

PROGRAM SOUNDNESS ASSESSMENT

A. Program Description

1. **Overview.** The proposed results-based lending (RBL) program of the Asian Development Bank (ADB) will support the Government of Sri Lanka's General Education Sector Development Plan (GESDP), 2020—2025 and its efforts to implement comprehensive reforms in secondary education, as a basis for the country's aspirational shift to a knowledge-centered economy.¹ The RBL program aims to transform the secondary education system to align with the modern global economy by 2025, by (i) enhancing the quality and relevance of secondary science, technology, mathematics, and commerce (STMC) programs; (ii) strengthening provincial and school capacity to implement education reforms; and (iii) strengthening sector management capacity. Activities to achieve these outputs include (i) establishing new assessment systems to improve learning and hone 21st century skills;² (ii) revising curricula to integrate 21st century skills and improve STMC; (iii) fostering inquiry-based and interactive pedagogical practices; (iv) ensuring equitable teacher deployment in provincial and rural areas; (v) strengthening educational leadership at subnational and school levels to support the reforms; (vi) aligning performance-based partnership agreements between central and provincial authorities to optimize reforms; and (vii) strengthening monitoring and evaluation systems, procurement, and financial management in the sector.

2. **Country context.** Sri Lanka recorded an average annual economic growth rate of 5.2% from 2010 to 2019,³ reaching upper middle-income status in 2019. Growth has since slowed (2.3% in 2019),⁴ partly because of the 2019 Easter bombings, which devastated the country's vital tourism industry, a main source of jobs, and discouraged foreign investment. Sri Lanka was reclassified as a lower middle-income country in June 2020.⁵ The impact of the coronavirus disease (COVID-19) outbreak is expected to contract real gross domestic product by 5.5% in 2020⁶ and sharply increase poverty.⁷ Sri Lanka aspires to be an advanced knowledge economy⁸ but needs to develop its human capital and transition to higher-value, more complex economic activities.⁹ Education and skilled labor are thus national priorities. The COVID-19 outbreak¹⁰ disrupted education for more than 5.57 million learners (including 2.73 million at secondary level) due to school and university closures.¹¹ In response, the government is implementing the Contingency Emergency Response Plan for general education,¹² using e-learning platforms and/or classes through television. However, children and teachers in rural areas lack internet

¹ Government of Sri Lanka, Ministry of Education (MOE). 2020. *Sri Lanka: General Education Sector Development Plan 2020–2025 (revised May 2020)*. Colombo.

² Among others, 21st century skills include problem solving, innovative thinking, motivation, resilience, and teamwork.

³ Asian Development Bank (ADB). 2020. *Key Indicators for Asia and the Pacific 2019*. Manila; and ADB. 2020. *Gross Domestic Product (GDP) Growth, Asian Development Outlook Supplement 2020 – June 2020*. Manila.

⁴ ADB. 2020. *GDP Growth, Asian Development Outlook Supplement 2020 – June 2020*.

⁵ In 2019, Sri Lanka's gross national income per capita was \$4,020. World Bank. *World Bank Analytical Classifications*; and *GNI per capita Atlas Method* (accessed on 10 September 2020).

⁶ ADB. 2020. *Asian Development Outlook Update: Wellness in Worrying Times*. Manila.

⁷ The impacts of COVID-19 could push another 2.8% of the population (about 600,000 people) below the poverty line of \$3.20/day in 2020 (ADB estimates). In 2016, 10.1% were below the \$3.20 poverty line (*World Bank estimates*).

⁸ Government of Sri Lanka. 2019. *National Policy Framework: Vistas of Prosperity and Splendour*. Colombo.

⁹ In a ranking of economic complexity, Sri Lanka's slipped from 69th out of 133 countries in 2008 to 78th in 2018. Harvard University. *Atlas of Economic Complexity* (accessed 30 August 2020).

¹⁰ The government has so far contained the outbreak, with 2,986 confirmed cases (cumulative) and 12 deaths as of 28 August 2020. World Health Organization. *COVID-19 Dashboard* (accessed 29 August 2020).

¹¹ United Nations Educational, Scientific and Cultural Organization (UNESCO). *COVID-19 Educational Disruption and Response*.

¹² Government of Sri Lanka, Ministry of Education (MOE). 2020. *Contingency Emergency Response Plan for the School Education Sector in Sri Lanka to Minimize COVID-19 Pandemic Disruptions*. Colombo.

connectivity, access to devices and digital platforms, and the training required for distance education.¹³ Thus, the pandemic has exacerbated rural–urban inequity, while causing learning losses that could lead to more dropouts.¹⁴

3. **Program context.** The proposed program is aligned with ADB's Strategy 2030¹⁵ and the country partnership strategy, 2018–2022, and is included in its country operations business plan, 2020–2022.¹⁶ Building on previous reforms, the government's GESDP has four thrusts: (i) quality of education improved, especially in science, technology, and mathematics; (ii) equity in education strengthened; (iii) stewardship and service delivery of general education strengthened; and (iv) evidence-based education policymaking and planning enhanced. The GESDP budget (for both primary and secondary education) is \$11.7 billion. The government requested ADB support for the GESDP with regard to upper secondary education to continue its reforms. The proposed program will cost \$3.2 billion, of which ADB will finance \$400 million through the RBL modality.

B. Program Soundness

1. Relevance and Justification

4. **Developmental issues the program aims to address.** Secondary education is at the core of efforts to lay the foundation for the future human resource pipeline. Sri Lanka's competitiveness will depend on its ability to build a diversified¹⁷ and agile workforce able to innovate and adapt to rapid technological developments.¹⁸ The aim is to empower young people to reach their full potential, and infuse new technology to enhance production and productivity, as set out in the 2019 National Policy Framework.¹⁹ Access to primary and lower secondary education is high,²⁰ but in upper secondary education enrollment is skewed toward arts streams. In addition, the quality of education (especially in provincial and rural schools) and its relevance to labor market needs have to be improved. Targeting grades 10–13 is particularly strategic because the fields of study and the education outcomes in these grades determine not only

¹³ In 2019, 44% of urban, 29% of rural, and 13% of estate population (aged 5–69) were computer literate. About 30% (27.5% of rural and 12.2% of estate population) are able to use the internet. Government of Sri Lanka, Department of Census and Statistics. 2020. [Bulletin of Computer Literacy Statistics of Sri Lanka - 2019 Annual](#). Colombo.

¹⁴ Globally, COVID-19 is expected to cause a loss of 0.6 learning-adjusted years of schooling, increase by 25% the share of secondary children below minimum proficiency level and heighten the risk of school dropout. Brookings Institution. 2020. [Future Development - Learning Losses Due to COVID-19 Could Add Up to \\$10 Trillion](#). Washington, DC (accessed 9 August 2020).

¹⁵ The program is aligned with ADB's Strategy 2030 and three key operational priorities: (i) addressing remaining poverty and reducing inequalities; (ii) accelerating progress in gender equality; and (iii) strengthening governance and institutional capacity. ADB. 2018. [Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific](#). Manila.

¹⁶ The proposed program contributes to pillar 1 (promoting economic diversification and productivity enhancement by upgrading human capital) of ADB's country partnership strategy, 2018–2022. It is included in ADB's country operations business plan, 2020–2022 as "Secondary Education Sector Development Program." ADB. 2017. [Country Partnership Strategy: Sri Lanka, 2018–2022—Transition to Upper Middle-Income Country Status](#). Manila

¹⁷ R. Hausmann et al. 2013. [The Atlas of Economic Complexity—Mapping Paths to Prosperity](#). Boston, Massachusetts: Institute of Technology and Center for International Development, Harvard University.

¹⁸ Rapid technological advancements are likely to create new occupations and result in greater demand for non-routine cognitive and soft skills. (ADB. 2018. Asian Development Outlook: *How Technology Affects Jobs*. Manila). In Sri Lanka, technology-led displacement is expected to occur, particularly for entry-level and mid-skill jobs in information technology, business process outsourcing, and the finance sector. International Labour Organization. 2019. [Future of Work in Sri Lanka: Shaping Technology Transitions for a Brighter Future](#). Colombo and Malé.

¹⁹ Government of Sri Lanka. 2019. [National Policy Framework: Vistas of Prosperity and Splendour](#). Colombo. (accessed 25 May 2020).

²⁰ The net enrollment rate in 2018 was 99.1% in primary, 98.5% in lower secondary, and 81.4% in upper secondary education. Gender parity has been achieved at the primary and lower secondary levels, but in upper secondary education, 107 girls are enrolled for every 100 boys. [UNESCO Institute for Statistics](#) (accessed 4 August 2020).

employment potential but also the pathways to tertiary education and further training. The RBL program will address the following issues:

- (i) **Education not aligned with labor market needs.** There is a shortage of skilled labor in the industry and services sectors, and new labor market entrants lack 21st century skills and other critical skills. This translates into a high youth unemployment rate of 21.4% (17% among males and 30% among females aged 15–24 years) against a national average of 4.4%. The percentage of youth not in employment, education, or training is 22% (29% for females, 14.4% for males).²¹
- (ii) **Inadequate student enrollment in subjects with higher employment potential.** Labor market demand for graduates in engineering, information and communication technology, and medicine is high, but low for arts graduates.²² Yet only about a third of upper secondary students were enrolled in science and technology streams in 2018.²³ Access to the most employable subjects (STMC) is currently limited. Only 36% of schools with General Certificate of Education Advanced Level ('A' Level) streams offer science, technology, engineering, and mathematics (STEM) subjects.²⁴
- (iii) **Low participation in science, technology, mathematics, and commerce among girls.** Of all females enrolled in 'A' Level streams in 2018, 52% were in arts, 22% in science, 6% in technology, and 19% in commerce, while male enrollment was 32% in arts, 25% in science, 18% in technology, and 23% in commerce (footnote 23). The tendency of female students to prefer the arts stream diminishes their employability potential.
- (iv) **Poor learning outcomes in secondary education.** National examinations and international assessments show low scores.²⁵ The failure rate in the 2019 General Certificate of Education Ordinary Level ('O' Level) examinations was 26%, and 38% in the 'A' Level exams, going up to 63% for 'A' Level mathematics.²⁶ Challenges in quality can be attributed to (a) curricula and pedagogy that do not support students to think critically and apply what they have learned; and (b) the assessment system, which encourages rote learning rather than analytical skills.
- (v) **Underperformance and higher dropout among boys.** In 2019, 28% more girls sat for the 'A' Level exams than did boys, while the pass rate for girls was 20 percentage points higher than that for boys (footnote 26).
- (vi) **Inequities.** The COVID-19 lockdown has led to learning losses among children from disadvantaged communities, highlighting rural–urban disparities in access to digital education (para. 2). Many teachers lack experience in such approaches.
- (vii) **Persistent sector management gaps.** Despite the government's previous efforts to strengthen education governance, subnational education authorities and school principals need further support in governance and instructional leadership.²⁷ Although the school funding system redistributes funding to poorer provinces with lower education outcomes, public spending on education remains skewed toward urban

²¹ Department of Census and Statistics. 2019. [Sri Lanka Labour Force Survey Annual Report 2018](#). Colombo.

²² ADB and International Labour Organization. 2017. [Sri Lanka: Fostering Workforce Skills Through Education—Employment Diagnostic Study](#). Manila and Geneva.

²³ ADB. 2020. [Completion Report: Sri Lanka—Education Sector Development Program](#). Manila.

²⁴ The remaining schools offer arts and commerce streams. MOE. 2018. [School Census Report 2017](#). Colombo.

²⁵ Grade 8 tests in mathematics based on Sri Lanka's national version of Trends in Mathematics and Science Study data in 2014 and 2016 show low scores by students, with a mean score of 23%. Government of Sri Lanka, MOE, National Education Research and Evaluation Centre. 2017. [Patterns and Trends in Achievement. TIMSS. National Assessment of Students Completing Grade 8 in Year 2016 in Sri Lanka](#). Colombo (accessed 5 August 2020).

²⁶ Government of Sri Lanka, Department of Examinations. 2019. [Statistics and School Performance Indices](#). Colombo (accessed 13 June 2020).

²⁷ ADB. 2013. [Report and Recommendation of the President to the Board of Directors: Democratic Socialist Republic of Sri Lanka: Education Sector Development Program](#). Manila.

schools.²⁸ Fragmented monitoring and evaluation systems hamper sector planning and monitoring.

5. The program will tackle these challenges, drawing on global best practices and evidence to enhance key skills and competencies, and promote student interest in STEM disciplines. Inquiry-based approaches in teaching and learning support the development of higher-order competencies,²⁹ better academic performance,³⁰ and improved science literacy skills.³¹ Reforming pedagogy results in an impact greater than the equivalent of an additional half-year of “business-as-usual” schooling.³² Remedial programs, to be supported by the program for students who may have missed out on schooling, also improve learning outcomes³³ and keep students from dropping out of school.³⁴ Experience elsewhere demonstrates the need to align assessments with curriculum reform, and not just information recall.³⁵ Reforms related to curricula, assessment, and pedagogy have also been linked with promoting student interest in science and technology, especially pedagogical practices such as hands-on learning, practical, and inquiry-based approaches.³⁶

6. **Justification for intended public interventions.** The form of public intervention under the RBL program will be financing, with some support to education regulations, norms, and minimum quality standards. Public intervention to address these issues is justified: 90% of schools are public schools, and 95% of all Sri Lankan students³⁷ attend public schools. Therefore, public interventions are the only way to reach high coverage and ensure the sustainability of education reforms. While the RBL program has not engaged specifically with the private sector, assessments during program preparation showed that the RBL program is suitable for public, private, or mixed provisions. This is because the RBL program framework is built on critical

²⁸ Provincial schools run by provincial education authorities account for 95% of schools and 65% of total general education expenditure. National schools, mostly in urban areas and run by MOE, account for 5% of schools and 35% of expenditure.

²⁹ L. Darling-Hammond et al. 2020. Implications for Educational Practice of the Science of Learning and Development. *Applied Developmental Science*. 24 (2). pp. 97–140.

³⁰ J. L. Zafra-Gómez, I. Román-Martínez, and M. E. Gómez-Miranda. 2015. Measuring the Impact of Inquiry-Based Learning on Outcomes and Student Satisfaction. *Assessment and Evaluation in Higher Education*. 40 (8). pp. 1050–1069.

³¹ C. Gormally et al. 2009. [Effects of Inquiry-Based Learning on Students' Science Literacy Skills and Confidence](#). *International Journal for the Scholarship of Teaching and Learning*. 3 (2). Article 16.

³² D. K. Evans and F. Yuan. 2017. Economic Returns to Interventions that Increase Learning. In *World Development Report 2018*. Washington, DC: World Bank.

³³ E. Gutiérrez and R. Rodrigo. 2014. Closing the Achievement Gap in Mathematics: Evidence from a Remedial Program in Mexico City. *Latin American Economic Review*. 23 (14). pp. 1–30; and R. Lakshminarayana et al. 2013. The Support to Rural India's Public Education System (STRIPES) Trial: A Cluster Randomised Controlled Trial of Supplementary Teaching, Learning Material and Material Support. *PLoS ONE*. 8 (7). e65775.

³⁴ C. Tukundane et al. 2015. A Review of Enabling Factors in Support of Intervention Programmes for Early School Leavers: What Are the Implications for Sub-Saharan Africa?. *Children and Youth Services Review*. 52. pp. 54–62.

³⁵ World Bank. 2018. [World Development Report: Learning to Realize Education's Promise](#). Washington, DC.

³⁶ M. R. Logan and K. R. Skamp. 2013. The Impact of Teachers and Their Science Teaching on Students' “Science Interest”: A Four-Year Study. *International Journal of Science Education*. 35 (17). pp. 2879–2904; S. Swarat, A. Ortony, and W. Revelle. 2012. Activity Matters: Understanding Student Interest in Science. *Journal of Research in Science Teaching*. 49 (4). pp. 515–537.

N. B. Dohn. 2013. Upper Secondary Students' Situational Interest: A Case Study of the Role of the Zoo Visit in a Biology Class. *International Journal of Science Education*. 35 (16). pp. 2732–2751; and J. C. Turner, H. Z. Kackar-Cam, and M. Trucano. 2015. Teachers Learning How to Support Student Interest in Mathematics and Science. In K. A. Renninger, M. Nieswandt, and S. Hidi, eds. *Interest in Mathematics and Science Learning*. Washington, DC: American Educational Research Association.

³⁷ The so-called “international schools” are not included because some of them are geared toward foreign or international examinations. Government of Sri Lanka, MOE. 2020. *Sri Lanka: General Education Sector Development Plan 2020–2025 (revised May 2020)*. Colombo.

elements of reform applicable to the whole country. All students from private schools, special schools, and *Privena* schools will also go through the new national ‘O’ Level and ‘A’ Level examinations, and will therefore use the new revised curricula and the new assessment system. It is assessed that the program interventions will not crowd out private sector participation, as the changes will also benefit private schools.

7. **Modality of financing.** The RBL modality is appropriate because it focuses on large-scale system reforms and critical results, rather than specific transactions and expenditures, and is able to leverage resources from the government and its development partners around a set of common results.

8. **Beneficiaries.** The primary beneficiaries are current and future secondary students and teachers, principals, education officials, and pedagogical advisors. Students will benefit from expanded access to more relevant and better secondary education, which will expand their options for gainful employment or post-secondary education. Teachers will acquire enhanced teaching skills, while school principals and subnational education officials will benefit from the support for managerial and educational leadership. By 2026, program-supported reforms will benefit about 953,000 students (503,000 female and 450,000 male) each year. They will also have equipped 47,853 teachers (31,583 female and 16,270 male) with skills that will benefit successive generations of students.

9. **Poverty and inequality reduction.** The program will provide beneficiaries, especially those in rural and underserved areas, with expanded access to fields of study that offer better opportunities for livelihood, income, or further study.

10. **Gender impact.** The program will (i) promote girls’ access to science and technology streams with higher labor market relevance through school development plans; (ii) lower the dropout rates among boys through school development plans; (iii) ensure the gender-sensitivity of curricula and all instructional guides and materials; (iv) promote leadership and management training for female principals and subnational education officers; and (v) incorporate sex-disaggregated indicators in management and monitoring systems and institutionalize gender-specific analysis related to participation and educational outcomes.

11. **Consultations with program stakeholders.** Consultations were held with (i) the Ministry of Education (MOE) and provincial education authorities (PEAs); (ii) parents, community representatives, students, and teachers in selected schools; (iii) the National Institute of Education (NIE) and its subsidiaries (teacher training colleges); (iv) the Department of Examinations (DOE); (v) the Department of Census and Statistics; (vi) the Ministry of Finance; (vii) development partners; and (viii) selected civil society organizations working in basic education. The disbursement-linked indicators (DLIs) and the program action plan (PAP) were developed in consultation with MOE, NIE, DOE, and the PEAs, and targets set at mutually agreed levels.³⁸

2. Adequacy

12. **Effectiveness.** The major challenges in Sri Lanka’s secondary education (para. 4) are (i) poor learning outcomes and non-responsiveness to labor market requirements; (ii) high repetition and dropout, and low completion rates among secondary students in STEM streams; and (iii) institutional and capacity gaps in the system. Assessments indicate that the RBL program design

³⁸ Program Action Plan (accessible from the list of linked documents in Appendix 2 of the report and recommendation of the President).

and interventions (para. 1) will be effective in tackling the problems and achieving the expected outcomes and outputs.

13. **Efficiency.** The RBL will increase efficiency in three ways:

- (i) **Internal efficiency of the education system.**³⁹ The current secondary education system faces inefficiencies especially at 'O' Level and 'A' Level. The centrality of the 'O' Level and 'A' Level examinations to the education system, combined with high failure rates, means that large numbers of students have to re-sit both examinations because passing them is the only way to enter tertiary education.⁴⁰ The RBL will address this inefficiency directly through the incentives embedded in the DLIs for the new assessment system, curricula, and pedagogy, so that over the course of the program cycle, the secondary education system will have incremental efficiency gains.
- (ii) **Organizational efficiency.** The RBL will also improve organizational efficiency. Through output 3, having better planning at provincial level, securing appropriate educational budgets, and ensuring effective expenditure for well-defined targets will lead to incremental gains in efficiency.
- (iii) **Efficiency linked to disparity reduction.** The program will boost efficiency by reducing disparities between national or urban schools and provincial or rural schools. Inequality is inefficient, and the associated costs and consequences of inequality are measurable. A study shows that if completion of the first cycle of secondary education were universal, there would be a jump in household income for all countries from 5% to 25%.⁴¹

14. **Sustainability.** The RBL results are judged to be sustainable in the medium term because the changes brought about by the program are systemic and not easily reversible. The program's sustainability will also depend on the availability of resources and the government's commitment to making it work. While government spending on education as a share of gross domestic product (GDP) is lower than in other middle-income countries, the government has gradually stepped up allocations and spending on education.⁴² Education expenditure has increased steadily since 2010, regardless of the fiscal situation and deficit. Since 2014, education expenditure as a percentage of public spending has been consistently above 10%. The planned gradual increases in budget for secondary education along with strong projected budget execution rates in education make it likely that recurrent costs will be sustained after program completion.

15. Sustainability also depends on the quality and efficiency of expenditure. The RBL program includes activities designed to build the capacity of educational institutions and improve financial efficiency, such as supporting MOE and PEAs in strengthening the budgeting process and applying program-based budgeting with a view to further improving budget execution. All these factors will make the program sustainable.

3. Financial and Economic Analysis

³⁹ UNESCO defines repetition rate, survival rate, coefficient of efficiency, years-input per graduate, percentage of repeaters, promotion rate by grade, and dropout rates as indicators to measure the internal efficiency of education systems. UNESCO Institute of Statistics. [Glossary](#).

⁴⁰ Cohort analysis from 2013 to 2018 by the ADB team in 2019 showed that between grades 11 to 12, some 40% of students (48% boys, 32% girls) either drop out or fail the 'O' Level examinations.

⁴¹ United Nations and Economic Commission for Latin America and the Caribbean. 2018. [The Inefficiency of Inequality](#). Santiago.

⁴² Between 2010 and 2018, education spending as a share of GDP increased from 1.72% to 2.11%.

16. Sri Lanka faces significant economic challenges, including a slowdown in economic activity since 2015, a large fiscal deficit, high debt levels, and inadequate flow and stock of human capital, which all limit opportunities for achieving higher growth. While Sri Lanka's economy has shifted employment from agriculture to industry and service sectors between 1990 and 2019, there has been little growth in complex service and industrial sector activities which are key to placing Sri Lanka on a higher development trajectory. Although service and industrial sectors comprise a dominant share of the economy, activities in both sectors are concentrated in lower-value activities such as those in wholesale and retail trade, food and beverages, and textiles and garments. Moreover, and despite growing demand, Sri Lanka faces a shortage of qualified workers needed to transition to a knowledge-based economy, including those trained in disciplines with high economic relevance such as STEM and those with 21st century skills.

17. The economic rationale for the program stems primarily from three channels. These are (i) the *macroeconomic returns* to educational attainment and quality; (ii) *labor market returns* to higher educational attainment, market-relevant skills, and 21st century skills; and (iii) the *high opportunity costs* Sri Lanka faces if it fails to invest strategically in its future workforce, and given the changing skill demands and its aging population.

18. **Economic growth.** Macroeconomic growth models have well established education as a key determinant of a country's income level and long-run economic growth rates.⁴³ The better educated the workforce, the greater a country's capacity to innovate and to leverage new technologies for growth. Furthermore, recent empirical research has also shown that it is the quality of education that matters more for growth, rather than mere schooling. One study shows that cross-country differences in long-run growth rates can be explained by differences in cognitive skills, as measured by standardized test scores in math and science. Moreover, this relationship between cognitive skills and economic growth is significantly greater among low-income countries than high-income ones.⁴⁴

19. The program supports strategic and timely investments in improving the quality of education and ensuring continuity in education access and learning, which will be crucial to Sri Lanka's ability to recoup its economic losses, accelerate economic growth, and reduce the debt burden as a share of GDP in the long run. A well-established stylized fact is that diversifying the economic base and moving from low-value to high-value activities leads to economic growth (footnote 17). Another stylized fact is that a narrow economic base increases vulnerability to shocks and undermines long-term growth prospects.⁴⁵ Sri Lanka's economic base, as indicated by its export basket, is narrow and concentrated in low-value goods (such as garments, tea, and rubber products).⁴⁶ Sri Lanka also relies heavily on garment exports, remittances, and tourism earnings for foreign revenue.⁴⁷ It has not diversified its economic base over time unlike other middle-income countries. For example, in an index of economic complexity, Sri Lanka ranked 77th out of 133 countries in 2017, compared with 75th in 2007. By contrast, Viet Nam ranked 57th

⁴³ N. G. Mankiw, D. Romer, and D. N. Weil. 1992. [A Contribution to the Empirics of Economic Growth](#). *The Quarterly Journal of Economics*. 107. pp. 407–437; P. Romer. 1990. [Endogenous Technological Change](#). *Journal of Political Economy*. 98; and R. Lucas. 1988. [Journal of Monetary Economics: On the Mechanics of Economic Development](#). 22. pp. 3–42.

⁴⁴ E. Hanushek and L. Woessmann. 2015. [Knowledge Capital of Nations](#). Cambridge, Massachusetts: MIT Press.

⁴⁵ Organisation for Economic Co-operation and Development. 2019. [Aid for Trade at a Glance 2019: Economic Diversification and Empowerment](#). Paris.

⁴⁶ Garments alone accounted for 44.7% of total merchandise exports in 2019. Central Bank of Sri Lanka. 2020. [Annual Report 2019](#). Colombo.

⁴⁷ These three sources alone account for 60.3% of Sri Lanka's foreign exchange inflows and are critical to meet its foreign exchange requirement for debt servicing and repayment needs. Harvard. Atlas of Economic Complexity. [Sri Lanka](#) (accessed 21 August 2020).

in 2017 and 67th in 2007.⁴⁸ A competitive workforce with market-relevant and high-level skills, especially in STEM disciplines, can support economic diversification and complex economic activities critical for Sri Lanka's growth. A productive workforce and stronger economic growth will also be key to reversing the decline in government revenue collection, improving the country's fiscal situation, and reducing its debt-to-GDP ratio in the long run.

20. **Labor market returns.** Positive private returns to educational attainment in Sri Lanka across all education levels present a solid rationale for investing in education. Data from the 2012 Household Income and Expenditure Survey reveals that workers that have completed 'O' Level earn 77%–91% more on average than those without schooling. For workers with 'A' Level, this figure ranged from 115% to 146%. In contrast, those with lower secondary education were likely to earn 28%–40% more on average than those without education. In particular, the returns to completing 'O' Level and 'A' Level are significantly higher than those for basic education (grades 1–9).⁴⁹

21. The rate of return to 'A' Level and higher education in Sri Lanka has declined, which suggests that the system is not producing graduates with the requisite skills.⁵⁰ While this decline could theoretically be the result of a disproportionate increase in the supply of more educated workers, it is more likely to indicate a mismatch between skills supply and demand. Employer surveys denote a lack of market-relevant skills among workers regardless of their level of education (footnote 50). This is also indicative of secondary, and eventually, university students not choosing fields of study that are in greater demand in the labor market. The program is expected to improve employment opportunities and incomes of secondary graduates in two ways: (i) by equipping students with higher-order competencies as well as market-relevant skills to qualify them for better-paying jobs; and (ii) by enhancing students' readiness for and improving pathways to higher education, including in STMC fields that offer greater employment potential and higher income. Private wage returns to cognitive as well as soft skills have been documented in various countries. Higher cognitive skills are associated with increased returns across the full spectrum of an individual's working life, and not just in the early stages of labor market participation.⁵¹ Economic returns from soft skills have also been documented in countries such as Mexico,⁵² Peru,⁵³ and Sweden.⁵⁴

22. Increased uptake of and graduation from STMC streams are likely to boost employment probability (para. 4). Since the program seeks to strengthen STMC curricula, teaching, and assessments, and to attract more students to those subjects that have greater labor market potential, it can add significant economic value.

23. **Changing skill demands and opportunity costs.** The economic value of investing in quality education and 21st century skills is even higher with the onset of the fourth industrial

⁴⁸ Harvard. Atlas of Economic Complexity. [Viet Nam](#). (accessed 21 August 2020).

⁴⁹ H. Aturupane. 2017. Public Investment in Education: Benefits, Challenges, and Opportunities. In N. S. Cooray and S. Abeyratne, eds. *Decentralization and Development of Sri Lanka Within a Unitary State*. Singapore: Springer.

⁵⁰ World Bank. 2017. *Sri Lanka Education Sector Assessment: Achievements, Challenges, and Policy Options*. Washington, DC.

⁵¹ E. Hanushek et al. 2015. *Returns to Skills Around The World: Evidence From PIAAC*. *European Economic Review*. 73 (C). pp. 103–130.

⁵² R. Campos-Vazquez. 2018. Returns to Cognitive and Non-Cognitive Skills: Evidence for Mexico. *Applied Economics Letters*. 25 (16). pp. 1153–1156.

⁵³ J. Diaz et al. 2012. *Does Perseverance Pay as Much as Being Smart? The Returns to Cognitive and Non-Cognitive Skills in Urban Peru*. Washington, DC: World Bank.

⁵⁴ E. Lindqvist and R. Vestman. 2011. The Labor Market Returns to Cognitive and Non-Cognitive Ability: Evidence from the Swedish Enlistment. *American Economic Journal*. pp. 101–128.

revolution and its demand for different sets of skills. Research across several countries shows that new technologies are likely to displace routine and low-skill jobs that can be easily automated, but will also create new jobs. However, these new jobs are likely to be concentrated in the nonroutine and cognitive category, and demand greater technical and higher-order cognitive skills. Nonroutine jobs also demand greater soft skills. An analysis of four economies in developing Asia shows that real wages in jobs with intensive nonroutine cognitive tasks grew twice as fast as wages in manual jobs between 2000–2015, suggesting a rising premium for high-level, nonroutine cognitive skills.⁵⁵ Failure to prepare the workforce adequately to meet changing skills needs could therefore lead to high opportunity costs in terms of individual and aggregate earnings.

24. **Demographic shifts.** Sri Lanka’s aging population and the resulting increase in the dependency ratio further calls for investment in the education sector to strengthen its human capital base. It is estimated that GDP would be more than 7% lower in 2030 because of slower growth of the working-age population.⁵⁶ It is imperative to equip youth with relevant skills that they can adapt to future labor market needs and that will contribute to overall economic growth.

25. **Improving equity in education and labor market outcomes.** The program is likely to contribute to improving equity in access to quality secondary education, thereby improving labor market outcomes. In general, ‘O’ Level and ‘A’ Level completion rates tend to be significantly higher among those from wealthier households.⁵⁷ The program’s focus on provincial schools in rural areas will enable these schools—which many poorer children attend—to deliver better-quality and more relevant education for students in the STMC streams.

26. Public investment in education is not without trade-offs and may come at the expense of spending on other areas such as social protection and immediate economic recovery from the impacts of COVID-19. The expected long-term gains from the program are likely to outweigh the short-term opportunity costs. Critical reforms to enhance quality and relevance of education today will yield higher productivity, with implications for long-term economic recovery (para. 18). A highly skilled and agile workforce is also more likely to adapt to the changing requirements of the global economy and to spur the innovation needed to transition to a higher growth path (para. 19). Sri Lanka was already facing challenges of poor education quality and an inadequate workforce combined with a shrinking labor force. The country cannot afford to exacerbate the challenges that existed before the COVID-19 outbreak. Thus, strengthening investment in education to compensate for the loss in learning and to advance human capital development is vital if Sri Lanka is to recover from its economic slowdown and achieve higher economic growth in the long term.

4. Implementation Arrangements

27. **Program implementation and management.** The program team will use government systems to implement the program. MOE will be the executing agency, and several of its entities (NIE, Department of Educational Publications, DOE, and nine PEAs) will be the implementing

⁵⁵ The four economies were India, Indonesia, Thailand, and Viet Nam. ADB. 2018. [Asian Development Outlook 2018: How Technology Affects Jobs](#). Manila.

⁵⁶ The share of the population aged 65 or above was 10% in 2015 and is expected to rise rapidly over the next few decades. This is projected to raise the country’s dependency ratio to 76% by 2050 and strain economic resources. ADB. 2017. [Sri Lanka Employment Diagnostic Study: Fostering Workforce Skills Through Education](#). Manila.

⁵⁷ Data from the 2012 Household Income and Expenditure Survey show that ‘O’ Level and ‘A’ Level completion rates among those in the top income decile were between 50%–60%; among those in the poorest income decile, the completion rate was merely 20%. ADB. 2017. [Sri Lanka Employment Diagnostic Study: Fostering Workforce Skills Through Education](#). Manila.

agencies. A high-level program steering committee will provide overall program oversight and policy guidance, and facilitate coordination. The Ministry of Finance will ensure adequate budget appropriation and smooth flow of funds. Program implementation units in each of the nine PEAs will formulate and implement the provincial program plans. At the central level, the Sector Monitoring and Technical Support Unit (SMTSU) will ensure timely and effective program planning, management, coordination, monitoring, and reporting.⁵⁸

28. An independent verification agent will be appointed in agreement with MOE and ADB. MOE will hold annual and midterm reviews of program activities with the participation of NIE, DOE, PEAs, and other stakeholders, to assess program performance against the DLIs, the PAP, and the program implementation document. Upon achievement of the DLIs, as verified by the Independent Verification Agent, funds will be disbursed. A periodic fiduciary review will supplement the annual review process. The midterm review, planned in the 3rd year of the program, will include a review of DLI targets based on implementation experience and performance. The SMTSU will also organize quarterly meetings to review DLI progress, identify and adopt corrective actions as required, and share the meeting minutes with stakeholders, including ADB.

C. Managing Risks and Improving Capacity

29. **Risks and mitigation.** The linked document on integrated risk assessment and mitigating measures summarizes and consolidates all relevant key risks and actions, as well as risk-mitigating measures.⁵⁹ Overarching risks include (i) the risk of poor coordination in implementation and administrative arrangements between different entities, which could lead to delays in DLI achievement; (ii) the large scale of teacher training required, where any slip-up could lead to delays and affect the whole system; and (iii) the risk that budget releases are not fully in line with budget allocations and the risk of budget cuts, which may affect program results. The risks will be mitigated by ensuring (i) close monitoring and good coordination by the SMTSU; (ii) close monitoring of the conduct of teacher training; and (iii) the inclusion of budget predictability as a loan covenant to ensure that sufficient resources are released in a timely manner to spending units for the implementation of the program. Mitigation measures for other risks, as well as activities to strengthen capacity, are also built into the program design and are described in the PAP. Risks linked to the behavior of teachers, parents, students, and other stakeholders will be addressed in communication and/or media campaigns, school development plans, and interventions to strengthen subnational educational leadership. Without any mitigation measures, the overall RBL program risk is assessed to be *substantial*. With the mitigation measures, the overall program risk is assessed as *low*.

⁵⁸ Program Implementation Document (accessible from the list of linked documents in Appendix 2 of the report and recommendation of the President).

⁵⁹ Integrated Risk Assessment and Mitigating Measures, and Program Fiduciary Systems Assessment (both accessible from the list of linked documents in Appendix 2 of the report and recommendation of the President).