational structures, subordinate to SEDUC, whose mission is to manage the implementation, monitoring, and evaluation of the basic education policy in school units' jurisdictions, ensuring students' access to and retention in schools, as well quality learning. Subordinate to SAGR, the Superintendence for School Relations (*Superintendência de Relacionamento Escolar*, SURE) will be responsible for advising and monitoring school networks, including school mediation and the school census. The Superintendence for Regional Directorates (*Superintendência das Diretorias Regionais*, SUDR) will be responsible for supervising the implementation of all DREs. The DREs will implement activities via six coordination offices (*coordenadorias*).

CONTACT POINT

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⁵⁶ DREs were created by Law n^o 11.668, of January 11, 2022 and regulated by Decree n^o 1.293 of February 15, 2022.



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