



Sri Lanka: Science and Technology Human Resource Development Project

Project Name	Science and Technology Human Resource Development Project								
Project Number	50275-002								
Country / Economy	Sri Lanka								
Project Status	Active								
Project Type / Modality of Assistance	Loan								
Source of Funding / Amount	<table border="1"><tr><td colspan="2">Loan 3698-SRI: Science and Technology Human Resource Development Project</td></tr><tr><td>Ordinary capital resources</td><td>US\$ 83.02 million</td></tr><tr><td colspan="2">Loan 3699-SRI: Science and Technology Human Resource Development Project</td></tr><tr><td>Concessional ordinary capital resources lending</td><td>US\$ 61.98 million</td></tr></table>	Loan 3698-SRI: Science and Technology Human Resource Development Project		Ordinary capital resources	US\$ 83.02 million	Loan 3699-SRI: Science and Technology Human Resource Development Project		Concessional ordinary capital resources lending	US\$ 61.98 million
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Ordinary capital resources	US\$ 83.02 million								
Loan 3699-SRI: Science and Technology Human Resource Development Project									
Concessional ordinary capital resources lending	US\$ 61.98 million								
Strategic Agendas	Environmentally sustainable growth Inclusive economic growth								
Drivers of Change	Gender Equity and Mainstreaming Governance and capacity development Partnerships Private sector development								
Sector / Subsector	Education / Tertiary								
Gender	Gender equity theme								
Description	The project will support the government in developing the applied science and technology faculties in four universities to nurture a new breed of technology-oriented graduates equipped with market relevant skills and entrepreneurial spirit. It will address lack of financing for priority degree programs, which are in high demand from students and industry. The project will provide innovative and industry-relevant technology education and research facilities, help quality curriculum design and academic staffing aligned with international standards, and provide competitive grant scheme and capacity development opportunities.								

Project Rationale and Linkage to Country/Regional Strategy

Sri Lanka has recorded steady economic growth in recent years and will soon become an upper middle-income country, reaching \$4,000 gross national income per capita. To achieve higher incomes and better standards of living, the government envisions transforming to a knowledge-based economy by 2025. Investment in human capital is prioritized for economic diversification and enhanced productivity. Sri Lanka ranked 73rd in the Human Development Index, outperforming other lower middle-income countries, and this is attributed to good access to education. Challenges remain in quality of learning, particularly in science, technology, and engineering subjects, as well as relevance to the labor market, especially in the face of rapid technological changes. Higher education plays an instrumental role in producing a future-ready labor force, but Sri Lanka's higher education system is facing several challenges.

Limited access. Higher education opportunities are limited. The gross enrollment rate is 18.9%, which is far lower than that of the upper middle-income country average of 50.7%. Increasing demand for higher education is evident from steep competition for public university admission, the large number of external degree program students, and increasing numbers of students seeking private higher education. Disciplines offered are largely skewed toward liberal arts, social studies, and management, and less than 20% of graduates are from science and engineering subjects. As a result, less than four science, technology, and engineering graduates are available for every 100 age cohort in Sri Lanka, compared with over 15 in Malaysia and 30 in the Republic of Korea. Private higher education is focusing on management and information technology (IT), where capital investment is moderate. The main constraint is high upfront capital investment requirements for higher education in science, technology, and engineering disciplines.

Quality concerns. Research and practical learning in science, technology, and engineering are limited because of lack of laboratory facilities, researchers, and capital investment. Lack of qualified academic staff constrains quality of teaching, learning, and research. There were 5,440 academic staff in 2016, but less than 50% have a doctor of philosophy degree. Recruiting and retaining qualified academic staff is difficult because better working conditions (e.g., salary and organizational culture) exist in the private sector and overseas. The vacancy rate at universities was estimated to be 28% in 2014. The pedagogy should transform from an input-based approach to outcome-based education and student-centered learning to foster critical thinking and problem-solving competencies as well as other modern job market requirements such as entrepreneurship and leadership, teamwork and collaboration, and communication.

Poor relevance to job market. Higher education graduates are not well prepared for jobs as the existing programs fail to equip them with job-relevant skills or competencies. Degree programs are more theory-oriented and lack application or practical use of knowledge and skills. Only 32% of employers in Sri Lanka are satisfied with first-time job seekers from university or other higher education institutions. The job placement rate among state university graduates is poor (66% in 2017), which is largely driven by high unemployment among liberal arts and social science graduates (46%). Job placement rates are high for graduates in IT (92%), engineering (92%), and science (83%). Even among science, technology, and engineering graduates, cognitive and noncognitive skills, such as analytical thinking, problem solving, communications, and teamwork, need further improvement as evidenced in the skills gaps among current industry managers. Flexibility and ability to continuously learn and upgrade skills are the competencies most needed for technology graduates to survive and lead the rapid technological changes.

Gender dimension. Over 60% of undergraduates are female students in Sri Lanka. However, female enrollment is more concentrated in liberal arts and social studies (82.4%) where unemployment is the highest. Gender parity in computer science or IT and technology faculties (50.4% and 45.6% female) is nearly achieved, and around 22.0% of engineering students are female. This is higher than the developed-country average. Encouraging more women to take technology disciplines will increase women's career opportunities in technical areas where wages are high. This would also help challenge stereotypical gender roles in the economy, and increase women's labor market participation in nontraditional areas. Opportunities in science, technology, and engineering education. Despite impressive employment outcomes, there were only 5,012 admissions for science, technology, and engineering in 2016, which is only 17.2% of total admissions. The main constraint is financing. The government expects that priority economic development initiatives, like the ColomboTrincomalee Economic Corridor, would generate 580,000 incremental jobs in manufacturing between 2020 and 2032, and one of the constraints would be the lack of a skilled workforce. Around 10%15% of such job opportunities would require advanced skills in technology.

Government initiatives. In response to the high demand for a technically-oriented workforce and the need for diversifying pathways for youth, the government introduced the technology stream to secondary education (grades 12 and 13) in 2013. In 2017, more than 28,000 students were enrolled in over 370 schools. The Asian Development Bank (ADB) supported this initiative through its Education Sector Development Program. Since 2015, around 7,000 technology stream students have become qualified for higher education annually. The government selected 11 public universities to open new technology faculties to offer higher education for technology stream students. In 2016, 2,016 students were enrolled. In 2015, the government decided to establish an engineering faculty in the University of Sri Jayewardenepura, in addition to those at the five existing universities. The government has already provided financing to several universities to get the technology programs started, and the World Bank and Abu Dhabi Fund support several universities. The government requested ADB support for four universitiesKelaniya, Rajarata, Sabaragamuwa, and Sri Jayewardenepurawhich lack financing to implement new technology programs and are not supported by other development partners.

Project focus. In addition to very much needed modern facilities and qualified faculty members, these middle-tier universities should introduce new practices in pedagogy, student guidance, and industry linkages. Lessons from previous development partner higher education support indicate that developing new technology faculties in these universities will result in opportunities to demonstrate strong industry linkages, employment focus, and other innovative approaches, avoiding the accumulated inertia of past academic bureaucracy. Such approaches would set examples for other faculties within the universities to follow. A competitive grant scheme will be used to encourage collaborations with industry and international university partners.

Alignment with country strategy. Increasing access to higher education, especially with technology focus and industry demand, is a priority in the government's medium-term development strategy (footnote 3). The project is fully aligned with ADB's country partnership strategy, 20182022 for Sri Lanka, and contributes to pillar 1 (promoting economic diversification and productivity enhancement) by upgrading human capital. The project is included in the country operations business plan 20182020. The project will support the government in preparing a new higher education project proposed for 2021 (output 5).

ADB's value addition. ADB support brings additional value beyond infrastructure by (i) adopting the latest facility design features for technology education, green building, and renewable energy solutions; (ii) supporting climate-proofing design in infrastructure to address vulnerability to climate change risk, especially floods from increased unpredictable precipitation and storm surges; (iii) mobilizing technical experts to support academic program design; (iv) supporting internationally recognized accreditation; and (v) including industry collaboration, international university partnerships, and faculty staff capacity development.

Impact	An educated and knowledgeable labor force for accelerated economic growth developed (Higher Education Development Strategy)
Project Outcome	
Description of Outcome	Access to employment-oriented higher technology education improved
Progress Toward Outcome	To carry out a Feasibility Study on New Higher Education Projects to be Implemented, the Submission 2 was sent to ADB on 08th Sep 2022 and waiting for ADBs NOL for opening of Financial Proposal. Construction of proposed building complex to establish Laboratories for the Department of Anatomy, Physiology and Biochemistry for the Faculty of Medicine, University of Moratuwa has being included under the output 5 of the Project Scope and a Cabinet Approval has been received. Civil Works - Technical Evaluation Committee has been appointed. - The Draft Bid Document has been presented to the TEC on 4th October 2022 Project Management Consultancy -REOI published on Daily news, ADB CMS and STHRD website on 11th October 2022. -Deadline for EOI submission is 25th October 2022 Source file: Ref Document of Monthly Progress Review meeting October 2022
Implementation Progress	
Description of Project Outputs	Innovative technology learning and research environment established Quality and industry-relevant higher technology education programs implemented Industry linkages and international collaborations strengthened Faculty management capacity strengthened New higher education project preparation supported

Status of Implementation Progress (Outputs, Activities, and Issues) as of 31st May 2022 (19th SCM report [Page Number 41]):
Seven EOIs have been received and three consultancy firms were shortlisted for issuing of RFP. RFPs were issued to selected three consultancy firms to complete the feasibility study. Received Proposals from three consultancy firms.
as of 30.06.2022 (Project performance report : [indicate page number]):
Not yet started.
as of 15 Oct 2022.
All 4 Civil work contracts have been awarded. Construction work in progress.
University of Moratuwa- Construction on Laboratory Complex for Faculty of Medicine. TEC is finalizing the bidding documents for call for tenders
Project management consultants for four infrastructure development projects (UOK, SUSL, RUSL and SJP) Design Review Material Approvals, Site Supervision Work in progress
as of 15 Oct 2022.
KE introduced Industry Interaction Cell for Computing and Technology.
SJ established Center for Entrepreneurship and Innovation under Faculty of Management Studies and Commerce which is available for all students and faculty members of SJ.
RJ established a technology incubation center at Faculty of Agriculture, and Faculty of Technology is expected to strengthen industry collaboration and innovation.
SB has University Business Linkage Cell and Faculty of Technology can strengthen industry collaboration and innovation once new building construction, student enrollment and academic/non-academic staff recruitment are in place.
Update as of 15 Oct 2022:
SB-2, RJ-1 curricula developed
KE, SB, RJ consultants appointed for some curriculum development. And continuing the process of appointing consultants.
SJ-Planning to conduct Training programs with industry participation for the development of curricula
Update as of 15 Oct 2022:
Work related to Necessary document preparation, Mapping module and programme outcomes, appointing external examiners, holding industry committee meetings, preparation of SER are in progress in all three technology faculties KE, SB and RJ.
SJ- In the process of Applying for IESL
Update as of 15 Oct 2022:
KU filled Cadre-36 Staff with PhD-20 (56% PhD, 47% female),
SUSL filled Cadre-23 Staff with PhD-05 (23% PhD, 36% female),
RUSL filled Cadre-38 Staff with PhD-13 (35 % PhD, 50% female),
USJ filled Cadre-49 Staff with PhD-23 (47% PhD, 24% female).
Update as of 15 Oct 2022:
Online/blended modes of delivery of undergraduates programmes have already been implemented in the all four faculties
Update as of 15 Oct 2022:
1st round proposals SJ Six industry /university / partnerships KE Three Industry /university partnerships RJ One industry/university partnership have been approved Agreements signing are in progress.
2nd round proposals
KE-Three industry/ university partnerships,
RJ- Four Industry /university Partnerships have been approved.
SJ-Four university/International/Local partnerships,
SB-Two University//International/Local partnerships
1st Round- RJ- One University Partnership, KE-One University partnership approved.
2nd Round-
KE Two local university partnerships
Update as of 15 Oct 2022:
SJ Three local and one international university partnerships
SB One local and One international university partnerships
RJ One local and One international university partnerships have been approved.
3rd Round-SJ-Two local university partnerships
Update as of 15 Oct 2022:
Implementation Process ongoing
Update as of 15 Oct 2022:
Master Training Plan has been updated. Short term trainings programs are conducted accordingly
No of Training Programs Conducted-KE-16, SB-9, SJ-4, RJ-5
Update as of 15 Oct 2022:
Proposal approval process completed and implementation is ongoing
Preparation is ongoing for a promotional video campaign for Sri Lankan Technology faculties.

Geographical Location	Nation-wide
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Safeguard Categories	
Environment	B
Involuntary Resettlement	C
Indigenous Peoples	C

Summary of Environmental and Social Aspects	
Environmental Aspects	The project is categorized B for environment, as it will involve civil works for faculty buildings with location-specific, time-bound impacts during construction and requiring good waste and waste water management during operation of some laboratories.
Involuntary Resettlement	The project is categorized C for involuntary resettlement, as it has no involuntary resettlement impacts.
Indigenous Peoples	The project is categorized C for indigenous peoples as the proposed project does not have the potential to directly or indirectly affect the dignity, human rights, livelihood systems, or culture of indigenous peoples.

Stakeholder Communication, Participation, and Consultation	
During Project Design	The main stakeholders of the project are the Ministry of Higher Education and Highways, University Grants Commission, Ministry of Science Technology and Research, Ministry of Development Strategies and International Trade, Board of Investments, universities, private education providers, private and public sector employers, university students and their parents. Communities adjacent to the proposed faculties will also benefit from the new business that will be generated from the student influx. Key stakeholders were consulted to identify the nature of the development need, the availability of resources (such as land for infrastructure construction), and partner capacity. Further consultations will be held during project design stage, especially with female and male students, lecturers and education providers, employers, and civil society organizations.
During Project Implementation	During project implementation, the main stakeholders of the project are the Ministry of City Planning, Water Supply and Higher Education, University Grants Commission, Ministry of Science Technology and Research, Ministry of Development Strategies and International Trade, Board of Investments, universities (primarily University of Kelaniya, Rajarata University of Sri Lanka, Sabaragamuwa University of Sri Lanka and University of Sri Jayewardenepura), private education providers, private and public sector employers, university students and their parents. Communities adjacent to the proposed faculties will also benefit from the new business that will be generated from the student influx.

Business Opportunities	
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Consulting Services	MHECA will recruit the (i) construction supervision consultant to assist the PMU in reviewing the works contractors detailed designs, monitor construction, and facilitate payments; and (ii) external auditor. Individual consultants will be recruited to support project implementation, including experts on gender, university industry linkages, and quality assurance.
Procurement	The procurement plan includes (i) works contracts for faculty buildings; (ii) goods contracts for equipment and furniture for the PMU, PIU offices and faculty buildings at the universities, and vehicles for the PMU and universities; and (iii) services. Open competitive bidding (OCB) will apply to (i) works and goods contracts valued at least \$15 million and \$2 million, respectively, with international advertisements; (ii) works contracts valued from \$100,001 to \$14,999,999, and goods contracts valued from \$100,001 and \$1,999,999 with national advertisements; and (iii) services estimated above \$100,000. Requests for quotations will be sought for works, goods and services valued up to \$100,000.

Responsible ADB Officer	Jayasundara, Herathbanda
Responsible ADB Department	South Asia Department
Responsible ADB Division	Sri Lanka Resident Mission (SLRM)
Executing Agencies	Ministry of Education Ministry of Higher Education, Technology and Innovations

Timetable	
Concept Clearance	17 May 2018
Fact Finding	03 May 2018 to 11 May 2018
MRM	21 Jun 2018
Approval	30 Aug 2018
Last Review Mission	-
Last PDS Update	14 Dec 2022

Loan 3698-SRI

Milestones					
Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
30 Aug 2018	17 Jan 2019	04 Apr 2019	30 Jun 2024	-	-

Financing Plan		Loan Utilization			
	Total (Amount in US\$ million)	Date	ADB	Others	Net Percentage
Project Cost	103.02	Cumulative Contract Awards			
ADB	83.02	27 Sep 2023	62.71	0.00	76%
Counterpart	20.00	Cumulative Disbursements			
Cofinancing	0.00	27 Sep 2023	60.82	0.00	73%

Loan 3699-SRI

Milestones					
Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
30 Aug 2018	17 Jan 2019	04 Apr 2019	30 Jun 2024	-	-

Financing Plan		Loan Utilization			
	Total (Amount in US\$ million)	Date	ADB	Others	Net Percentage
Project Cost	61.98	Cumulative Contract Awards			
ADB	61.98	27 Sep 2023	20.55	0.00	33%
Counterpart	0.00	Cumulative Disbursements			
Cofinancing	0.00	27 Sep 2023	13.41	0.00	22%

Project Page	https://www.adb.org/projects/50275-002/main
Request for Information	http://www.adb.org/forms/request-information-form?subject=50275-002
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