



Completion Report

Project Number: 35197
Loan Number: 2197
November 2012

Sri Lanka: Technical Education Development Project

CURRENCY EQUIVALENTS

Currency Unit	—	Sri Lanka rupee/s (SLRe/SLRs)
	At Appraisal	At Project Completion
	18 July 2005	31 August 2011
SLRe1.00	= \$0.009	SLRe1.00 = \$0.008
\$1.00	= SLRs101.25	\$1.00 = SLRs131.85

ABBREVIATIONS

ADB	—	Asian Development Bank
B.Ed.Tech	—	bachelor of education in technology
B.Tech	—	bachelor of technology
COT	—	college of technology
DTET	—	Department of Technical Education and Training
EIRR	—	economic internal rate of return
EMIS	—	education management information system
GAP	—	gender action plan
GCE	—	General Certificate of Education
GIS	—	geographic information system
ICT	—	information and communications technology
MIS	—	management information system
MSDVTE	—	Ministry of Skills Development, Vocational and Technical Education
MYASD	—	Ministry of Youth Affairs and Skills Development
NVQ	—	national vocational qualification
OBB	—	output-based budgeting
PIU	—	project implementation unit
PSC	—	project steering committee
SDP	—	Skills Development Project
TEDP	—	Technical Education Development Project
TEVT	—	technical education and vocational training
TVEC	—	Tertiary and Vocational Education Commission
Univotec	—	University of Vocational Technology

NOTES

- (i) The fiscal year (FY) of the Government of Sri Lanka ends 31 December. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2009 ends on 31 December 2009.
- (ii) In this report, "\$" refers to US dollars.

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BASIC DATA

A. Loan Identification

1.	Country	Sri Lanka
2.	ADB Loan Number	2197-SRI (SF)
3.	Project Title	Technical Education Development Project
4.	Borrower	Democratic Socialist Republic of Sri Lanka
5.	Executing Agency	Ministry of Vocational and Technical Training ¹ Ministry of Youth Affairs and Skills Development ²
6.	Amount of ADB Loan	\$20 million
	Government of Sri Lanka	\$6.7 million
7.	Project Completion Report Number	PCR: SRI 1368

B. Loan Data

1.	Appraisal	
	- Date Started	18 July 2005
	- Date Completed	29 July 2005
2.	Loan Negotiations	
	- Date Started	26 September 2005
	- Date Completed	28 September 2005
3.	Date of Board Approval	21 November 2005
4.	Date of Loan Agreement	19 January 2006
5.	Date of Loan Effectiveness	
	- In Loan Agreement	19 January 2006
	- Actual	19 April 2006
	- Number of Extensions	0
6.	Closing Date	
	- In Loan Agreement	31 August 2011
	- Actual	31 August 2011
	- Number of Extensions	0
7.	Terms of Loan	
	- Interest Rate	1.0% per annum during grace period 1.5% per annum thereafter
	- Maturity (number of years)	32 years
	- Grace Period (number of years)	8 years
8.	Terms of Relending (if any)	Not applicable
	- Interest Rate	-
	- Maturity (years)	-
	- Grace Period (years)	-
	- Second-Step Borrower	-

9. Disbursements

¹ From project inception April 2006 to April 2010.

² From April 2010 to project completion August 2011.

a. Dates

Initial Disbursement	Final Disbursement	Time Interval
29 June 2006	19 September 2012	74.20 months
Effective Date	Original Closing Date	Time Interval
19 April 2006	31 August 2011	64.12 months

b. Amount

Category or Subloan	Original Allocation		Last Revised Allocation	Amount Disbursed		Undisbursed Balance
	SDR	\$	SDR	SDR	\$	SDR
1. Civil Works	1,534,000	2,255,053	1,445,000	1,411,670	2,181,514	33,330
2. Equipment, Furniture, Vehicles	4,420,000	6,497,611	6,680,000	6,273,245	9,704,715	406,755
3. Learning Materials	505,000	742,374	800,000	743,515	1,164,918	56,485
4. Consulting Services	2,054,000	3,019,478	2,040,000	1,988,819	3,092,329	51,181
5. Staff Development	2,503,000	3,697,530	2,045,000	1,988,009	3,109,941	56,991
6. Studies, Accreditation, Audit	213,000	313,120	95,000	87,373	131,438	7,627
7. Service Packages	429,000	630,650	350,000	345,527	550,382	4,473
8. Interest Charges	601,000	883,499	150,000	132,322	206,594	17,678
9. Unallocated	1,346,000	0	0	0	0	0
Total	13,605,000	18,039,315	13,605,000	12,970,481	20,141,831	634,519
Total (\$ equivalent)	20,000,000	18,039,315	21,118,165	20,141,831	20,141,831	976,334

C. Project Data

1. Project Cost (\$ 'Million)

Cost	Appraisal Estimate	Actual
Foreign Exchange Cost	9.9	20.1
Local Currency Cost	16.8	3.9
Total	26.7	24.0

2. Financing Plan (\$ 'Million)

Cost	Appraisal Estimate	Actual
Implementation Costs		
- Borrower Financed	6.7	3.9
- ADB Financed	19.1	19.9
- Other External Financing	0	0
Total	25.8	23.8
IDC Costs		
- Borrower Financed	0	0
- ADB Financed	0.9	0.2
- Other External Financing	0	0
Total	26.7	24.0

ADB = Asian Development Bank, IDC = interest during construction.

3. Cost Breakdown by Project Component (\$ Million)

Component	Appraisal	Actual
A. Base Costs		
1. Project Components		
a. Strengthening COTs	10.5	14.0
b. Strengthen MYASD & others	1.8	1.4
c. Establishing UNIVOTEC	7.7	6.4
2. Project Implementation	0.6	2.0
3. Taxes and duties	2.2	0.0
Sub Total (A)	22.8	23.8
B. Contingencies		
1. Physical	1.4	0.0
2. Price	1.6	0.0
Sub Total (B)	3.0	0.0
C. Interest Charges	0.9	0.2
Total	26.7	24.0

COTs = College of Technology, MYASD = Ministry of Youth Affairs and Skill Development, Univotec = University of Vocational Technology.

4. Project Schedule

Item	Appraisal		Actual	
	Start	Finish	Start	Finish
Date of Contract with Consultants	Q4 2006	Q4 2010	Q3 2007	Q1 2011
Civil Works at COTs	Q4 2006	Q4 2009	Q4 2008	Q3 2011
Equipment and Supplies (COTs)	Q4 2006	Q4 2009	Q4 2008	Q4 2011
Civil Works at Univotec	Q3 2006	Q4 2009	Q3 2009	Q3 2011
Equipment and Supplies Univotec	Q3 2006	Q4 2009	Q3 2009	Q3 2011
B.Tech and B.Ed.Tech Designed	Q3 2006	Q4 2011	Q3 2009	Q4 2011
Studies and Research	Q3 2006	Q4 2010	Q1 2008	Q2 2009
Study Tours and Training	Q3 2006	Q2 2008	Q3 2010	Q4 2010

B.Ed.Tech = bachelor of education in technology, B.Tech = bachelor of technology, COT = college of technology, Univotec = University of Vocational Technology

5. Project Performance Report Ratings

Implementation period	Ratings	
	Development Objectives	Implementation Progress
From 19 Apr 2006 to 30 Jun 2006	Satisfactory	Satisfactory
From 1 Jul 2006 to 31 Dec 2006	Satisfactory	Satisfactory
From 1 Jan 2007 to 30 Jun 2007	Satisfactory	Satisfactory
From 1 Jul 2007 to 31 Dec 2007	Satisfactory	Satisfactory
From 1 Jan 2008 to 30 Jun 2008	Satisfactory	Satisfactory
From 1 Jul 2008 to 31 Dec 2008	Satisfactory	Satisfactory
From 1 Jan 2009 to 30 Jun 2009	Satisfactory	Satisfactory
From 1 Jul 2009 to 31 Dec 2009	Satisfactory	Satisfactory
From 1 Jan 2010 to 30 Jun 2010	Satisfactory	Satisfactory
From 1 Jul 2010 to 31 Dec 2010	Satisfactory	Satisfactory

D. Data on Asian Development Bank Missions

Mission Name	Date	No. of Persons	Person-Days	Member Specialization^a
Fact-Finding	4–20 May 2005	5	55	a, b, c, d, e
Appraisal	18–29 Jul 2005	3	33	a, b, c
Inception	26–29 Jun 2006	3	9	a, b, f
Special Project Administration	17–22 Jan 2007	2	10	a, g
Loan Review 1	23–29 Mar 2007	2	12	a, g
Loan Review 2	25 Mar–10 Apr 2008	3	48	g, h, i,
Loan Review 3	27 Oct–6 Nov 2008	2	20	g, j
Midterm Review	14–24 Jul 2009	3	30	g, i, j
Special Loan Review	24–30 Nov 2009	3	18	g, i, j
Review 4	5–7 Apr & 19–22 Jun 2010	3	15	k, g, j
Project Completion Review	2–21 Jul 2012	5	60	e, f, j, k, l

^a a = senior social sector specialist, b = social development officer, c = economist, d = senior counsel, e = technical education and vocational training specialist (consultant), f = associate project analyst, g = social sectors and/ or resettlement specialist, h = project analyst, i = gender and social equity specialist (consultant), j = assistant project analyst, k = economic and financial analyst (consultant), l = senior gender and social development officer.

I. PROJECT DESCRIPTION

1. The Technical Education Development Project (TEDP) was the fourth ADB-funded project in technical education and vocational training (TEVT) in Sri Lanka since 1983. The TEDP built on the concepts, policies, practices, and infrastructure investment of the Skills Development Project (SDP),³ which lasted from 2000 to 2007. The overall goal of the TEDP was to strengthen the institutional capacities of six technical colleges, a teacher training institution, and relevant government ministries to provide TEVT to meet labor market demand for higher-level technicians and technologists. The project was designed to complement government strategies and plans to address the need for higher skilled workers required for national economic and social development. The first three ADB-funded TEVT projects were designed and implemented during the 25 years of civil strife that dominated Sri Lanka's political, social, and economic development.⁴

2. The TEDP consisted of three outputs: (i) upgrade six technical colleges to colleges of technology (COTs), including providing upgrades to civil works, equipment, and teacher development, to offer 12 new technician diploma programs; (ii) strengthen the administrative capacity of the responsible ministry⁵ and the associated departments and authorities through an improved education management information system (EMIS), geographic information system (GIS), and output-based budgeting (OBB); (iii) transform the National Institute of Technical Education of Sri Lanka into the University of Vocational Technology (Univotec) offering technologist degree programs leading to a bachelor of technology (B.Tech), a bachelor of education in technology (B.Ed.Tech) and in-service professional development programs for TEVT teachers. The three outputs were further subdivided into 13 suboutputs as listed in Appendix 1.

3. The TEDP further developed and implemented the existing national vocational qualifications (NVQ) framework by introducing NVQ levels 5, 6, and 7 for technicians and technologists.⁶ Introducing the higher NVQ levels completed the framework as a system to classify various TEVT programs and qualifications, from craft or trade entry-level NVQ 1 to technologist at NVQ level 7. The framework represents a step-by-step continuum providing the opportunity for anyone in TEVT to realize his or her maximum potential.⁷

4. International and national specialist consultants, in consultation with various private sector employment council advisory committees, designed and developed competency standards and supporting instructional materials for 12 TEVT technician level NVQ 5 and 6 programs.⁸ Included in the instructional materials were student assessment logbooks listing the learning outcomes and providing space for the instructor or supervisor to assess and document student competencies. Equipment lists based on the curriculum and teaching methodology were given to the program implementation unit (PIU) procurement officers to ensure that the type and quantity of equipment matched the curriculum. A similar consultative process was used at Univotec for the development of B.Tech and B.Ed.Tech degree programs. National competency standards for 45 existing craft, trade, and service occupations at NVQ levels 1 to 4 were revised and new standards were developed for 30 additional occupations. NVQ level 1 to 4 vocational training programs are offered at the COTs and at private and public TEVT providers throughout Sri Lanka.

³ ADB.1999. *Sri Lanka: Skills Development Project*. Manila.

⁴ Civil war between the Government of Sri Lanka and the Liberation Tamil Tigers of Eelam began in July 1983 and ended in May 2009.

⁵ The Ministry of Vocational and Technical Training was renamed the Ministry of Youth Affairs and Skills Development (MYASD) effective April 2010.

⁶ A summary of the 7 levels of the NVQ framework is presented in Appendix 9.

⁷ ADB. 2011. *The National Vocational Qualifications Framework for Skills Training Reform in Sri Lanka*. Manila.

⁸ These included new programs in automobile, bio-medical technology, construction, digital imaging and print, farm machinery, food processing, information and communications technology, jewelry design and manufacturing, mechatronics, production (mechanical) technology, refrigeration and air conditioning, and welding technology.

5. A social marketing strategy was developed to improve the image of TEVT as a viable alternative to continuing academic studies, particularly at university. The target groups for the marketing campaign were parents and students, especially those from remote, rural, or poverty-stricken areas. Career guidance units at all COTs were included in the social marketing campaign to build on existing contacts with the secondary schools in the catchment area of each COT.

6. The transformation of the National Institute of Technical Education of Sri Lanka into Univotec was a major undertaking of the TEDP that required the formulation and passage of an act of Parliament to establish the new university. The organizational change required to transition from technical institute to university required strong leadership ensuring the proper reorientation of existing faculty and staff and the recruitment of new faculty to create a more highly skilled cadre of personnel. Additionally, new facilities, equipment, and a complete set of operating policies and procedures were required. Program development of the B.Tech and B.Ed.Tech programs was necessary before the first student intake cohort could begin.

II. EVALUATION OF DESIGN AND IMPLEMENTATION

A. Relevance of Design and Formulation

7. The design and formulation of the TEDP took place as Sri Lanka was in the final stages of a 25-year conflict. The vision guiding the project design focused beyond the conflict to a time of peace when there would be a need to rebuild the economy and the country and when higher-level technicians and technologists would be in demand to help design, build, and maintain roads, communication infrastructure, businesses, and industries. The project design supported government priorities⁹ and was aligned with ADB's country strategy and program for Sri Lanka.¹⁰ Project formulation took into consideration (i) the ongoing ADB-funded Skills Development Project (SDP); (ii) the need to extend and continue support for the NVQ framework; and (iii) the need to improve career path opportunities for youth that annually leave secondary education with either the ordinary level or advanced level qualification, but are unable or unwilling to enter the traditional universities.

8. The design of the TEDP started in September 2003 with a 6-month project preparatory technical assistance.¹¹ The design process for the new project was 4 years before the completion of the SDP.¹² The rationale for designing a new loan while the existing loan was in its infancy was that early preparation would reduce delay in implementation. The disadvantage of designing a new project so early was that the actual outcomes, impact, and lessons of the existing project were not yet evident. Early design and processing of loans for follow-up projects has the effect of negating the need for and any benefit derived from project completion reviews by the government or by ADB.

9. The project design included EMIS software development, staff training, procurement, and installation of computers and data networks linking provincial COTs with ministry and Tertiary and Vocational Education Commission (TVEC) offices. Experience and lessons learned from the previous attempt to develop and implement a management information system (MIS) in the SDP (2000–2007) should have provided an excellent foundation to revise and improve previously developed software to meet the needs of COTs and Univotec. However, following 10 years of attempting to design, develop, and use MIS to improve the management of TEVT in Sri Lanka, many of the software modules remain underutilized or non-functional.

⁹ Government of Sri Lanka, Ministry of Finance and Planning. 2006. *Mahinda Chintana: Vision for a New Sri Lanka – A Ten Year Horizon Development Framework 2006 – 2016*. Colombo.

¹⁰ ADB. 2003. *Country Strategy and Program Update 2004 – 2008*. Manila.

¹¹ Human Resource Investment Project. 2004. *Project Preparatory Technical Assistance No. 4090-SRI: Final Report*.

¹² ADB. 1999. *Sri Lanka: Skills Development Project*. Manila.

10. The TEDP design was based on two important assumptions and one significant misconception. The first assumption was that within the first year of the effective date of the project, the government would recruit and appoint a cadre of approximately 100 teachers, instructors, and other staff for the effective operation of the COTs and Univotec.¹³ However, the recruitment of the full cadre did not take place. The second assumption was that within the same time frame, the government would enact legislation to establish Univotec. No investment in civil works, equipment, or administrative reorganization of the National Institute of Technical Education of Sri Lanka could take place before passage of the act of Parliament to create Univotec. The misconception was that students from NVQ levels 1 to 4 would somehow, through technical training and work experience, achieve adequate competencies in English, mathematics, and sciences to succeed in NVQ levels 5, 6, and 7 for technicians and technologists.¹⁴

11. The intent, design, and formulation of the TEDP was appropriate and supported government economic development priorities and plans to increase the number of higher-level technicians and technologists for various economic sectors, including construction, manufacturing, transportation, communication, and information technology. The TEDP design was consistent with Sri Lanka's development plans to become a mid-level economy.

12. Another positive design feature was extending the NVQ framework to technician and technologist levels 5, 6, and 7. The planned project outcome of increasing access to higher-level technical education, including admission to Univotec, was well conceived. The creation of a step-by-step progression to achieve university status contributed significantly to reshaping the public perception that TEVT is inferior to a traditional university education.

13. The project design included professional development study tours¹⁵ and training for non-teaching administrative personnel from the ministry, various administrative authorities, departments, the COTs, and Univotec. The original staff development plan was prepared primarily for the newly recruited and appointed instructors.¹⁶ However, in the latter stages of project implementation, because the cadre was not recruited and concern was increasing over non-disbursement of funds for staff development, the number of people sent on study tours and training increased substantially and the duration of most study tours or training programs was reduced, on average, by half. This change in design further diluted the quality of professional development and any benefit or return on investment that may have been realized from the original project design.

14. The design of short-term training for teaching personnel focused primarily on pedagogy, curriculum development, and other topics peripheral to the main requirement of developing teachers' subject matter expertise in their respective technical specializations. The most important element in providing quality technical education is the mastery of technical knowledge and skills by teachers. While the design recognized this element, the failure of the ministry to recruit and appoint an adequate number of teachers diminished any return on the loan investment in study tours and short-term training.

15. The scheduling of study tours and training programs was supposed to have occurred within the first 18 months of loan effectiveness. Delays in organizing the study tours combined with the shortage of teachers resulted in an excessive number of people participating in multiple training programs in the final year of the project.¹⁷

¹³ Loan Covenant Schedule 6, para. 16.

¹⁴ Loan Covenant Schedule 6, para. 12 .

¹⁵ Study tour and training destinations included Australia, Korea, Singapore, and Thailand.

¹⁶ A comparison of the staff development plan prepared during the project preparatory technical assistance to the actual plan at implementation is provided in Appendix 8.

¹⁷ During site visit interviews, several staff reported participating in 3 to 6 different short-term professional development activities.

B. Project Outputs

16. A tabulated list of project outputs at appraisal and as achieved at project completion is provided in Appendix 2. The three outputs and 13 suboutputs collectively contributed to increasing the potential of providing higher-level technician and technologist education and training. Policy reforms supporting the expansion of the NVQ framework and the creation of the COTs and Univotec were significant accomplishments with potentially enduring outcomes.

17. Through the TEDP, each COT and Univotec received adequate computer hardware, local area network switches, routers, and internet service. At project completion, staff training on the equipment and software for administrative purposes was complete. However, the full functionality of the software remained inadequate or was otherwise not used as originally conceived. At project completion, the investment in computer equipment, internet service, software development, and training for EMIS, labor market information system (LMIS), GIS, and performance-based budgeting did not result in any meaningful improvement in the effectiveness or efficiency of managing the COTs or the TEVT system in general. Additional effort is required to review, clarify, and revise management systems to identify data required to produce meaningful reports for decision making. Periodic adjustments to the software and procedures for information processing are required as part of improving the management functions.

18. Access to information and communications technology (ICT) facilities and training programs has increased significantly. The renovations and equipment procured through the TEDP for four COTs (Badulla, Kandy, Kurunegala and Ratnapura) providing ICT courses and for Univotec increased the capacity of each institution to provide the latest ICT education and training. The recruitment and appointment of teachers for ICT subjects and programs was more effective than for other subjects. COTs with an ICT program have approximately three full-time ICT teachers. In the majority of COTs, the ICT teachers ensured the proper functioning of the network and computers. Maintaining TEVT laboratory and workshop equipment in proper operating condition is frequently a challenge. Many TEVT teachers do not appreciate the importance of students doing practical applications and projects. TEVT teachers are responsible for ensuring that laboratories and workshops are functional and safe. TEVT teachers that are either incapable or unwilling to demonstrate proper use of instruments and equipment essential to their technical field should be considered unqualified to teach.

19. The design and development of occupational standards and instructional materials for the technician and technologist programs expanded the range of program offerings at the COTs and at Univotec. The choice of occupations was demand-driven and aligned with labor market needs. The allocation of various programs to be the COTs was appropriate. Examples such as the farm machinery program at the Anuradhapura COT, the food technology program at the Kandy COT, and the biomedical equipment technology program at the Maradana COT reflect the appropriate distribution of programs.

20. The bridging program for students to advance from craft and trade NVQ 3 and 4 to technician programs at NVQ 5 and 6 were not as effective as anticipated. Students and teachers reported major deficiencies in mathematics and English competencies that were not fully addressed by the bridging program. Competency standards in essential math, English, and sciences should be set, maintained, and achieved for admission to the higher level NVQ programs. The quality of preparatory programs that provide a foundation in mathematics, science, and English is important for students to succeed in higher-level technical education programs.

21. Providing options for either full-time or part-time study increases internal efficiency and is an excellent means of maximizing utilization of facilities by increasing access for part-time and other types of learners. The core team of full-time teachers could be supplemented by part-time instructors, particularly those who are professional technical specialists. The challenge with recruiting and retaining part-time teachers is the extremely low rate of pay, which was SLRs400 per

hour at project completion. During the project completion review, interviews with several part-time teachers revealed the hourly rate has not changed in 25 years and now lags behind private sector pay and other pay scales.

22. Despite the investment in developing and revising competency standards for 75 NVQ 1–4 and 12 NVQ 5–6 programs (including continuous student assessment), the final evaluation continues to be conducted by an external assessor. This is due to the interpretation of the role of TVEC auditors. Throughout the planning documents for the SDP (2000–2007) and the TEDP (2006–2011), reference is made to “auditors” rather than “assessors.” The distinction between student assessment or evaluation and program auditing is critical since continuous formative assessment and final summative evaluation of student performance in relation to the competency standards is the responsibility of the teacher. Under the supervision of COT directors, teachers should assess students and submit the grades to the TVEC. It is not necessary for a TVEC auditor to examine each student.

23. The TVEC is responsible for accrediting programs by verifying four key factors: i) teacher qualifications; ii) compliance of the curriculum to the competency standards; iii) access to and appropriate use of equipment; and iv) student mastery of the competencies. These four factors are dynamic from year to year. For example, teachers may transfer, retire, or discontinue teaching. Equipment may not be used or the standards may not be achieved. The function of the TVEC is to carry out random or selective audits of COT programs and teachers to ensure compliance to the standards. The major role of the TVEC is to monitor changes in the quality of instruction in the COTs and all public and private TEVT institutions. Any program or institution that does not meet the minimum standard may have their accreditation withdrawn. The role of the TVEC should be to conduct quality assurance audits of programs and institutions rather than evaluating students.

24. TEDP social marketing and career guidance initiatives were to address negative parental and student perceptions that TEVT was not a viable alternative to going to university. In a situation where only about 20% of advanced level recipients are admitted to public universities, there is great need for a viable and credible post-secondary education alternative. The social marketing campaign and improved career guidance services were to inform the public and students of the options available in TEVT. Progress was made in promoting the NVQ framework as a viable alternative. An emphasis on ascending from NVQ 3 to being admitted to NVQ 5 and then to NVQ 7 at Univotec raised the image of TEVT as an alternate stream to a university degree. The social marketing campaign was complicated by the liberal use of “engineering” as a descriptor of the programs and degrees available through Univotec. Engineering degrees are not issued by Univotec. The degree programs at NVQ 7 are the B.Tech and the B.Ed.Tech. Additional information on the outcomes of the social marketing and career guidance initiatives is provided in Appendix 9.

25. Reducing gender imbalances and promoting social equity are among the goals identified to improve access to TEVT. For this purpose, the project prepared a gender and social equity strategy and action plan. While gender coordinators were not appointed in the COTs, all COTs identified staff, usually career guidance counselors, to take responsibility for gender and social equity activities. Further, all COTs prepared gender action plans (GAPs) that (i) developed promotional material and disseminated information on TEVT programs, (ii) encouraged girls to enter non-traditional vocational training, (iii) conducted support programs to provide equal opportunities for underprivileged or marginalized groups, and (iv) implemented outreach activities for parents and secondary school students.

26. At each COT, the career guidance units were housed in spacious facilities, were accessible to students, and were well furnished and staffed. The guidance counselors liaised with secondary schools in their region to actively promote the COT and the NVQ framework. Many students’ preferred career goal is employment in the government sector, with employment as a technician or technologist for a private company or starting their own business as a second choice.

27. The EMIS, originally intended to support student records management, is either not properly designed or not being used as originally conceived as it is not functioning effectively to support COT operations. The EMIS was to have maintained records of learner achievement in continuous assessment of competencies, with the data transmitted from the institutions to the TVEC to verify completion of the competencies required for the training program. When all competencies were achieved, the TVEC would have awarded the certificate to the learner. The process was supposed to be fully automated, relying on computer-generated reports, including the final printing of the NVQ certificate. The original design of the EMIS was sound, but maintaining software, inputting data, updating files, and ensuring communication links with the various institutions is essential for system sustainability and operational efficiency. Inputting data into a dysfunctional system makes it difficult for the officers, teachers, and staff at the COTs to realize any improvement or any value in the return on investment of their time and effort.

C. Project Costs

28. There was a cost overrun of 10% for the total project, with the main contribution to the overrun arising from a 40% increase (\$2.8 million above revised estimates) in the cost of equipment for the COTs. A cost overrun of 45% (\$0.36 million) occurred under the category of learning materials. These have been partially offset from lower expenditures for other categories.

29. Project costs by category are presented in Table 1.

Table 1: Project Cost by Category

	Category or Sub-loan	Original Allocation (\$'000)	Amount Disbursed (\$'000)	Undisbursed Balance (\$'000)
1.	Civil Works	2,645	2,182	436
2.	Equipment, Furniture, Vehicles	10,580	9,685	895
3.	Learning Materials	1,259	1,165	94
4.	Consulting Services	3,197	3,092	105
5.	Staff Development	3,264	3,110	154
6.	Studies, Accreditation, Audit	131	131	0
7.	Service Packages	608	550	58
8.	Incremental and Recurrent	2,156	8	2,148
9.	Interest Charges	207	207	0
	Total	24,047	20,130	3,890

D. Disbursements

30. Disbursements were slow in the initial 2 years of the project (2006 and 2007), followed by a gradual annual increase at mid-project, and a major surge in 2010, the year preceding the final year of the project, when 48% of project funds were disbursed. No contracts were awarded in the first year while only a consultancy contract was awarded in the second year. Among the reasons identified for the delay in disbursement were (i) the delay in passing the Univotec Act through Parliament and (ii) delays in appointing project implementation staff and the consulting firm. These factors led to the first 6-month procurement plan being approved only in mid-2008.

E. Project Schedule

31. The planned versus actual TEDP implementation schedule is provided in Appendix 3. There was a 9-month overlap in the two projects as the SDP PIU staff transitioned to TEDP functions. Most of the senior staff of the SDP PIU, including the project director and finance manager, took

over similar functions in the TEDP PIU. Implementing the TEDP 9 months before closing the SDP caused some delays in procurement. Two loan covenants¹⁸ for Univotec were linked to the passage of an act in Parliament. Delays in implementing some project outputs resulted from the time required for approval of the Univotec Act.

F. Implementation Arrangements

32. The intent was to retain and continue the personnel of the SDP PIU for the TEDP. The rationale for continuity was to reduce delays in TEDP start-up and to ensure an adequate number of staff with expertise and experience gained from the SDP would continue to work for the new TEDP. The plan did not fully materialize as the executing agency insisted on advertising all positions, which required SDP personnel to submit their candidacy for the announced TEDP positions.

33. From appraisal to project completion, there were several changes in the executing agency due to changes in the composition of ministries. At appraisal, the executing agency was the Ministry of Skills Development, Vocational and Technical Education (MSDVTE). During the implementation period the responsibility was reassigned to the Ministry of Vocational and Technical Training and finally to the Ministry of Youth Affairs and Skills Development (MYASD). These changes did not affect implementation since the core subject of TEVT was consistent throughout as a responsibility of each of the ministries.

34. The project steering committee (PSC) was established at inception with 21 members and was subsequently enlarged to 30 members. The PSC held 9 meetings during the implementation period. However, no meetings were held in 2010 and 2011 due to elections and the transition of ministries.

G. Conditions and Covenants

35. The appraisal mission memorandum of understanding included 33 loan conditions and covenants (Appendix 4). At project completion, 28 of the conditions had been fully complied with by the borrower, four partially complied with, and one not complied with. This was the result of problems with the recruitment and appointment of the cadre of approximately 100 teachers, instructors, and other staff for the effective operation of the COTs and Univotec. A significant gap exists between the number of positions allocated and the positions filled (para. 92). Selection and appointment of this cadre is a recurring and visible problem.

36. The impact of partial or non-compliance with loan covenants was a significant contributing factor in this project being rated *partly successful*. Three of the most critical covenants that should have been fully complied with are (i) the appointment of teachers, (ii) ensuring the replacement of teachers due to participation in training, and (iii) the delegation of budget management authority to COT directors.

37. The loan covenant to ensure the adequate provision of counterpart funds during the implementation period (2006 to 2011) was achieved. Preliminary indications for continued funding of incremental recurrent costs for consumable supplies and services suggest inadequate provision to support quality competency-based technical education and skills training.

H. Consultant Recruitment and Procurement

38. Project design included the consultancy services of 10 international (99 person-months) and 16 domestic consultants (270 person-months). ADB guidelines for using quality and cost-based selection and Government of Sri Lanka procurement policies and procedures were followed for the recruitment, selection, and awarding of the consulting services contract. ADB concurrence was received for all procurement packages. The number of procurement bid packages identified at appraisal was 21 and the actual at project completion was 54. Reasons for the increase included the wide range of equipment required and changes in the implementation schedule, particularly for

¹⁸ Loan Covenant Schedule 6, paras. 20 and 22.

civil works. Significant delays were experienced in procurement preparation and processing with no contracts awarded in 2006 and only the consulting services contract processed and awarded in 2007. Factors contributing to the delay in procurement included a delay of approximately 12 months in project implementation as the previous SDP project completion was extended to January 2007. The anticipated smooth transition of SDP PIU officers and staff did not occur as the government insisted on a full recruitment and appointment procedure for the new project. Output 3 was delayed due to the additional time required for preparation and approval by Parliament of the Univotec Act.

39. Goods were procured using a two-stage inspection procedure. All goods procured were initially received at the suppliers' warehouses where they were inspected prior to delivery to recipient institutions. On approval, goods were delivered to the destination centers by the supplier. Generally, the goods supplied, services rendered, and works completed by the suppliers and contractors were satisfactory and on time. There were no major complaints on the procurement process. Site visits during the project completion review mission revealed that instruction manuals were not provided with the laboratory testing equipment for the construction program. There were some concerns regarding the operating condition and quality of automobile demonstration units and the simplicity of fault simulation panels. The refrigeration and air conditioning equipment that included significant ductwork was poorly designed as floor mounted units required excessive floor space. The ductwork could have been suspended from the ceiling on threaded drop rods typical of installations in commercial buildings. This would have saved floor space and provided a much more realistic learning experience for students. Where applicable, service agreements were included to maintain equipment.

40. At loan appraisal, civil works for selected COTs consisted of renovation of existing buildings primarily to accommodate ICT computer labs and an adjacent room for the servers, network switches, and routers. Construction of new buildings increased the physical capacity of the Badulla, Kandy, Kurunegala, and Anuradhapura COTs. The design and quality of construction were generally satisfactory with the exception of a new building at COT Badulla where the rooms in the new two-story building were only able to accommodate a maximum of 20 students for conventional instruction only. The multimedia room was inadequate and poorly fitted.

I. Performance of Consultants, Contractors, and Suppliers

41. The overall performance of international and local consultants was satisfactory. However, improvements in the deployment schedule and the sequencing of specialists could have increased the impact of their inputs. Some consultants worked in isolation, focusing on their individual terms of reference independent of other specialists and often out of context of the larger project. There was inadequate consideration given to how TEDP inputs collectively contributed to the larger project outcome and impact. The phenomenon of individual consultants focusing on their own terms of reference is very common as their performance evaluation typically occurs long before project completion and the evaluation of the overall performance of the consulting firm.

J. Performance of the Borrower and the Executing Agency

42. Throughout loan effectiveness, the executing agency provided timely support to ensure project implementation. The PSC, subcommittees, and task groups supported collaborative decision making on instructional program design and policy matters. The PIU played a pivotal role guiding consultants and informing the stakeholders of progress. Some concerns were expressed regarding the project operating somewhat in isolation of the key authorities, departments, and institutions that should have assumed greater ownership and propriety of the development initiatives. The overall performance of the borrower and the executing agency was *satisfactory*. However, the delay in the recruitment and appointment of full-time teachers was unsatisfactory.

K. Performance of the Asian Development Bank

43. The TEDP project preparatory technical assistance was completed approximately 3 years before the SDP closed. The design and subsequent approval of the TEDP loan did not take into consideration the lessons learned or recommendations from the SDP project completion report¹⁹ which was issued 18 months after the TEDP approval.

44. With the exception of the TEDP loan appraisal mission at the start of the project and the project completion review mission, all other review and monitoring missions did not include a TEVT specialist. The technical nature of TEVT projects, combined with the high costs associated with preparing technical teachers and procuring equipment for laboratories and workshops, justifies including a TEVT specialist on key loan reviews and missions. The overall performance of ADB was *partly satisfactory*. This rating is based on the premature timing of TEDP loan preparation and the satisfactory rating given for all TEDP loan review missions.²⁰ ADB and the borrower should have taken action to mitigate the problems resulting from the delay in passing the Univotect Act and the failure to recruit and appoint teachers.

III. EVALUATION OF PERFORMANCE

A. Relevance

45. The project was rated as *relevant*. At appraisal, the project was consistent with the government's strategy to strengthen the TEVT sector. ADB's country strategy supported the development of the TEVT sector to reduce high levels of youth unemployment. The project concept was beneficial as it supported government priorities and long-term development plans and may eventually contribute to poverty reduction. The TEDP built on previous and ongoing ADB investments in the TEVT sector and was aligned with ADB's country strategy and program priorities for social development.

46. At completion, the project components met most of the issues and policy recommendations identified in the current government policy on human resources and employment.²¹ The project design addressed several issues identified in the policy document including: (i) the absence of formal linkages between different types of TEVT and general education; (ii) the delay in formal "vocalization" [sic] of senior secondary education; (iii) weak recognition of competency-based vocational qualifications in the public and private sectors; and (iv) poor employability of vocational students. Most of the recommendations proposed in the policy document were included in the project design.

B. Effectiveness in Achieving Outcome

47. The project was rated as *effective*. Despite the slow start-up, most of the expected outcomes of the project have been achieved. Six technical colleges have achieved COT status, with due recognition by students and parents as a viable alternative to general education. However, while the expected outcome of enhanced capacity has been achieved for technical diploma programs, actual output is hindered by the lack of teachers. Univotec has been established, and its acceptance among students is increasing rapidly. Short-term staff training funded by the project has had a limited impact due to late scheduling, large numbers to be trained, and some irrelevant training.

48. Civil works for the refurbishment and expansion of COT facilities marginally increased the institutional capacity of the existing technical colleges. At one COT, the new construction and

¹⁹ ADB. 2007. *Completion Report: Skills Development Project in Sri Lanka*. Manila.

²⁰ See page iv, section 5 of this project completion report for project performance report ratings.

²¹ Government of Sri Lanka. 2011. *National Human Resources and Employment Policy for Sri Lanka (First Draft)*. Colombo.

equipment added a second car hoist for the automobile program and a large workshop for the welding program. However, the existing car hoist and shelter were not being used and the welding workshop remained closed because there were no teachers and no students so the new and renovated facilities neither increased capacity nor extended services to a broader range of students. Renovations at all colleges provided improved facilities, especially for ICT and related programs. The new equipment and renovated facilities may eventually be used if qualified teachers are appointed. Construction of new buildings should be authorized only when existing facilities are being used to full capacity.

49. Extending the NVQ framework policy reform introduced through the SDP was a natural evolution that was timely and appropriate. Introducing NVQ levels 5, 6, and 7 is a significant achievement of the TEDP. Policy adjustments are required to moderate the current emphasis on using the NVQ framework as an alternate route to university. The present policy is resulting in extremely low or no student enrollment at most COTs in NVQ 6. The majority of students are leaving following NVQ 5 and going directly to Univotec (NVQ 7).

50. The NVQ system improved the understanding of how craft and trade qualifications fit within the TEVT hierarchy. Unfortunately, the TEDP focus on NVQ 5 and 6 programs at COTs and NVQ level 7 at Univotec had little regard or consideration for the foundation levels 1 to 4. The concept of step-by-step improvement from craft to technologist was not fully embraced by the TEDP. The clamor for admission to a university degree program overshadowed the fundamental objective and foundation on which TEVT programs are to be designed: to prepare applied science technicians and technologists for well-paying jobs primarily in the private sector.

C. Efficiency in Achieving Outcome and Outputs

51. The project is rated *less efficient* in achieving the intended outputs and outcomes. The major reasons for this rating include the extremely low student enrollment in the COTs. The root cause of the low enrollment appears to be the challenges faced by the PSC to recruit, select, and appoint technical teachers, which causes programs to close and TEDP-built facilities and equipment to remain idle. The vivid examples are the biomedical program at Maradana COT and the welding program at Kurunegala COT. The construction technology programs at Anuradhapura and Ratnapura COTs were under-enrolled because only part-time teachers were available to teach mainly on weekends. The investment in strengthening the ministry through study tours and short-term training was deemed ineffective. The lack of a properly functioning EMIS system created inefficiencies in student records management, the continuous assessment of student competencies, and the tracking of students after qualifying and entering the job market. The component with greatest potential for efficiency was Univotec. The late start, combined with major civil works, procurement, staff, and new program development, resulted in low student output but excellent institutional capacity development that will have greater efficiency with each successive year.

52. The economic analysis and poverty assessment presented in Appendix 5 shows that the economic internal rate of return (EIRR) is recalculated at 6.3% compared to 20.4% at appraisal. This is a reflection of the very poor efficiency of the resources utilized under the project. Economic benefits were measured at appraisal as the incremental earnings of the different categories of graduates who received project-funded support. The main reason for the low EIRR result is the low benefits stream realized from the project benefits due to the much lower than targeted student throughput at Univotec and especially at the COTs. Among the underlying reasons for the low efficiency is the shortage of teachers at the COTs and the delay in establishing Univotec. The recalculated EIRR does not reflect some of the indirect economic benefits from the project, such as the increased number of students being trained in ICT to meet rapidly expanding demand and increased awareness of the NVQ system among students and parents.

D. Preliminary Assessment of Sustainability

53. The sustainability rating of the project is *less likely*. The government appears to have a strong commitment to improve the TEVT sector, and the staff at the COTs and Univotec are competent and dedicated. However, the project benefits cannot be realized or sustained until the issues relating to the recruitment of teachers are resolved and more management flexibility is given to the COT directors. Sustainability of the loan investment relies heavily on the recruitment, appointment, and retention of full-time technical teachers to fill vacant positions.

54. Several key factors are required for effective and efficient functioning of COTs. The majority of COTs have strong leadership from experienced COT directors. Most directors have been promoted from teacher to head of department to principal to director. The challenges faced by the directors include the absence of delegated responsibility for budgets and staffing. The Public Service Commission²² approves the recruitment and appointment of the teaching cadre and the Department of Technical Education and Training (DTET) allocates and controls operating budgets. The directors have no authority over the appointment of teaching staff and extremely limited responsibility for the meager operating funds. Any revenue generated by the COT must be deposited in the central revenue account.

55. Having a full cadre of qualified teachers that models pride in their technical specialization and in teaching is a key element to success. One of their main responsibilities is to organize, manage, and maintain laboratories and workshops in clean and safe operating conditions. Admirably, the TEDP prepared a maintenance plan or manual for each COT, but these will be of little use if the plan remains dormant. Shortages of full-time teaching staff combined with the attitude of many teachers who shirk their responsibility to maintain laboratories and workshops are constraints in providing quality TEVT.

56. The cost of providing quality education and training at the COTs and at Univotec will be generally higher than at conventional educational institutions (Appendix 5). Technical education and training programs require teachers to demonstrate various techniques and students to apply learning by doing practical assignments. Effective skill development programs require equipment and supplies to support the curriculum to meet occupational standards. Active teaching and learning requires consumable supplies and instructional materials, contributing to the relatively high operating cost of TEVT.

E. Impact

57. Although it is premature to determine the eventual impact that the TEDP will have over the next 10 years, it was possible during the project completion review mission to observe indications of the project's positive impact in at least five key areas:

- (i) The continued support for and expansion of the NVQ framework improved the image of TEVT and clarified how youth could progress steadily in vocational and technical careers.
- (ii) Introducing programs to prepare technicians and technologists at COTs and at Univotec has improved public awareness and confidence in TEVT as a credible tertiary education option, especially for secondary school leavers unable to gain admission to the traditional university system.
- (iii) Students are increasingly aware of the potential for increased earning capacity as they progress up the NVQ ladder. However, the poverty impact of the project has been

²² The current Public Service Commission was appointed on 15 May 2011 by the President. It has nine members appointed for three years. It has powers of appoint, promote, transfer, discipline and dismiss public officers.

minimal as many students who have utilized project resources to move up from NVQ levels 5 and 6 are from non-poor families.

(iv) The equipment and instructional materials supplied by the project enable experienced and qualified teachers to provide better quality technical education relevant to the needs of the students and the labor market.

(v) Demand for admission to Univotec will increase further.

Female enrollment in the TEVT courses of the DTET increased from 37.0% in 2003 to 40.5% in 2011. This increase was attributable to several factors, including the project's efforts to raise awareness and provide information on developing career paths, and its provision of gender sensitivity training to academic staff. The availability of jobs in the private sector for females equipped with technical skills has also contributed to the increase in female enrollment in TEVT courses. Unemployment, which is high among educated females, will be reduced with new job opportunities, which will have a direct impact on poverty reduction.

IV. OVERALL ASSESSMENT AND RECOMMENDATIONS

A. Overall Assessment

59. The TDEP is rated *partly successful*. The project concept was appropriate as it supported long-term government priorities and development objectives. The continued investment in TEVT enabled the expansion of the NVQ framework and introduced programs to prepare technicians and technologists at the COTs and at Univotec. The NVQ framework clarified how youth could move into vocational and technical careers and improve earning capacity as they progress up the NVQ ladder. In addition, the social marketing campaign, gender and social equity activities, and career guidance counseling contributed to a better image of TEVT and its acceptance by the public as a viable tertiary education option.

60. COT buildings were renovated, facilities expanded, new equipment procured, and new instructional materials designed and produced. However, this only marginally increased the institutional capacity of COTs. A key challenge to the success of the project was the lack of teachers to train the intake of COT students and optimize the use of state-of-the-art equipment, training material, and upgraded facilities. A large number of staff from COTs, Univotec, and related TEVT institutions participated in local and overseas training programs. However, some of the short-term study tours and training programs covered topics of little relevance to conditions in Sri Lanka and were therefore ineffective.

61. A gender and social equity strategy and action plan was developed for the project, and all COTs developed their own GAPs. Career guidance counselors at each COT were usually in charge of gender and social equity activities in addition to their designated responsibilities. There was little or no response from the ministry on the gender and social equity policy and no attempt to address related concerns in other TEVT agencies.

62. Furthermore, some efforts to implement new management concepts and systems were imperfect. The project design placed too much emphasis on strengthening government ministries and developing elaborate OBB, EMIS, labor market information system, and quality assurance systems. COT directors should have been granted greater administrative autonomy to recruit teachers and prepare budgets and more authority and accountability to use funds as required.

63. The poverty impact of the project was minimal as many students who utilized opportunities created by the project to move up from NVQ levels 5 and 6 were from non-poor families.

B. Lessons Learned

64. The ADB project preparation process of providing a project preparatory technical assistance to design a new loan project with full participation of the borrower should be respected. The timing of loan designs and the approval of the report and recommendation of the President for new loans should allow adequate time to assess the outcomes of the previous project.

65. A minimum of 2 years should be added to project scheduling if implementation is contingent on the formulation and passage of an act of Parliament since this time period equals the average processing time for such critical decisions. Additional time must be allocated when construction, teacher and staff recruitment, and program development are contingent on potentially sensitive changes in government policy.

66. Issues affecting the efficiency of the learner assessment and credential-awarding processes need to be rapidly resolved. Qualified TEVT teachers in TVEC-accredited institutions and programs do not require further surveillance or scrutiny by external assessors. There must be increased recognition of teacher professionalism and trust in their ability to objectively assess learner competency based on occupational standards. Student assessment requiring external assessors to evaluate students based on final exam results—student summative evaluation—is an outdated academic practice. Cognitive behavioral therapy methodology requires progressive and continuous assessment of learner knowledge, skills, and attitudes, which means that the teacher is best equipped to assess learner competency. The TVEC should empower teachers to evaluate student performance and should be authorized to issue the appropriate credential.

67. The majority of short-term study tours and training, particularly on topics of little relevance to conditions in Sri Lanka, were ineffective. Late scheduling, combined with an increase in the number of participants and a decrease in the duration of training, had serious consequences on the quality of learning. Significant changes in the staff development plan should be approved by senior members of the government and ADB. The relevance, quality, and applicability of the study program or tour content should take precedence over the desire to disburse funds.

68. Education projects ultimately rely on competent full-time teachers providing theoretical and practical instruction to students. Civil works, procurement of teaching equipment, and development of new programs and supporting instructional materials are of little use if teachers are not effectively recruited and appointed. ADB should withhold investment in an education institution if full-time teachers are not available, committed, and actively teaching.

69. Social marketing and career guidance efforts are only as effective as the reliability and quality of the TEVT programs being taught. Students, parents, and employers will quickly recognize when a COT or any other TEVT institution is functioning effectively: students will master new competencies, employers will seek graduates from quality programs relevant to their needs, and parents will be pleased their children are succeeding in school or in employment. Success in education is the most powerful marketing strategy.

70. Despite acceptance of the gender policy by the ministry it has not taken measures to implement or integrate the policy into its operations. Addressing gender concerns within its overall mandate or even within the TEVT sector does not appear to be a priority in the ministry compared to other managerial and financial responsibilities. Guidelines and directives in strengthening systems and procedures to support social equity in the TEVT sector were not prepared, which has adversely affected the PIU monitoring of policy and the GAP.

C. Recommendations

1. Project Related

71. **TEVT policy review:** Fundamental institutional reform must be a prerequisite to any further investment in the TEVT sector. The high number of authorities, agencies, and departments involved

in administrative and management functions is costly and confusing. A simplified organizational structure should be considered. The key administrative units are:

- (i) One government ministry and one department responsible for all publicly funded vocational and technical institutions offering programs ranging from NVQ 1 to 6.
- (ii) A high-level TEVT program and school accrediting authority such as TVEC to establish and maintain standards and to verify that accredited institutions (programs) comply with the standards. Power to withdraw accreditation status for non-compliant programs and institutions should be vested in the TVEC.
- (iii) A secretariat such as the National Apprentice and Industrial Training Authority that administers apprenticeship programs for students learning on-the-job should not operate training institutions since this is the role and function of others, as stated in points 1 and 2 above.

72. **Full-time teacher recruitment and appointment:** Policies and procedures must be revised to improve the effectiveness and efficiency of teacher recruitment and appointment. The maximum time to fill a vacant full-time position should be 4 months. ADB should withhold investment in an education institution if full-time teachers are not available, committed, and actively teaching.

73. **Part-time teachers and/or instructors:** The payment schedule for part-time instructors should be reviewed and their hourly rate of pay should be rationalized and accompanied by a contract specifying detailed requirements as part of the terms of reference for the part-time teachers.

74. **Duties of COT Directors:** As first-class government officers, the COT directors should be granted greater administrative autonomy to recruit and appoint teachers and prepare budgets. Further, they should have increased authorization to spend funds appropriately and should be held accountable for their actions.

75. **Education management information systems (EMIS):** Any further investment in EMIS or any other system that theoretically increases the effectiveness and efficiency of decision making should be limited to fixing the existing systems developed under the SDP and the TEDP.

76. **Labor market information system:** TEVT entities should not collect primary data, as this is the responsibility of other ministries or departments. The information from other sources such as the ministry of Labor and Bureau of Foreign Employment should be compiled and analyzed to gauge the demand for TEVT graduates.

77. **Gender and social equity:** In order to build a supportive environment for change, the capacity of the ministry needs to be strengthened further to integrate gender and social equity concerns into the ministry and the institutions coming under its purview.

78. **Access to operating funds:** The appropriate authority should ensure that COTs receive and the directors can use, in a timely manner, funds for purchasing consumable supplies or services.

79. **Equipment procurement:** Specifications for equipment procurement should be prepared with input from subject teachers.

80. **Construction of new buildings:** Construction of new buildings should be authorized only if existing facilities are being used to full capacity.

81. **Competency-based education:** This is an instructional methodology that should be considered as an operational strategy for effective teaching and learning. Labeling programs (courses) as competency-based may be necessary at the early stages of transition from conventional teaching methods to competency-based education, but eventually all programs should be competency-based. Programs and NVQ levels should be linked to the occupational standard for

which the program is intended. Further consolidation of program names and NVQ classifications based on occupational competency standards is needed. Rationalization of programs and use of common nomenclature for all TVEC registered institutions should be undertaken through the TVEC.

82. **Student evaluations:** COT teachers should be responsible and accountable for the formative and summative assessment of students. Cognitive behavioral therapy methodology requires progressive continuous assessment of learner knowledge, skills, and attitudes, which means that the teacher is best equipped to assess learner competency. The TVEC should empower teachers to evaluate student performance and should be authorized to issue the appropriate credential. Each COT should create an evaluation approval committee that scrutinizes and endorses student evaluations completed by various technical teachers.

83. **Issuing certificates:** The TVEC should issue NVQ certificates to students whose names have been submitted by COT teachers and directors. The certificates should be issued within 6 weeks of the names being submitted.

84. **Program auditing:** The TVEC should revise the practice of sending assessors to schools each time there is a final exam. A more appropriate role for assessors would be to serve as program auditors to ensure that the institution and the teachers are functioning at the agreed standards. A quality assurance policy and procedures for auditing programs should be established.

85. **School calendar:** The academic calendar for each COT should have a set minimum of teaching days per year. The start and finish of the school year must be identified and remain constant, with a fixed number of days of instruction. Failure to comply with the school calendar would result in withdrawal of accreditation status and possibly other sanctions.

86. **Career guidance:** There should be increased contact and activities with secondary school teachers and students to keep them apprised of the TEVT options available.

87. **Tracer study:** Career guidance personnel should conduct a centrally organized TVEC tracer study of students' whereabouts and employment status.

88. **Admission to Univotec:** As demand for admission to Univotec increases, it may be possible to revise the admission criteria. Students should not be permitted to enter from NVQ 5. This would ensure that the COTs have an adequate number of students enrolling in NVQ 6 programs, and it would also provide opportunities for increased mathematics, English, and science competencies.

89. **Teacher training:** The most important factor for TEVT teachers is the mastery of knowledge and skills in their respective technical specialties. Professional development activities offered at Univotec should focus on improving technical subject content.

90. **Further action or follow-up:** The executing agency should take the necessary actions to fill the vacant teacher positions in the COTs.

91. **Timing of the project performance evaluation report:** If a report is to be conducted, the evaluation mission should take place in July 2013. The focus of the project performance evaluation report should be on the issues and concerns raised in this project completion report.

2. General

92. Internal efficiency may be improved by increasing the maximum class size from 20 to 25 students. Institutions where the number of qualified applicants for any program is greater than 50 should increase student intake from one group (batch) to two or more per year. Improved scheduling of classes for theory, practice, and other learning activities will be necessary to maximize utilization of teachers, equipment, and facilities.

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/ Monitoring Mechanisms	Achievement at Project Completion	Observations	Assumptions and Risks
A. Project Impact					
<p>Skilled and highly skilled human resources developed to contribute to economic growth and social development</p>	<p>Graduation of technicians increased from about 600 annually to about 2,200</p>	<p>Project completion report</p>	<p>In 2011, a total of 515 students graduated as technicians from 9 COTs</p>	<p>Vacant full-time teaching positions in the majority of COTs have caused cancellation of many programs.</p>	<p>Assumptions</p> <ul style="list-style-type: none"> • Political and socioeconomic conditions Remain stable • Economy continues to create jobs and to require new and higher level skills • Government allocates sufficient budget to the TEVT sector
	<p>About 1,000 technologists within the NVQ framework graduate annually</p>	<p>MSDVTE EMIS data</p>	<p>In 2011, approximately 100 students graduated as technologists from Univotec</p>	<p>The number of students admitted and graduating will increase rapidly over the next 3 years.</p>	
	<p>Employment rate of COT technician graduates increased by 30% over 2002 rate of certificate graduates</p>	<p>Ministry of Education data</p>	<p>Graduate employment rate has increased to approximately 100%</p>	<p>The post-conflict economy of Sri Lanka is very robust and the employment rate is approximately 96%.</p>	
	<p>Females comprise at least 20% of COTs enrollees</p>		<p>In the 6 COTs female participation ratios were 32.6% in 2009, 32.9% in 2010, 26.6% in 2011</p>	<p>Female student enrolment has increased but needs continued support</p>	

Design Summary	Performance Targets/Indicators	Data Sources/ Monitoring Mechanisms	Achievement at Project Completion	Observations	Assumptions and Risks
	Females comprise at least 20% of Univotec enrollees		2012 Univotec female student enrollment exceeds 25%	Female student enrolment is increasing steadily.	
B. Project Outcomes					
Improved access and strengthened capacity of the TEVT system in technical and technological education to address labour market needs	Six technical colleges strengthened to enable them to become COTs	Project completion report MSDVTE EMIS data	Six Technical colleges renovated and upgraded and renamed as Colleges of Technology.	Physical infrastructure improved and name change completed. .	<p>Assumptions</p> <ul style="list-style-type: none"> MSDVTE is effective in leading the TEVT sector and a market responsive TEVT system is maintained
	10 technician diploma programs in different technologies that do not require advanced level qualification for admission developed	Ministry of Education data	12 Technician programs at (NVQ 5 & 6) developed.	A clear distinction between technician, technologist and engineer programs is required.	
	Annual enrollment intake capacity of technician diploma programs increased from 600 to 1,500 full-time and 1,500 part-time students		Enrollment capacity for NVQ 5 and 6 in six COTs has increased by 720 full-time students	Enrollment intake capacity is significantly different from the actual delivery of instruction. Vacant teaching positions limit output of COTs.	

Design Summary	Performance Targets/Indicators	Data Sources/ Monitoring Mechanisms	Achievement at Project Completion	Observations	Assumptions and Risks
	Univotec established		Univotec intake capacity is 280 full-time and 280 part-time students		
	Two degree programs (B.Ed.Tech) and B.Tech) that do not require advanced level qualifications for admissions developed		Completed.	Technologist (NVQ 7) programs require the equivalent of advanced level math, science, and English to succeed at Univotec. Competencies in math, science, and English are essential to avoid failure.	
	Technical teacher education (B.Ed.Tech) institutionalized with annual enrollment intake capacity of 300 full-time and 300 part-time students		B.Ed.Tech is operational and institutionalized. Annual intake capacity is 280 full-time and 280 part-time students	Recruiting full-time students for first intake was a challenge. Part-time study was the solution.	
	Annual enrollment intake capacity of 600 full-time and 600 part-time students in technologist programs (B.Tech) developed		Enrollment intake capacity of 280 full-time and 280 part-time students	Enrollment demand and the number of qualified applicants will increase rapidly over the next 5 years.	
	100 TEVT teachers and		70 COT teachers	In-service	

Design Summary	Performance Targets/Indicators	Data Sources/ Monitoring Mechanisms	Achievement at Project Completion	Observations	Assumptions and Risks
	trainers strengthened		participated in industry training 3-month attachments. 28 COT teachers completed Univotec B.Ed.Tech. 10 Univotec teachers completed a master of education degree in Thailand.	professional development training should be developed to meet the subject knowledge and skills of technical teachers at levels NVQ 1 to 6.	
Project Outputs					
1. Capacity of selected public sector TEVT institutions strengthened to offer technician diploma programs	School management systems and procedures developed and installed	Baseline data Quarterly progress reports	No significant change in management systems resulting from project inputs	Centrally controlled management continues unchanged due to government policy and regulations.	Assumptions <ul style="list-style-type: none"> • Government supports the establishment of COTs that are accountable and have some authority for revenue generation, spending and selection of course offerings • Some decisions are
	24 non-academic and administrative personnel trained in these systems and procedures	Review missions Midterm review	Staff trained in EMIS but software not fully functional at project completion	The majority of modules are not operational. Data may be entered but reports are not generated or used.	

Design Summary	Performance Targets/Indicators	Data Sources/ Monitoring Mechanisms	Achievement at Project Completion	Observations	Assumptions and Risks
	Advisory councils of COTs established	Field visits EMIS Tracer studies Project completion reports Copies of manuals, and curriculum and programs documents	Councils established and meetings held while project funding supported attendance	Sustained participation on advisory committees requires visible changes in COT operations based on recommendations of the advisory committee.	<p>decentralized to COTs</p> <ul style="list-style-type: none"> • Active participation by the private sector in the councils • Timely appointment of Qualified and dynamic heads • Leaders of institutions think strategically and innovatively • Qualified instructors are available • Staff trained and committed to contribute to COT development
	Up to 18 COT officials strengthened in strategic planning and entrepreneurial management		30 COT officials trained	Strategic planning and entrepreneurial management requires delegation of authority from the central authority to COT directors. Continued central control over hiring	

Design Summary	Performance Targets/Indicators	Data Sources/ Monitoring Mechanisms	Achievement at Project Completion	Observations	Assumptions and Risks
				procedures and budget negates any entrepreneurial initiatives.	
	Institutional development and strategic plan developed		Plans developed	Although the plans were developed there is little evidence or likelihood of implementation.	
	12 curricula developed for the technician program		12 standards and curricula developed for NVQ levels 5 and 6.	Curricula developed but use is restricted by teacher shortages.	
	8 sector curriculum councils established		7 sector councils established and used during curriculum development	There is no benefit in continuing sector councils if COTs are unable to implement curriculum.	
	15 COT staff trained in curriculum implementation		16 COT staff trained in curriculum implementation.	The focus should be on subject-related training and teaching methods.	
	30 non-COT staff trained in curriculum implementation		30 non-COT staff trained in curriculum implementation	Curriculum implementation is the duty of the teacher.	

Design Summary	Performance Targets/Indicators	Data Sources/ Monitoring Mechanisms	Achievement at Project Completion	Observations	Assumptions and Risks
	Aptitude test for technicians developed		Aptitude tests developed	It is not clear why a new aptitude test for technicians was necessary. COTs have admission requirements and diagnostic tests to select applicants.	
	3 technician education bridging programs developed		Bridging education programs math, science, computer science and English developed ¹	Distinction between “gap filling” and “foundation” parts of the bridging program is questionable. Improved competency standards and assessment is needed for academic requirements.	
	12 part-time program modules developed		12 modules developed	Part-time studies are greatly in demand.	
	Facilities and equipment operations and maintenance plan and manual developed for each COT		Plans developed, but implementation is frequently delegated to non-existent workshop	Many COT teachers do not take responsibility and pride in keeping their labs or workshops in an orderly, safe, and	

¹ Data is not readily available.

Design Summary	Performance Targets/Indicators	Data Sources/ Monitoring Mechanisms	Achievement at Project Completion	Observations	Assumptions and Risks
			or lab assistants	fully functioning condition.	
	Training provided by suppliers of equipment to 40 staff		124 staff members trained by the suppliers.	Technical subject teachers should know the fundamentals of how lab equipment functions.	
	6 technical colleges renovated and curricula training equipment provided		Renovations completed and equipment delivered to 6 COTS	Instruction manuals were not delivered with the majority of equipment.	
	Staff development plan for COT staff under the project developed and implemented		A staff development plan was included in the report and recommendation of the President and the project administration manual.	The staff development plan was changed during implementation. The quality and relevance of the training received was generally inadequate.	
	B. Ed. Tech degree completed by 67 teachers		B. Ed. Tech degree completed by 28 teachers	There was a shortage of teachers appointed on full-time basis.	
	Industrial attachment and other training completed by 100		Effectiveness of 70 industrial attachments was	At project design, this training was for 100 new teachers	

Design Summary	Performance Targets/Indicators	Data Sources/ Monitoring Mechanisms	Achievement at Project Completion	Observations	Assumptions and Risks
	technical teachers		variable. Estimated less than 40% satisfaction by teachers.	hired for COTs. The failure to recruit and appoint new teachers diluted the outcome and impact of training.	
2. MSDVTE and relevant institutions under its purview strengthened to support a market responsive TEVT system	OBB developed and implemented in COTs	Baseline data Quarterly progress reports Review missions	System developed and training provided, but OBB or performance-based budgeting not fully implemented	Name changed to performance-based budgeting	Assumptions <ul style="list-style-type: none"> • Institutional culture supports output-based budgeting • Data submitted in a timely manner • Program standards are achievable • Low turnover of trained personnel • Industries commit to sectoral councils and contribute to development of standards • Consultants are recruit in
	EMIS refined to include information from COTs and Univotec, particularly OBB-related	Midterm review	EMIS software does not function properly and is not fully used	Skills Development Project included substantial investment in MIS that did not work.	
	GIS mapping of TEVT institutions completed	Field visits EMIS	GIS has not been completed	The need and purpose of including GIS in project design is unclear.	
	12 staff strengthened in EMIS and GIS for policy analysis and planning	Tracer studies	54 Staff members trained in EMIS. GIS is not functioning.	Policy analysis using EMIS and GIS generated reports is not happening.	
	Different TEVT financial sustainability	Project completion	No new financial mechanisms for	New mechanisms would require	

Design Summary	Performance Targets/Indicators	Data Sources/ Monitoring Mechanisms	Achievement at Project Completion	Observations	Assumptions and Risks
	mechanisms designed	report	TEVT designed	changes in well-established government financial policies and procedures. Approval from the appropriate authority is required to implement change.	<p>a timely manner</p> <ul style="list-style-type: none"> • Socio cultural factors support voluntary accreditation and quality monitoring • Training providers are open to being audited
Pilot implementation of selected mechanisms completed	Copies of standards and manuals	No new mechanisms and no pilot implementation	NVQ levels 5 to 7 developed		
NVQ levels 5 to 7 developed		The standards used to define the scope of practice for each NVQ level have been refined	There is a misunderstanding of what the NVQ framework is and how it works. NVQ is a classification framework for all types of vocational and technical education. It is not a new program or a course of instruction.		
NVQ levels 1 to 4 refined for seamless progression to levels 5 through 7		Industry sector councils established	Industry sector councils contributed to standards development.		
Industry sector councils established		Standards developed for 12 technology programs	NVQ level 5 and 6 standards for technicians developed.		
12 technician and technology program standards developed					

Design Summary	Performance Targets/Indicators	Data Sources/ Monitoring Mechanisms	Achievement at Project Completion	Observations	Assumptions and Risks
	55 TVEC, National Apprentice and Industrial Training Authority, and National Institute of Technical Education of Sri Lanka staff trained		286 Staff trained	Usefulness of staff training is not apparent.	
	Registration standards and procedures of TEVT institutions reviewed and refined		Procedures for TEVT providers to register with the TVEC were refined	Program accreditation is typically based on the quality of teachers, the curriculum, equipment, and student learning outcomes. It was difficult to accredit programs with so few students and no teachers.	
	Accreditation standards and transparent procedures developed, quality assurance manual written		TVEC accreditation standards and procedures for TEVT providers developed		
	National association of training providers established		Association established for private training providers	Association established and office space provided by the MYASD.	
	40 prospective auditors trained		40 prospective auditors trained	The distinction between auditors and assessors requires clarification.	

Design Summary	Performance Targets/Indicators	Data Sources/ Monitoring Mechanisms	Achievement at Project Completion	Observations	Assumptions and Risks
	At least 50 audits conducted		28 audits conducted in COTs & TEVT institutions. Balance 22 is being conducted on an on-going basis. Assessors deployed to do final assessment of all students.	Subject teachers should be given authority to assess students. TVEC assessors should audit approximately 20% of school-based assessments.	
	Social marketing strategy and plans developed in collaboration with industry sector associations, JobsNet, and CGCCs (career guidance counseling centers)		Strategy and plan developed	The strategy and plan did not adequately serve the target populations of parents of students from lower income areas, secondary school teachers, and employers.	
	50 MSDVTE, TVEC, and COT staff trained in social marketing and career guidance		50 staff from DTET, COTs, NAITA and Univotec trained	Career guidance units in every COT are spacious and well staffed.	
	Information disseminated through mass media, JobsNet, and career centers.		Information was disseminated, but the impact of the effort is marginal	Mass media such as TV and internet is not readily available or used in remote and poor	

Design Summary	Performance Targets/Indicators	Data Sources/ Monitoring Mechanisms	Achievement at Project Completion	Observations	Assumptions and Risks
				communities.	
3. University focusing in technical education and technology established and operating	University management systems developed, installed, and implemented	Baseline data	University management systems developed and implemented	Systems and plans must retain and support initial concept that Univotec is not to become another traditional university.	<ul style="list-style-type: none"> • UNIVOTEC Act is approved in a timely manner • Consultants are recruited in a timely manner • Public Service Commission recognizes these programs in the government pay scale • Teachers and visiting instructors are available • Trained personnel have a low turnover • Reliable suppliers/bidders/contractors bid
	University corporate plan developed	Quarterly progress reports	Corporate plan developed		
	30 non-academic and administration personnel trained in these systems and procedures	Review missions	28 Non-academic personnel trained	The systems are in place but should be used effectively to support operations of the institutions	
	Study tours by 10 senior officials and 12 deans and heads undertaken	Midterm review	Study tours completed. 10 senior administrators to Germany,6 deans /heads to Thailand,6 deans/heads to Australia	The duration of study tours was reduced from 1 month to 2 weeks. The number of participants doubled.	
	61 academic staff trained in emerging and/or new technologies, curriculum development, flexible delivery modes,	Field visits	Staff trained. Orientation - 15 deans/heads, trainer training-15 staff, training-28 academic non-teaching staff,	Interviews with staff that received training reveal very little benefit from this initiative. The training was irrelevant to staff	
		EMIS			
		Tracer studies			
		Project completion report			
		Copies of manuals, tests, and			

Design Summary	Performance Targets/Indicators	Data Sources/ Monitoring Mechanisms	Achievement at Project Completion	Observations	Assumptions and Risks
	multimedia development, and applied research and extension	materials	subject upgrading training-53 staff, Facility Operations and Management training-28 staff.	needs and too superficial to be of benefit.	
	B. Ed. Tech curriculum developed		Curriculum developed	The program was satisfactory.	
	B. Tech curriculum developed		Curriculum developed	The program was satisfactory.	
	Bridging modules developed		Materials developed	The materials were satisfactory.	
	Phased and rationalized infrastructure development plan, within the project budget, developed		Construction and renovation plan developed	Civil works completed. Some adjustments were made at occupancy for improved use of space.	
	Infrastructure renovated and constructed, as necessary		Civil works completed	The quality of civil works design and construction was very good.	
	Training equipment procured		Equipment procured and installed. The quantity of some equipment exceeded needs	The quality of equipment and its installation at Univotec is good. The ongoing operating costs of	

Design Summary	Performance Targets/Indicators	Data Sources/ Monitoring Mechanisms	Achievement at Project Completion	Observations	Assumptions and Risks
				equipment and consumable supplies (e.g., toner, paper, and electricity) must be considered prior to procurement.	
	Facilities operations and maintenance plan and manual written		Maintenance plan and manual written	The plan and manual will be of little use if they are not implemented.	

COT = college of technology, EMIS = education management information system, GIS = geographic information system, MIS = management information system, MSDVTE = Ministry of Skills Development, Vocational and Technical Education, MYASD = Ministry of Youth Affairs and Skills Development, NVQ = national vocational qualification, OBB = output-based budgeting, TEVT = technical education and vocational training, Univotec = University of Vocational Technology.

PROJECT OUTPUTS AT APPRAISAL, REVISION, AND COMPLETION

Component and Indicator	Unit	Output Target		Status at Completion	Achievement against Target (%)	
		At Appraisal	After Revision		At Appraisal	After Revision
1. Strengthening the Colleges of Technology						
a. School management systems and procedures developed and installed	Systems	6	6	Developed but not implemented	80	80
b. Non-academic and administrative personnel trained in management systems and procedures	People	24	25	Achieved but of questionable quality	50	50
c. An advisory council for each COT established	Councils	6	6	Achieved	100	100
d. Officials from COTs strengthened in strategic planning and entrepreneurial management	People	18	94	Achieved but of questionable quality	50	50
e. Institutional development and strategic plan developed	Plans	6	6	Achieved but not implemented	50	50
f. Curricula developed for technician program	Programs	12	12	Achieved	100	100
g. Sector curriculum councils established	Sector councils	8	8	Achieved	100	100
h. 15 COT staff trained in curriculum implementation	People	15	16	Curriculum is implemented by teachers not by non-teaching staff	0	0
i. 30 non-COT staff trained in curriculum implementation	People	30	30		0	0
j. Manual of student selection procedures and standards developed	Manuals	1	1	Achieved	100	100
k. Aptitude test for technicians developed	Tests	1	1	Achieved	100	100
l. Technician education bridging	Programs	3	3	Achieved	100	100

Component and Indicator	Unit	Output Target		Status at Completion	Achievement against Target (%)	
		At Appraisal	After Revision		At Appraisal	After Revision
programs developed						
m. Part-time program modules developed	Modules	12	12	Achieved	100	100
n. Facilities and equipment operations and maintenance plan and manual developed for each COT	Plans	6	6	Achieved	100	100
o. Training provided by suppliers of equipment to staff	People	40	40	Achieved	100	100
p. Technical colleges renovated and COT curricula training equipment provided	COTs	6	6	Achieved	100	100
q. Staff development plan for COT staff developed and implemented	Plans	1	1	Plan developed during project preparatory technical assistance	100	100
r. B.Ed.Tech degree completed by COT teachers	Teachers	67	42	Partly achieved	65	65
s. Industrial attachment and other training completed by technical teachers	Teachers	100	100	Achieved	70	70
2. Strengthening MSDVTE and Relevant Departments, Authorities, and Commissions						
a. OBB developed and implemented in COTs	Systems	1	1	Developed but not implemented	50	50
b. EMIS (modules) refined to include information from COTs and Univotec, particularly OBB-related information	Systems	12	12	Only a few modules are functional	10	10
c. GIS mapping of TEVT institutions completed	Systems	6	6	Not needed	0%	0%
d. Staff strengthened in EMIS and GIS for policy analysis and planning	People	12	20	Achieved in terms of numbers but not in effective operations	50	50

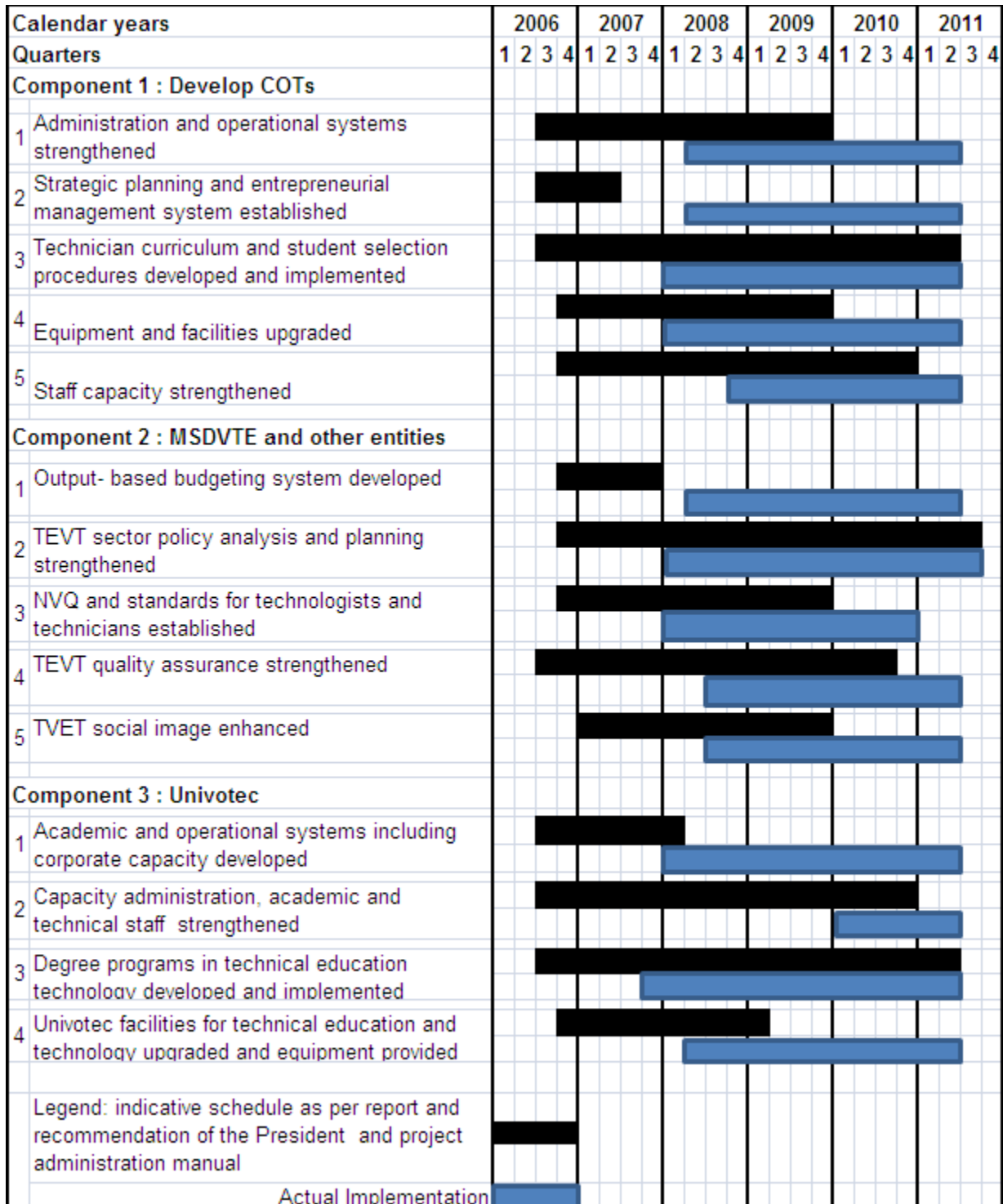
Component and Indicator	Unit	Output Target		Status at Completion	Achievement against Target (%)	
		At Appraisal	After Revision		At Appraisal	After Revision
e. Different TEVT financial sustainability mechanisms designed	Mechanisms	1	1	Designed but not implemented	10	10
f. Pilot implementation of selected mechanisms completed	Mechanisms	1	1	Not implemented	0	0
g. NVQ levels 5 to 7 developed	Standards	3	3	Achieved	100	100
h. NVQ levels 1 to 4 refined for seamless progression to levels 5 through 7	Standards	1	1	Achieved	100	100
i. Industrial sector councils established	Councils	1	1	Achieved	100	100
j. Technician and technologist program standards developed	Standards	12	12	Achieved	100	100
k. TVEC, National Apprentice and Industrial Training Authority, and National Institute of Technical Education of Sri Lanka staff trained	People	55	286	Achieved in terms of numbers but not fully in relevance and effective operations	100	100
l. Registration standards and procedures for TEVT institutions reviewed and refined	Standards	1	1	Achieved	100	100
m. Accreditation standards and transparent procedures developed, and quality assurance manual written	Manuals	1	1	Achieved	100	100
n. National association of training providers established	Associations	1	1	Achieved	100	100

Component and Indicator	Unit	Output Target		Status at Completion	Achievement against Target (%)	
		At Appraisal	After Revision		At Appraisal	After Revision
o. Prospective auditors trained	People	40	51	Trained as assessors	25	25
p. Audits conducted	Audits	50	0	Partially achieved	25	25
q. Social marketing strategy and plans developed in collaboration with industry sector associations, JobsNet, and CGCCs (career guidance and counseling centers)	Plans	1	1	Partially achieved	30	30
r. MSDVTE, TVEC and COT staff trained in social marketing and career guidance	People	50	30	Training relevant for COT staff only	30	30
s. Information disseminated through mass media, JobsNet, and career centers.	Campaigns	Not defined	Not defined	Not Measured	Unknown	Unknown
3. Establishing the University of Vocational Technology						
a. University management systems developed, installed, and implemented	Management systems	1	1	Achieved	100	100
b. University corporate plan developed	Plans	1	1	Achieved	100	100
c. Non-academic and administrative personnel trained in university management systems and procedures	People	30	28	Achieved	100	100
c. Study tours by senior officials, deans, and heads undertaken	People	22	22	Achieved	100	100
d. Academic staff trained in emerging and/or new technologies, curriculum	People	61	76	Achieved	100	100

Component and Indicator	Unit	Output Target		Status at Completion	Achievement against Target (%)	
		At Appraisal	After Revision		At Appraisal	After Revision
development, flexible delivery modes, multimedia development, and applied research and extension						
e. B. Ed. Tech curriculum developed	Curricula	1	1	Achieved	100	100
f. B. Tech curriculum developed	Curricula	1	1	Achieved	100	100
g. Bridging modules developed	Modules	3	3	Achieved	100	100
h. Phased and rationalized infrastructure development plan within the project budget developed	Development plans	1	1	Achieved	100	100
i. Infrastructure renovated and constructed as necessary	Units renovated	12	12	Achieved	100	100
	New buildings	2	2			
j. Training equipment procured	Items	169	169	Achieved	100	100
k. Facilities operations and maintenance plan and manual written.	Plans	1	1	Achieved	100	100

B.Ed.Tech = bachelor of education in technology, COT = college of technology, EMIS = education management information system, GIS = geographic information system, MSDVTE = Ministry of Skills Development, Vocational and Technical Education, NVQ = national vocational qualification, OBB = output-based budgeting, TEVT = technical education and vocational training, TVEC = Tertiary and Vocational Education Commission, Univotec = University of Vocational Technology, CGCCs = career guidance and counseling centers.

IMPLEMENTATION SCHEDULE PLANNED COMPARED TO ACTUAL



COT = college of technology, MSDVTE = Ministry of Skills Development, Vocational and Technical Education, NVQ = national vocational qualification, TEVT = technical education and vocational training, Univotec = University of Vocational Technology.

STATUS OF COMPLIANCE WITH LOAN COVENANTS

Loan Covenant	Reference in Loan agreement	Status of Compliance
The Borrower shall ensure that the governance structures and authorities delegated to the Colleges of Technology (COT) shall be consistent for all 9 COTs.	Schedule 6 Paragraph 8	Complied with.
The Ministry of Skills Development Vocational and Technical Education (MSDVTE) shall ensure that heads of the COTs shall be selected through a process of open application and that selection shall be based on merit. The selection committee in MSDVTE shall include members from industries. All heads of COTs shall be appointed within 2 months of the Effective Date.	Schedule 6 Paragraph 9	Complied with.
Within 3 months of the Effective Date, the head of each COT shall have established an advisory council and shall have convened its first meeting. At least 60% of its members shall be representatives from employers, manufacturing and service sectors and industries with the rest being senior staff members of each COT.	Schedule 6 Paragraph 10	Partially complied with. Six councils were established, but generally less than 30% of representatives were employers from manufacturing, services, or industry.
Within 2 years of the Effective Date, MSDVTE shall have developed, approved and introduced new technician curricula with various technology specifications including bridging programs. MSDVTE shall ensure that technician programs in all COTs conform to the same program standards and shall not vary in structure.	Schedule 6 Paragraph 11	Complied with.
Within 1 year of the Effective Date, MSDVTE shall have developed and institutionalized a procedure for the overall selection of applicants to the technician education program, including an admission test. The General Certificate of Education Advanced Level (GCE A / L) shall not be made entry requirement. More specifically, having a national vocational qualification (NVQ) Level 4 qualification shall be treated equally as having GCE A/L. Specific admission criteria for each individual program shall be finalized within 1 month after finalizing each new technician curriculum.	Schedule 6 Paragraph 12	Complied with.
The Borrower shall ensure that within 3 years of the Effective Date, the Ministry of Public Administration shall recognize the diplomas issued by COTs for entry into public service.	Schedule 6 Paragraph 13	Complied with. (Note: The TVEC is the issuing authority for diplomas, not the COTs)
MSDVTE shall ensure that COT staff participating in staff development activities shall be replaced on an interim basis to ensure the continuity of training in COTs.	Schedule 6 Paragraph 14	Partially complied with.
If the Bachelor of Technical Education Program shall not have started within 2 years of the Effective Date, MSDVTE shall	Schedule 6 Paragraph 15	Complied with.

Loan Covenant	Reference in Loan agreement	Status of Compliance
ensure that an equivalent program arrangement for upgrading the qualifications of staff shall be developed, entered into, and implemented. Implementation of such program shall start within 3 years of the Effective date.		
Within 1 year of the Effective Date, the Management Services Department of the Ministry of Finance and Planning and MSDVTE shall have agreed upon and shall have approved the cadre of trainers, instructors as well as technical and administrative staff needed for the effective and efficient operation of the 9 COTs and UNIVOTEC.	Schedule 6 Paragraph 16 (A)	Complied with. The cadre may have been approved, but teachers were not appointed.
Within 2 years of the Effective Date, at least 90% of such cadre shall have taken up their position. Women shall comprise at least 20% of the academic staff by the end of the third year of project implementation.	Schedule 6 Paragraph 16 (B)	Not complied with.
Within 2 years of the Effective Date, MSDVTE shall have approved and fully institutionalized the outcomes-based budgeting (OBB) for the COTs, including its related management information system. MSDVTE shall ensure that, from the third year of project implementation onwards, all budgetary allocations for the COTs shall be in accordance with OBB.	Schedule 6 Paragraph 17	Partially complied with. Approved but not fully implemented.
Within 2 years of the Effective Date, the Tertiary and Vocational Education Commission (TVEC) shall complete studies on cost recovery mechanism and shall have been initiated in at least 3 project COTs.	Schedule 6 Paragraph 18	Partially complied with. The studies were completed but not implemented.
Within 3 years of the Effective Date, MSDVTE shall have prepared a 5-year budget and sustainability plan for the COTs and UNIVOTEC, and relevant authorities shall have approved such a plan. The approved plan shall include clear budgetary allocations for consumables on an expanding basis, as well as a decision to move the operations and maintenance costs for the COTs and UNIVOTEC from the development budget to the recurrent budget by the end of the project.	Schedule 6 Paragraph 19	Complied with.
Within 3 months of the Effectiveness of the Univotec Act, MSDVTE shall have notified the members of its governing body and the governing body shall have held its first meeting.	Schedule 6 Paragraph 20	Complied with.
Within 2 years of the Effective Date, MSDVTE shall have developed approved, approved and introduced new curricula leading to Bachelor of Technology and Bachelor of Technician Education at the UNIVOTEC.	Schedule 6 Paragraph 21	Complied with.
Within 1 year of the effectiveness of the Univotec Act, UNIVOTEC shall have developed and institutionalized transparent and merit-based procedures for the selection of the participants to the degree programs. The requirements shall include NVQ levels 5 and 6 or equivalent qualifications.	Schedule 6 Paragraph 22	Complied with.

Loan Covenant	Reference in Loan agreement	Status of Compliance
Gender and Social Equity		
MSDVTE shall ensure that the Project shall be implemented in accordance with the Ethnic Minority Development Framework agreed upon between the Borrower and the ADB and in accordance with the Gender Action Plan. MSDVTC shall ensure that both the Ethnic Minority Development Framework and the Gender Action Plan shall be fully implemented in a timely manner, and that adequate resources shall be allocated for this purpose.	Schedule 6 Paragraph 23	Complied with.
Within 1 year of the Effective Date, MSDVTE shall have developed and approved a policy and action plan to ensure equal access for different population groups to COTs and the UNIVOTEC. Such a policy and action plan shall include issues such as student selection and allocation criteria, and awareness-raising activities. MSDVTE shall ensure that the governing bodies of the UNIVOTEC and each COT shall adopt such policy and action plan and shall implement them as of year 2 of the project implementation.	Schedule 6 Paragraph 24	Complied with.
The Borrower shall ensure that all facilities of the UNIVOTEC and the COTs to be constructed extended or upgraded under the Project shall be located on land owned by the Borrower and no displacement or resettlement of people, including squatters, shall be involved. If no such land is available, the Borrower shall ensure that there will be no compulsory acquisition of land or assets for such new construction, expansion or upgrading, but that land shall be purchased in the open market on a willing buyer/willing seller basis. In the ADB hereof and prepare a resettlement plan in accordance with the resettlement framework agreed upon between the Borrower and ADB. No construction shall start, unless ADB shall have approved such resettlement plan, shall have been paid in full.	Schedule 6 Paragraph 25	Complied with.
The Borrower shall ensure that civil works contractors comply with all applicable labor laws, do not employ child labor for construction and maintenance activities and do not differentiate wages between men and women for work of equal value. A specific clause shall be included in bidding documents, and compliance will be strictly monitored during Project Implementation.	Schedule 6 Paragraph 26	Complied with.
Environmental		
The Borrower shall ensure that the design, extension, upgrading, renovation and operations of facilities under the project will follow the Borrower's environmental requirements, the Bank's environmental policy for selected infrastructure Development Projects, and other relevant Bank policies on environment.	Schedule 6 Paragraph 27	Complied with.

Loan Covenant	Reference in Loan agreement	Status of Compliance
Where substances designated as hazardous or toxic under Sri Lankan legislation are to be used as part of the training activities, provisions for waste management plans, focusing on the protection of human health and the environment against harmful effects caused by the collection, transport, treatment, storage and disposal of waste, shall be made. Where possible, recovery and use of recovered materials shall be encouraged to conserve natural resources.	Schedule 6 Paragraph 28	Complied with.
Within 6 months of the Effective Date and in accordance with relevant labor legislation, each institution involved in delivering training courses shall prepare and approve an Occupational Health and Safety Plan (OHSP) covering work-related health and safety issues of personnel and public. The OHSP shall include an emergency plan for accidents and calamities.	Schedule 6 Para 29	Complied with.
Financial		
The Borrower shall ensure to annually allocate sufficient budget for counterpart funds in accordance with the financing plan of the Project. This includes, but is not limited to, funds for the operation and maintenance of the COTs and UNIVOTEC.	Schedule 6 Paragraph 5	Complied with.
The Borrower shall ensure that throughout the entire duration of the Project, sufficient budget shall be allocated in its recurrent budget to maintain the 2005 – 2006 level of operation and maintenance of the technical and vocational schools funded under TEDP.	Schedule 6 Paragraph 6	Complied with.
Others		
The MSDVTE shall be the Project Executive Agency, responsible for overall Project management and coordination of Project activities.	Schedule 6 Paragraph 1	Complied with.
The Project Steering Committee (PSC), chaired by the Secretary MSDVTE, shall provide overall direction to the Project, monitor its activities and outputs, provide adequate guidance to the PIU, and coordinate and liaise between different government agencies and departments. PSC members shall include representatives from the Ceylon-German Technical Training Institute, DTET, NAITA, NITESL, TVEC, VTA, Univotec, one representative from the Ministry of Education with responsibility for higher education, as well as from the External Resources Department, Department of National Planning, and Department of National Budget of the MOFP. In addition, the PSC shall include at least 4 representatives from industries and small and medium employers as well as two representatives of Project COTs on a rotating basis. The PSC shall meet whenever necessary, but not less than once a quarter. The Project Director shall act as its member secretary.	Schedule 6 Paragraph 2	Complied with.
The MSDVTE policy working group, established within	Schedule 6	Complied with.

Loan Covenant	Reference in Loan agreement	Status of Compliance
MSDVTE, shall provide TEVT policy guidance and technical advice to the PIU, and ensure the continuity and consistency of reforms and changes to TEVT policy and MSDVTE training institutions.	Paragraph 3	
The PIU for TEDP shall be responsible for the day-to-day project implementation. The Project Director shall be assisted by specialists for administration and finance, procurement, civil works, and project performance monitoring and reporting. The PIU shall closely coordinate and collaborate with focal persons in each Project COT and MSDVTE training institutions. More specifically, the PIU shall coordinate with DTET for component 1 and with TVEC and the Planning Division of MSDVTE for Component 2. Prior to passage by Parliament of the University of Vocational Technology Act, the PIU shall coordinate with UNIVOTEC for the implementation of Component 3. For each Project COT, the Focal person shall be the head of that COT. Focal persons in other implementing agencies shall be appointed within one month of the Effective date.	Schedule 6 Paragraph 4	Complied with.
In addition to regular reviews, the MSDVTE and ADB shall jointly undertake a mid-term review (MTR) during the third year of project implementation. The MTR shall: (a) review the project scope, design, implementation arrangements, institutional development and capacity processes; (b) review changes in the Borrower's policies and institutional framework since appraisal and evaluate their impact on the project; (c) assess project implementation against performance indicators; (d) review compliance with loan covenants; (e) identify critical issues and constraints, if any; and (f) recommend changes in the design or implementation of the Project as needed. Specific attention shall be given to a review of (a) the number of staff that have received overseas training and that have been retained; (b) access of minority groups and of women to COTs and to UNIVOTEC; and (c) the impact of OBB on the overall efficiency of the COTs. At the latest one month prior to the MTR, the PIU shall submit to ADB a comprehensive report on each of the above-mentioned issues.	Schedule 6 Paragraph 30	Complied with.
At the latest 30 days prior to the start of each fiscal year, MSDVTE shall provide ADB with a copy of the Project operational plan for the coming fiscal year. Each annual Project operational plan shall meet the following criteria: (a) it shall include fully costed proposed project activities for each component and subcomponent, linked with performance targets; (b) it shall include measures for compliance with loan covenants; (c) it shall include a withdrawals as well as counterpart funds; and (d) it shall include a detailed description of how proposed project activities shall be integrated into the existing structures and with other ongoing programs and activities.	Schedule 6 Paragraph 31	Complied with.

Loan Covenant	Reference in Loan agreement	Status of Compliance
The PIU shall be responsible for project monitoring and evaluation, based on the system put in place under the TEDP. Within 4 months of the Effective Date, a baseline study shall be finalized, including the following indicators: internal efficiency of the Project COTs; external efficiency and cost effectiveness of ongoing technician and technology programs; gender disaggregation of application, enrolment, graduation and staffing numbers in ongoing technician and technology programs.	Schedule 6 Paragraph 32	Complied with.
Without limiting the generally of section 6.05(a) of the loan Regulations, the Borrower shall furnish, or cause to be furnished, to ADB quarterly reports on the carrying out of the Project and on the operation and management of the Project facilities.	Article IV Section 4.03	Complied with.

COT = college of technology, MSDVTE = Ministry of Skills Development, Vocational and Technical Education, GCE A/L = General Certificate of Education Advanced Level, NVQ = national vocational qualification, Univotec = University of Vocational Technology, OBB = output-based budgeting, TVEC = Tertiary and Vocational Education Commission, OHSP = Occupational Health and Safety Plan, TEDP = Technical Education Development Project, PSC = project steering committee, DTET = Department of Technical Education and Training, NAITA = National Apprentice and Industrial Training Authority, NITESL = National Institute of Technical Education Sri Lanka, TVEC = Technical and Vocational Education Commission, VTA = Vocational Training Authority, MOFP = Ministry of Finance and Planning, PIU = project implementation unit, TEVT = technical education and vocational training, MTR = mid-term review.

ECONOMIC ANALYSIS AND POVERTY ASSESSMENT

I. Introduction

1. This appendix describes the results of the financial and economic analysis of the Technical Education Development Project (TEDP), and also presents an assessment of the poverty impact of the project. The first section presents the financial assessment of the project, followed by a detailed economic analysis including the recalculation of the economic internal rate of return (EIRR). This is followed by an assessment of the impact on poverty alleviation by the different project components.

II. Financial Analysis

2. This section presents a financial analysis of the project. The project did not generate revenues; hence, the financial analysis presented below is an assessment of the availability and commitment of counterpart funds from the executing agency, the financial status of the two main implementing agencies, and some aspects of government spending on the technical education and vocational training (TEVT) sector as a whole.

A. Counterpart Funds

3. The expectations at appraisal of the availability of counterpart funds from the government have been largely realized, with the Ministry of Youth Affairs and Skills Development (MYASD) accounting for 0.4% of total government expenditure against 0.3% at appraisal. Table A5.1 shows the expenditure during 2011.

Table A5.1: Ministry of Youth Affairs and Skills Development Annual Expenditure as a Percentage of Total Government Expenditure, 2011
(SLRs million)

	Total Expenditure	Recurrent Expenditure	Capital Expenditure
Total Government Expenditure	1,955,678	1,020,264	946,247
Expenditure – Ministry of Education	30,986	26,697	4,289
Expenditure – MYASD	7,026	3,470	3,556
Expenditure – MYASD as % of Total			
In 2011	0.4%		
At Appraisal 2005	0.3%		

MYASD = Ministry of Youth Affairs and Skills Development.

Sources: Central Bank of Sri Lanka. 2011. *Annual Report*. Colombo; ADB. 2005. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Technical Education Development Project*. Manila.

4. Table A5.2 shows the financial performance of the project during the period of implementation to illustrate the trend of expenditure.

5. The expenditures were less than the allocation for every year except 2010. This is because some of the procurement activities had been delayed until 2008 due to several factors, including delays in the recruitment of staff to the project implementation unit (PIU) and the colleges of technology (COTs), as well as in the establishment of the University of Vocational Technology (Univotec). All activities and disbursements peaked in the year preceding project completion.

Table A5.2: Technical Education Development Project Annual Allocation and Expenditure
(SLRs million)

	Allocation	Expenditure	Expenditure %
2006	0	0	0.0%
2007	79.1	71.8	90.8%
2008	558	266.7	47.8%
2009	700	455.8	65.1%
2010	1,064.1	1,063.9	100.0%
2011	710	475.6	67.0%
Total	3,111.2	2,333.8	75.0%

Source: Project Completion Report, Project Implementation Unit, Technical Education Development Project, 2011.

6. The expenditures were less than the allocation for every year except 2010. This is because some of the procurement activities had been delayed until 2008 due to several factors, including delays in the recruitment of staff to the project implementation unit (PIU) and the colleges of technology (COTs), as well as in the establishment of the University of Vocational Technology (Univotec). All activities and disbursements peaked in the year preceding project completion.

B. Financial Performance of Implementing Agencies

7. The two main implementing agencies were the Department of Technical Education and Training (DTET) and Univotec, following its establishment in 2008. The directors at the COTs informed the project completion review mission that they received the funds allocated to them for project activities without any significant delays. However, they also mentioned the need for more financial autonomy in meeting urgent and often relatively minor requirements, especially given that they run institutions that require a high volume of consumables as part of teaching. The constraints in operating under a government department delayed the expenditure process, especially in utilizing some of the assets procured under the project. However, the mission was able to observe that most consumables required for teaching were available at the COTs and that training equipment was well maintained.

8. Table A5.3 shows the summary of annual DTET expenditure for 2010. Overall expenditure was 86% of the funds provided, showing that operations were within the budget. While staff payments were as planned for both permanent and visiting staff, there was a shortfall in all types of capital expenditure, such as acquisition of buildings and equipment. Salaries of permanent staff accounted for 76% of recurrent expenditure, and payments to visiting staff accounted for only 7% of total recurrent expenditure.

9. For Univotec, total operating revenue in 2010 was SLRs123 million, while total operating expenses were SLRs126 million, leaving an operating deficit of SLRs3 million. The recurrent grant from the government accounts for 61% of revenues, while net revenue from academic activities contributes only 9% of revenues. Staff salaries account for 74% of operating expenses, compared with 76% for the DTET. Staff salaries therefore account for the most significant outflow of expenses for both institutions.

Table A5.3: Department of Technical Education and Training – Summary of Expenditure, 2010
(SLRs '000)

	Provision	Actual	Actual as % of Provision
Recurrent Expenditure			
Personal Emoluments	700,450	705,309	101%
Visiting Staff Payments	68,300	67,843	99%
Other	191,525	153,926	80%
Subtotal	960,275	927,078	97%
Capital Expenditure			
Rehabilitation of Capital	45,400	17,506	39%
Acquisition of Equipment	67,700	5,114	8%
Construction of Buildings	91,000	55,140	61%
Other	9,700	2,566	26%
Subtotal	213,800	80,326	38%
TOTAL	1,174,075	1,007,404	86%

Source: Statistical Handbook on Technical Education, Department of Technical Education and Training, 2011.

10. For Univotec, total operating revenue in 2010 was SLRs123 million, while total operating expenses were SLRs126 million, leaving an operating deficit of SLRs3 million. The recurrent grant from the government accounts for 61% of revenues, while net revenue from academic activities contributes only 9% of revenues. Staff salaries account for 74% of operating expenses, compared with 76% for the DTET. Staff salaries therefore account for the most significant outflow of expenses for both institutions.

C. TEVT Sector Performance

11. Some of the issues relating to the TEVT sector are reflected in the financial performance of the entire sector. Table A5.4 shows a comparison of costs in the general education system and the vocational training system, with the DTET used as an example of the latter. Two features are noteworthy in the comparison. First, the student to teacher ratio in the DTET system at 56 students per teacher is three times that of the general education system. The second feature is the much higher cost per student in the DTET system, which is only partly due to the higher costs of depreciation of training equipment and consumables. The student to teacher ratio could be vastly improved, almost to the levels of the general education system, if all the teaching cadre vacancies at the DTET are filled. This would also enable a larger throughput of students, improving the cost per student indicator at the DTET institutions and realizing economies of scale.

Table A5.4: Comparative Costs and Other Indicators – General Education and Vocational Training Systems, 2011

General Education System	
Total secondary and primary students	3,970,000
Total secondary and primary teachers	217,000
Student–teacher ratio, A-Level science	23
Student–teacher ratio, A-Level arts/commerce	19
Student–teacher ratio overall	18
Total education budget (SLRs)	30,986,000,000
Budget per student (SLRs)	7,805
Vocational Training System (DTET)	
DTET total enrollment 2011	23,002
DTET total teaching staff (permanent)	409
DTET student–teacher ratio	56
Total DTET budget (SLRs)	1,298,810,000
Budget per student (SLRs)	56,465

DTET = Department of Technical Education and Training.

Sources: Central Bank of Sri Lanka. 2012. *Economic and Social Statistics of Sri Lanka*. Colombo; Department of Technical Education and Training. 2011. *Statistical Handbook on Technical Education*.

D. Cost Recovery of TEVT Provision

12. As noted in the poverty assessment section of this report, most students in the vocational training system, especially those at national vocational qualification (NVQ) levels 5 and above, appear to have the ability to meet at least part of the costs of training. The mission noted that around half of the NVQ level 5 telecommunications students at the Galle COT (not project assisted) had their own laptop computers. In addition, all parents met by the mission at all project-assisted COTs were from the middle income group.

13. The issue of cost recovery from students with the ability to pay has been under much discussion in the TEVT sector.¹ During the period of project implementation, the TEDP PIU commissioned a study to examine aspects of financial management of the TEVT sector in Sri Lanka. The objective of the study was to propose a costing methodology to help identify the cost of TEVT programs and to propose alternative cost recovery mechanisms to ensure the financial sustainability of the public sector TEVT programs. A sample survey was used to obtain views of existing and potential students, officials of training organizations such as the DTET, the National Apprenticeship and Industrial Training Authority, and the Vocational Training Authority. The study identified and recommended two types of cost recovery and funding methods. The first category included options for revenue generation such as training levies and non-core income generating activities. The second category included cost management options such as cost rationalization and the implementation of a voucher system.

¹ Technical Education Development Project. 2009. *Study on Quantification of Economic and Social Benefits Contributed by the TEVT Sector*.

14. The mission, after meetings with different types of stakeholders, believes that any initiative to generate funds through cost recovery has to be accompanied by corresponding freedom for the respective institutions to manage the incoming funds. At present, these funds are remitted to the government, meaning that the opportunity to invest the earned funds in any requirements, especially at the COTs, is lost.

15. Under present budgetary constraints, the DTET is able to offer starting salaries to graduate teachers that are only slightly above salaries available to NVQ level 4 graduates and substantially below the starting salaries of NVQ level 5 graduates. Most students who are employed and who attend part-time courses at the COTs have the ability and willingness to pay for the courses which have the potential to be self-financing. Yet, these courses are unable to meet demand due to the government system's limited pay scale, which only remunerates part-time lecturers at the rate of SLRs400 per hour. The sustainability of the TEVT system therefore depends on the rationalization of teacher salaries, both full-time and part-time.

E. Efficiency of TEVT Providers

16. Another area of interest is the relative financial efficiency of the different types of TEVT providers. The mission was able to observe during visits to the COTs that efficiencies are not being realized due to poor utilization of the facilities, which is linked to low staff and student numbers. The study commissioned by the TEDP PIU also sought to identify performance indicators to measure the efficiency of public and private sector TEVT providers, to compare the two categories, and to recommend ways to improve efficiency. The indicators covered students and staff performance, financial performance, and facilities. The study concluded that there is a wider range of efficiency in private TEVT organizations, while the average efficiency values of nongovernment organizations were marginally higher than public sector institutions.

III. Economic Analysis

A. Expectations at Appraisal

17. The focus of the economic analysis at appraisal was the increased output of trained technicians and technologists required by the Sri Lankan economy to keep up with changing technologies and globalized markets. As pointed out at appraisal,² the ratio of technicians to craftsmen or skilled workers in Sri Lanka was extremely low (1:50) compared to the normal ratio for a developing economy (1:5). To improve the situation and correct the imbalance, the project aimed at increasing the output of diploma-qualified technicians and graduates with a B.Tech degree. To achieve these objectives, the project upgraded and assisted six COTs and Univotec was established. The project also supported the strengthening of the assigned ministry, then known as the Ministry of Skills Development, Vocational and Technical Education, and also in the training of teaching staff in the vocational training sector.

B. Methodology

18. The parameters and assumptions used at appraisal are used to recalculate the EIRR for the project. The EIRR is calculated over a 15-year period. The project benefits anticipated at appraisal were as follows:

- (i) Increased labor productivity, and thereby higher wages, of COT graduates who will be trained by the B.Ed.Tech graduates supported by the project.

² ADB. 2005. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Technical Education Development Project*. Manila.

- (ii) The B.Tech program offered by Univotec will produce 1,200 graduates per year by the fifth year of implementation, offering a stream of benefits represented by their incremental earnings.
- (iii) The diploma in education (NVQ levels 5 and 6) programs offered by COTs will produce 3,000 diploma holders by the fifth year of implementation, who will also contribute a stream of benefits through their incremental earnings.

19. The above benefits are consistent with and identical to the project targets in the project logical framework, which also remained unchanged during the project implementation period. The economic costs are the capital costs during the period of project implementation, while the recurrent costs also include the costs incurred by the students' families during the respective study periods.

20. At appraisal, the project was expected to yield an EIRR of 20.4% and a net present value of \$14.7 million, assuming a discount rate of 12%.

21. The current analysis is based only on the measurable benefits. The analysis utilizes economic border prices, using the world price numeraire. The actual costs incurred during project implementation are divided into traded, non-traded, and labor components with a further categorization into civil works, general material, training, and recurrent expenses. A standard conversion factor of 0.9 is used to derive general economic prices. Since the project areas in the provinces show significant unemployment and underemployment especially for youth targeted by the project, the labor costs are converted to economic prices by the use of a shadow wage factor of 0.81 and the standard conversion factor. Other conversion factors are derived for each of the cost categories based on the weight of traded and non-traded goods in each category.

C. Results of Analysis

22. Table A5.9 shows that the recalculated EIRR is 6.3%, which is a very low value when compared to the EIRR at appraisal of 20.4%. This result reflects the very poor efficiency of the resources utilized under the project and requires a detailed evaluation.

23. The primary reason for the low EIRR result is the low benefits stream realized from the project benefits due to the lower than targeted student throughput both at the COTs and Univotec, especially at the COTs. The annual capacity intake at Univotec was provided to the project completion review mission as 240 students. The actual number of students admitted was 195 for 2010–2013, while 27 students were admitted the B.Ed.Tech. stream for the same period. The COTs were expected to have an annual intake of 3,000 diploma students (NVQ levels 5 and 6) by the fifth year of the project. Table A5.5 illustrates the low rate of achievement of the project targets.

24. The reasons for the poor achievement of targets are diverse. There was a delay in the establishment of Univotec because of reasons outside the control of the project, namely the delay in passing the relevant legislation through Parliament, which eventually took place only in the third year of the project. The COTs, under the purview of the DTET, have a large number of vacancies in the teaching cadre, which has led to poor efficiency in utilizing project resources. The DTET informed the mission that 800 vacancies exist in the DTET system, for which 186 teachers have been selected but are still awaiting approval from the Public Service Commission. The mission was able to observe many instances of project-funded training equipment lying idle at the COTs due to a lack of teachers and students. Some of this equipment was procured at high cost (e.g., the biomedical laboratory at the Maradana COT). The economic analysis benefits stream is based on the assumption of an annual increase in the intake capacity of COTs of 10% to accommodate an increase in teachers.

**Table A5.5: Student Intake
Appraisal Estimates versus Actual**

Institution	Qualification	Appraisal Target by 2010 (no. of students)	Actual Intake 2010–11 (no. of students)	% of Target
Univotec	B Ed.Tech	600	27	5%
	B.Tech	1,200	195	16%
COTs	Diploma NVQ 5 & 6	3,000	969	32%

B.Ed.Tech = bachelor of education in technology, B.Tech = bachelor of technology, COT = college of technology, NVQ = national vocational qualification, Univotec = University of Vocational Technology. Sources: Univotec. 2010. *Annual Report*; Department of Technical Education & Training. 2010. *Statistical Handbook*; ADB. 2005. Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Democratic Socialist Republic of Sri Lanka for the Technical Education Development Project. Manila.

25. The reasons for the poor achievement of targets are diverse. There was a delay in the establishment of Univotec because of reasons outside the control of the project, namely the delay in passing the relevant legislation through Parliament, which eventually took place only in the third year of the project. The COTs, under the purview of the DTET, have a large number of vacancies in the teaching cadre, which has led to poor efficiency in utilizing project resources. The DTET informed the mission that 800 vacancies exist in the DTET system, for which 186 teachers have been selected but are still awaiting approval from the Public Service Commission. The mission was able to observe many instances of project-funded training equipment lying idle at the COTs due to a lack of teachers and students. Some of this equipment was procured at high cost (e.g., the biomedical laboratory at the Maradana COT). The economic analysis benefits stream is based on the assumption of an annual increase in the intake capacity of COTs of 10% to accommodate an increase in teachers.

26. The achievement of the project targets, and therefore the efficiency of the project, could not have been possible without a simultaneous change in the operating environment of the COTs. The salaries of teachers should have been raised from the current government established rates, which are not attractive, and the recruitment of teachers should have been more prompt with quicker government facilitation.

D. Sensitivity Tests

27. Sensitivity tests were conducted on several parameters to observe the effects on the EIRR to changes in project assumptions. The results are shown in Table A5.6.

28. The results of the sensitivity tests show that the EIRR is most sensitive to changes in the COT student intake, as also noted in the analysis above. In fact, an increase in the intake of students to levels 5 and 6 at the COTs by 20% each year will increase the EIRR to 24.6%, raising the project viability to the levels anticipated at appraisal. The project is not very sensitive to either increase in the expected pay of graduates or any increases in recurrent costs.

Table A5.6: Sensitivity Tests

Parameter	EIRR %
Base EIRR	6.3%
Increase COT annual student intake by 10%	16.1%
Increase COT annual student intake by 20%	24.6%
Increase COT graduate salaries by 10%	9.9%
Increase Univotec annual intake by 10%	6.4%
Increase Univotec graduate salaries by 10%	7.9%
Increase in recurrent costs by 10%	5.4%

COT = college of technology, EIRR = economic internal rate of return,
Univotec = University of Vocational Technology.
Source: Mission computations.

E. Indirect and Non-Quantifiable Benefits

29. The project was able to introduce some indirect economic benefits as a result of the various project interventions. Some of these are listed below.

- (i) The project has contributed to an increase in the numbers of students trained in information and communications technology (ICT) to meet the needs of the national economy. The institutions under the DTET enrolled a total of 280 students at NVQ levels 5 and 6 in 2011, while 2,114 students were enrolled at NVQ levels 3 and 4. The ICT workforce in Sri Lanka is estimated to grow at 10,000 per year according to the Information and Communication Technology Agency, while the sector, together with the related business process outsourcing sector, is already the sixth-largest source of foreign earnings.
- (ii) During field visits, the mission saw increased awareness of the NVQ system among students and parents. Some students and parents see a pathway to higher qualifications through the NVQ system, thus preventing undue expense and time in attempting to advance through the traditional educational system. It must be emphasized that the NVQ “brand” is still largely unknown among employers and industries. The advantages of the system, especially its emphasis on competencies, should be publicized to employers to reap additional economic benefits, especially a narrowed salary gap between graduates and NVQ-qualified technicians. In the long term, the adoption of NVQ standards both in recruiting workers and setting their remuneration will improve the linkages of the Sri Lankan economy with the global system.

IV. Poverty Assessment

A. Background and Poverty Reduction Strategy

30. This section provides an assessment of the poverty impact of project interventions, which were designed to empower the target group to succeed in income-generating activities rather than provide direct income benefits. The strategy adopted by the project for the reduction of poverty in the project area was based around improving the availability of vocational training in the provinces. This was based on the assumption that a higher proportion (21%) of the rural population was poor at the time of the design of the project, compared to only 6% of the urban population. By upgrading one technical college in each province to a COT, youth from the

poorest households who were at a disadvantage in pursuing tertiary education would be given an opportunity to meet their aspirations. This was expected to reduce levels of poverty.

31. Table A5.7 shows the correlation between poverty levels and the level of education of youth in each province. Poverty is expressed as the poverty headcount ratio. The level of education, as indicated by the percentage of youth who have passed the General Certificate of Education (GCE) Advanced Level examinations, is higher in the provinces where poverty is less severe, thereby validating the poverty objectives of the project.

Table A5.7: Poverty and Education Level – By Province

Province	Poverty Headcount Ratio %	Passed GCE A-Level %
Western	4.2%	15.4%
Southern	9.8%	11.6%
Central	9.7%	10.6%
Northern	12.8%	7.0%
Eastern	14.8%	7.4%
North Western	11.3%	9.4%
North Central	5.7%	7.5%
Uva	13.7%	7.0%
Sabaragamuwa	10.6%	9.9%
All Island	8.9%	11.2%

GCE = General Certificate of Education.

Source: Department of Census and Statistics. 2009–2010. *Household Income and Expenditure Survey*. Colombo.

32. Table A5.8 shows that household expenditure on education is highest in the Western Province.

Table A5.8: Household Expenditure on Education
(SLRs/Month)

Province	Total Monthly Expenditure Household SLRs/ Month	Expenditure On Education SLRs./ Month	Expenditure on Education as % of Total
Western	42,399	1,708	4.0%
Southern	28,809	974	3.4%
Central	28,308	799	2.8%
Northern	25,656	642	2.5%
Eastern	25,265	602	2.4%
North Western	25,927	647	2.5%
North Central	29,480	758	2.6%
Uva	23,547	613	2.6%
Sabaragamuwa	25,583	675	2.6%
All Island	31,331	1,018	3.2%

Source: Department of Census and Statistics. 2009–2010. *Household Income and Expenditure Survey*. Colombo.

33. During interviews, students showed an interest in taking up employment in the Western Province because opportunities in fields such as information technology were available only in the Greater Colombo area. Qualified TEVT students identified the lack of suitable employment opportunities in provincial localities as a major problem. Therefore, while the project interventions would boost the economic condition of the provincial students and their families, their contribution to the economy would most likely take place in the Western Province.

B. Poverty Impact of Project Interventions

34. The project investments sought to upgrade existing facilities both to increase the output of vocational training graduates and to improve the quality of training. The focus of the interventions was in improving the quality of the NVQ levels 5 and 6. These two levels are the stages just prior to the level of a university degree (level 7), which was made possible by the establishment of project-assisted Univotec in 2008. In evaluating the impact of the project on poverty reduction, the impact of the above interventions should be the main focus.

35. The mission was able to meet around 40 students who had followed the NVQ level 5 and 6 courses at the COTs assisted by the project, together with a number of their parents. The observations of the mission can also be compared for the purpose of validation with data collected by two project-funded socioeconomic studies.³ More than 90% of the students met by the mission stated that their objective in following level 5 and 6 courses at the COTs was to establish a pathway to a university degree at Univotec. All the students had not obtained sufficient marks on the GCE Advanced Levels to qualify to enter the traditional universities, and had applied for the COT courses without any intention of leaving with a diploma and seeking employment as technicians. This implies that both students and parents were aware that the students would not earn an income for 3 to 4 years into the future, and that admission to Univotec in the Colombo area would also mean additional living expenses for the students. It is also of interest that the majority of parents interviewed by the mission at the COTs were from the middle-income socioeconomic group, such as government officers or teachers.

36. A comparison of the net income streams from (i) students who sought employment immediately after qualifying at NVQ level 5 or 6 and (ii) students who proceeded to obtain Univotec degrees after NVQ level 5 shows, as expected, that those who continued on to obtain a university degree can expect to receive a higher income in the long term, with a net present value that is 70% higher over a 10-year period. This is despite having to bear the living expenses for the Univotec study period.

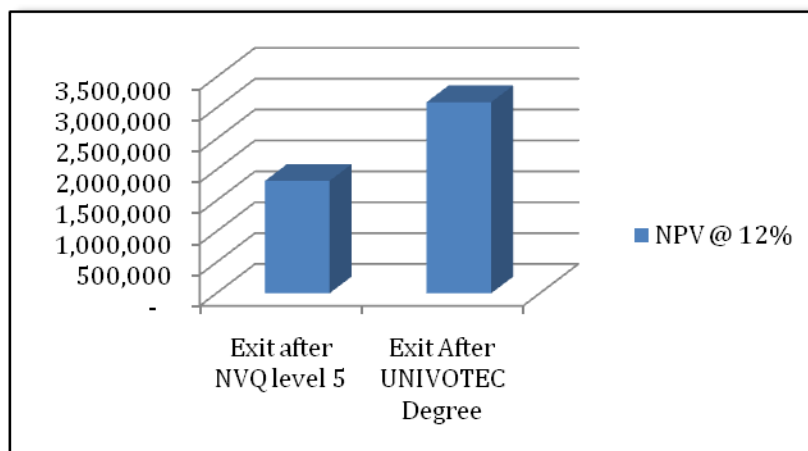
37. Postponing employment until after a degree is obtained is therefore more financially rewarding, but only to those from non-poor families.

38. Youth unemployment in Sri Lanka is attributable to the propensity for “queuing” for permanent employment, preferably in the public sector or the formal private sector as a second choice. Public sector salaries offer a premium to employees qualified up to GCE Ordinary Level, while private sector pay is more attractive for those qualified up to GCE Advanced Level and above. The mission was able to observe the manifestation of the “queuing” tendency in some of the COTs visited. Female students at NVQ level 4 at the Badulla COT were being trained in carpentry, masonry, and plumbing, not with the intention of taking up these trades after training, but to become teachers in the government-run *Vidatha* resource centers (an initiative under the Ministry of Technology and Research to transfer Information Communication Technology to the villages and create job opportunities to alleviate rural poverty). As mentioned earlier, almost all NVQ level 5 and 6 students at the COTs were merely “queuing” for a permanent job after a degree at Univotec. The ability of COT students to “queue” or delay employment until they

³ Technical Education Development Project: *Study on Quantification of Economic and Social Benefits Contributed by the TEVT Sector*, 2009. MG Consultants. 2009. *Tracer Study on Employment of Vocational Pass Outs*.

obtain higher qualifications at Univotec is greater for higher income families who are then able to support students through the technical and vocational training process. To this extent, the project poverty reduction objectives of reducing youth unemployment have not been realized.

Chart A5.1: Net Present Value of Alternative Education Strategies – Employment Income after NVQ Level 5 or Univotec Degree (10 Year Net Cash Flow to Students) (SLRs)



NVQ = national vocational qualification, Univotec = University of Vocational Technology, NPV = net present value.

Source: Mission Computations

C. Overall Poverty Impact of Technical and Vocational Training

39. As seen above, the project interventions aimed primarily at NVQ level 5 and above had no direct poverty reduction benefits. The overall TEVT sector, though, including NVQ levels 1 to 4, has had an impact on reducing poverty as illustrated by the findings of the two project-supported impact studies (Footnote 3). Among the beneficial impacts are the following:

- (i) The unemployment rate of students prior to joining all TEVT institutions was 86%; this rate dropped to 24% after graduation. There is a stronger poverty alleviation impact for students qualifying at NVQ level 4 and below.
- (ii) TEVT graduates have reported improvements in their quality of life, especially in housing (30%), food and clothing (56%), and family nutrition (43%).
- (iii) Financial assets were acquired by up to 19% of the TEVT graduates, while up to 18% reported investments in real estate.
- (iv) Up to 70% of graduates reported a higher level of social acceptance.

40. For a more beneficial poverty impact to be felt in the TEVT sector, more equitable access should be provided to the NVQ “ladder” that provides social and economic mobility to the poorer students. The current trend of students from mainly middle income families using the NVQ pathway provided by the COTs as a means to a degree has no beneficial impact on poverty.

Table A5.9
Summary of Cash Flows for Economic Analysis
 (\$'000)

Year	Project Costs	Recurrent Costs	Incremental Benefits	Net Benefits
2006	600	-	-	(600)
2007	269	-	-	(269)
2008	1,890	-	-	(1,890)
2009	1,374	-	-	(1,374)
2010	9,570	-	1,995	(7,575)
2011	6,229	6,761	2,511	(3,724)
2012	-	1,259	2,762	1,502
2013	-	1,259	3,079	1,819
2014	-	1,259	3,387	2,127
2015	-	1,259	3,726	2,466
2016	-	1,386	3,726	2,339
2017	-	1,433	4,099	2,666
2018	-	1,450	4,509	3,058
2019	-	1,469	4,959	3,490
2020	-	1,490	5,455	3,965
			EIRR	6.3%

() = negative.

Net Present Value @ 12%= \$(2,681,495).

EIRR = economic internal rate of return.

LIST OF PERSONS MET BY THE PROJECT COMPLETION REVIEW MISSION

A.R. Deshapriya	Additional Secretary, Vocational Training, Ministry of Youth Affairs and Skills Development (MYASD)
Dayantha Wijeyesekera	Chairman, Tertiary and Vocational Education Commission (TVEC)
Dhammika Hewapathirana	Chairman and CEO, Vocational Training Authority
Tissa Jinasena	Director General, National Apprenticeship and Industrial Training Authority
D.V.P.Y. Kulatunga	Additional Director General, Department of Technical Education and Training (DTET)
P.C.P. Jayathilake	Director, Planning and Research, TVEC (Former Technical Education Development Project [TEDP] Deputy Project Director)
M.P.D.U.K. Mapa Pathirana	Director, External Resources Department, Ministry of Finance and Planning
R.M.P. Rathnayaka	Director, ADB Section of External Resources Department, Ministry of Finance and Planning
Malani Gamage	Department of Project Management and Monitoring, Ministry of Finance and Planning
Tilakaratne Piyasiri	Professor, Moratuwa University (Former Director General, TVEC)
A. Gamaathige	Retired (Former Social Sector/Resettlement Officer, ADB Sri Lanka Resident Mission)

Ratnapura College of Technology

K.V. Aruna Keerthi	Director
G.K.T Gunasekara	Head of department, lecturer
Pathirana	Instructor, technical drawing
C.M.M. Fernando	Lecturer, information and communications technology (ICT)
G.N. Senadheera	Lecturer, refrigeration and air conditioning
S.D. Jayantha	Lecturer, refrigeration and air conditioning
H.G. Wijerathna	Lecturer, career guidance
P.P.T.S. Uberathna	Lecturer, refrigeration and air conditioning)
A. Panagoda	Advisory committee member
K.R. Samaranyaka	Parent
A.W. Dayawathee	Parent
Rasika Manel	Student, information technology, national vocational qualification (NVQ) level 4
Thushari atthanayaka	Student, information technology, NVQ level 4
Rasika Jayanthi	Student, information technology, NVQ level 4
P.H.A.D. Harshani	Student, information technology, NVQ level 4
U.P. Maheshika	Student, information technology, NVQ level 4

Supun Sanjeewa	Student, refrigeration and air conditioning
Oshan Chathuranga	Student, refrigeration and air conditioning
Sandun Pushpa	Student, refrigeration and air conditioning
Tharindu Sandaruwan	Student, refrigeration and air conditioning
Withanage	Student, refrigeration and air conditioning
Vimukthi Vikum	Student, refrigeration and air conditioning

Badulla College of Technology

Gamini Chandrasekara	Director
S.S. Disanayaka	Additional director
L.S. De Silva	Lecturer, ICT
Somarathna	Lecturer, ICT
Indunil Shamalee	Student, carpentry
Nalika Madushani	Student, carpentry
Dananjana Sandarenu	Student, carpentry
Weerawaddhene	Quality Management Representative
N.G. Pranage	Student, ICT, NVQ level 5
Medani Rathnaweera	Student, ICT, NVQ level 5
Sahith Dissanyaka	Student, ICT, NVQ level 5
Tharindu Prasad	Student, ICT, NVQ level 5
Dilruksha Lakmal	Student, ICT, NVQ level 5
Kalpa Disanayaka	Student, ICT, NVQ level 5
Akila Lakmal	Student, ICT, NVQ level 5
Mohomad Wafila	Student, ICT, NVQ level 5
Samarakoon	Student, ICT, NVQ level 5

Galle College of Technology

P. Balasuriya	Director
A.C. Vithana	Head of department, engineering
S. Sonnadara	Head of department, engineering (part-time) mechatronics
B.D. Priyantha	Lecturer, mechatronics
M.W.M. Thowfeek	Instructor, mechatronics
K.K. Chandrika	Instructor, electronics & telecommunications
L. Samaraweera	Training assistant, information technology
Manjula Shantha	Instructor, information technology
L. Deshapriya	Lab assistant

Maradana College of Technology

K.J.T. Jayathilaka	Director
A.A.D. Kularathna	Head of department, NVQ levels 5 and 6
Wasantha Pothpitiya	Career guidance officer
Darshana Senanayaka	Director General / Project Management and Monitoring
Somasiri Ekanayaka	Assistant director / Project Management and Monitoring

Kurunegala College of Technology

G. H. Amarasooriya	Director
P.A.G. Punchiheva	Plant manager, Consulting Engineering & Constructions Pvt. Ltd. (former teacher automobile technology)
H.P. Gunasekara	Project manager, Carlsons Marketing Pvt. Ltd. (former teacher automobile technology)
Shirani Wimalasekara	Medical officer (parent)
Chandrika Pintu	Housewife (parent)
A.R. Sumana Wathip	Public school teacher (parent)
A.S. Amaracingha	Retired public school teacher (parent)
M.M.T.A. Sagovva	Instructor
G.M.N.P.R. Chandrisekara	Lecturer
K.T.R.M. Indrasiri	Lecturer, ICT, NVQ level 5
H.M.G.S.R. Perera	Lecturer, ICT, NVQ level 5
R.M.K.D.R. Koswatta	Lecturer, ICT, NVQ level 5
T.K. Dissanayaka	Instructor, Head of Department, NVQ level 5
G.D. Manchanayika	Lecturer, civil
K.W.G.A. Jayamanna	Student, Univotec, building systems (from NVQ level 5 construction)
M.S.M. Perera	Student, Univotec, building systems (from NVQ level 5 construction)
D.M.C.D. Dissanayaka	Student, Univotec, building systems (from NVQ level 5 construction)
L.H.S.D. Gunarathne	Student, Univotec, building systems (from NVQ level 5 construction)
J.M.B.P. Kalupokuna	Student, Univotec, mechatronics (from NVQ level 5 automobile)
P.D.K.N. Appuhamy	Student, Univotec, mechatronics (from NVQ level 5 automobile)
Y.G.I.C. Jayaweera	Student, Univotec, mechatronics (from NVQ level 5 automobile)
W.A.I. Cooray	Student, Univotec, mechatronics (from NVQ level 5 automobile)
N.D.M. Perera	Student, Univotec, mechatronics (from NVQ level 5 automobile)
N.S. De Silva	Automobile garage owner and operator (NVQ level 5 automobile)

Kandy College of Technology

W.N.B. Weerasekara	Director
B.B. Gamage	Additional director
A.W. Godagama	Senior instructor, refrigeration & air conditioning
H.M.W. Amerasekera	Visiting lecturer, aluminum fabrication
Sudharma Narankotuwa	Librarian
Sarath Padmakumara	Plumbing instructor
Kapila Perera	Lecturer, automobile technology
H.R.P.M. Bandara	Instructor, automobile engineering
S.S. Piryasiri	Lecturer, food technology
A.G.A. Bandara	Lecturer, food technology
H.A.P.W. Hitnavachchi	Lecturer, food technology
Medha Marasinghe	Lecturer, food technology
G.R.P.K. Perera	Lecturer, food technology
Thusita Podimonike	Career guidance officer
H.D. Charith Suranga	Former student, NVQ level 5, automobile technology

Anuradhapura College of Technology

K.A.S. Aberathne	Director
H.M. Tilakaratna	Part-time lecturer, agriculture farm machinery (retired engineer UK)
Nimal Premathunga	Lecturer, agriculture farm machinery
D.A. Gangodawila	Lecturer, refrigeration and air conditioning
K. Sugumarn	Lecturer, refrigeration and air conditioning
R.A. Karunaratna	Parent
R.M. Herath	Parent
W.M.T. Shanaka Bandara	Student Univotec (from NVQ 5)
W.A.R.K. Dissanayake	Student Univotec (from NVQ 5)
D. Saritha Mihiranga	Student Univotec (from NVQ 5)
R.H.A.U.P. Ranathunga	Student Univotec (from NVQ 5)
K.R. Hettiarachchi	Student Univotec (from NVQ 5)
N.A. Sewmini Tushara	Student Univotec (from NVQ 5)
W.D.A.P. Somathilaka	Student Univotec (from NVQ 5)

Pre-wrap-up meeting

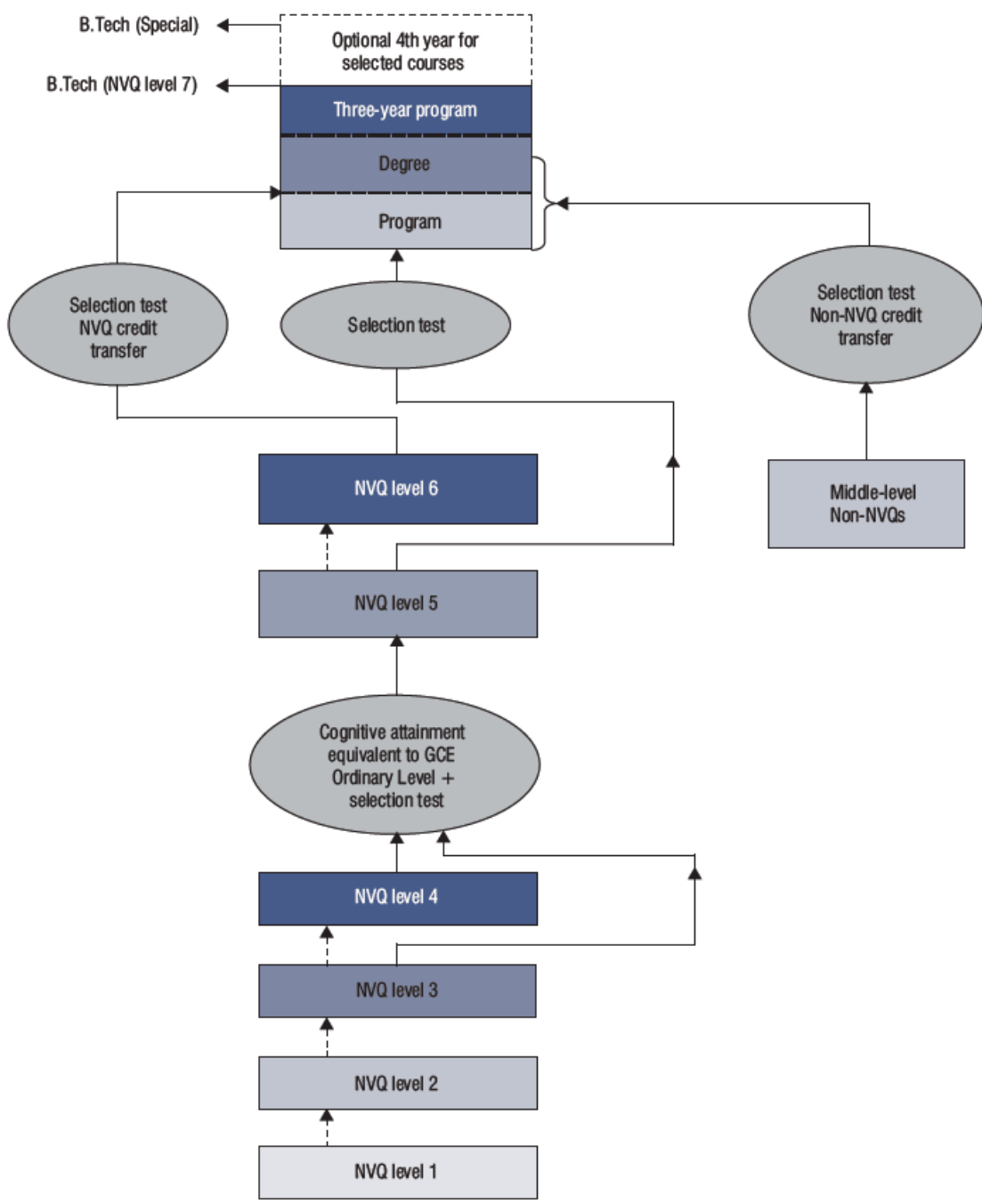
A.R. Deshapriya	Additional secretary, MYASD
Tharangani Wickremasinghe	Director, vocational, MYASD

P.C.P. Jayathilake	Director, planning and research, MYASD, TVEC
B.H.S. Suraweera	Director general (acting), TVEC
H.C. Ambawaththa	Director general, DTET
K.A.S. Aberathne	Director, Anuradhapura College of Technology (COT)
Gamini Chandrasekara	Director, Badulla COT
W.N.B. Weerasekara	Director, Kandy COT
G.H. Amarasooriya	Director, Kurunegala COT
K.J.T. Jayathilaka	Director, Maradana COT
K.V. Anura Keerthi	Director, Ratnapura COT

STAFF DEVELOPMENT PLAN AT APPRAISAL AND ACTUAL

Approximate Age	Equivalent in General Education	NVQ Level	Sri Lanka Qualification or Credential	Technical Education and Vocational Training Institutions
22	Bachelor's degree	7	Bachelor of science	University of Vocational Technology
			Bachelor of technology	University of Moratuwa
			Bachelor of education in technology	Open University of Sri Lanka
21		6	Higher national diploma	Sri Lanka Institute of Advanced Technological Education
20			National diploma	Colleges of technology
19	GCE advanced level	4	National certificate	Technical institutes
18				
17	GCE ordinary level	2	National craft certificate	Technical colleges
16			1	Entry level
15	Grade 9		No credential	Lower secondary school

NATIONAL VOCATIONAL QUALIFICATIONS FRAMEWORK



GENDER AND SOCIAL EQUITY RESULTS ANALYSIS

A. Introduction

1. The goal of the Technical Education Development Project (TEDP) was to improve the provision, access, relevance, and efficiency of the technical education system. This supported the government's policy objectives of improving quality and relevance, increasing access to vocational training, and minimizing gender imbalance in enrollment. The project aimed at improving access to and strengthening the capacity of the technical education and vocational training (TEVT) system to meet labor market demands and to catalyze pro-poor economic growth and poverty reduction. The outputs of the project were to: (i) establish six colleges of technology (COTs) to offer 12 new technician and technologist national vocational qualification (NVQ) level 5 and 6 programs, (ii) strengthen the Ministry of Youth Affairs and Skills Development (MYASD) and relevant institutions to improve technical and vocational training systems, and (iii) establish a university focusing on vocational and technical education.

2. Female participation in TEVT is low compared with their high participation rates in general education. Female enrollment is highly visible in gender stereotypical programs, such as secretarial, beautician and textile courses, at NVQ levels 1 to 4 and accounts for less than 25% in trade and technological programs at NVQ levels 5 and 6. More action is required to encourage females to enroll in technical programs to meet local and foreign market demands.

B. Gender Action Plan of the TEDP

3. Reducing gender imbalances and promoting social equity in vocational education are among the goals identified in improving accessibility in the TEDP. The gender action plan (GAP) of the TEDP provided the following activities for the promotion of gender and social equity:

- (i) Developing a gender and social equity action plan;
- (ii) Appointing gender coordinators to colleges of education and to the University of Vocational Technology (Univotec) to oversee and monitor the implementation of the gender policy;
- (iii) Collecting gender disaggregated baseline data;
- (iv) Maintaining gender sensitive infrastructure facilities at each COT and at Univotec;
- (v) Ensuring that 20% of academic staff is female;
- (vi) Providing gender training to staff members; and
- (vii) Including a gender dimension in social marketing strategies.

C. Social Equity and Gender Strategy

4. The TEDP has prepared a comprehensive report on social equity including a gender policy for TEVT, a GAP for the colleges of education, an action plan for the ministry, and a gender and ethnic minority action plan. The gender policy has been prepared under the social equity and gender strategy for the ministry dealing with TEVT. The social equity report analyzes the inequities experienced in society and in TEVT and identifies the critical issues, strategic priorities, and strategic directions of the project. The document is comprehensive and has been prepared through a consultative process that has analyzed and integrated gender and social equity concerns into project components.

5. The report on social equity for the TEDP addresses the following strategic directions in making recommendations for introducing socially equitable standards in the project interventions:

- (i) Introducing a policy (the ministry policy for gender and social equity);
- (ii) Promoting systems and structures;
- (iii) Promoting human resource development;
- (iv) Promoting capacity development and training;
- (v) Developing linkages; and
- (vi) Marketing.

D. Introduction of Gender Policy (for the Ministry)

6. A separate policy is needed because the training organizations pay little attention to promoting gender and minority groups in TEVT and assign junior officers, who lack knowledge on the subject and devote little time to it, to handle the subject of social equity. The aim of the gender policy is to ensure equal access to TEVT in enrollment and equal opportunities in technical and vocational education and training, without gender bias or social discrimination. The policy provides a framework for setting guidelines and directions within TEVT to (i) ensure gender sensitivity and social equity in all interventions, (ii) strengthen systems and procedures to support social equity, (iii) ensure the responsibility of the stakeholders, (iv) promote sensitivity among the staff and decision makers for maintaining equity, and (v) create opportunities for better acceptance of females and minority groups in the TEVT sector.

D.1 Implementation of the gender policy

7. The project hired a consultant for the implementation of the social equity and gender strategy, including the gender policy. Career guidance officers in each of the six COTs were appointed as the social equity and gender coordinators. A committee was formed in each COT, comprising the director and staff members, to provide guidance and direction. Work progress and matters that needed further attention were referred to the project steering committee.

8. A GAP was prepared by the COTs for the implementation of the gender policy, covering four strategic areas: (i) encouraging women to enter non-traditional vocational training through information dissemination, (ii) conducting support programs to provide equal opportunities, (iii) strengthening and supporting new initiatives, and (iv) initiating a scheme to provide financial assistance to underprivileged students.

9. The COTs conducted awareness raising programs, identified vulnerable groups, developed links with local organizations, conducted tailor-made courses for underprivileged groups, conducted entrepreneurship development programs, and strengthened the career guidance and counseling centers. These support programs included such activities as (i) providing working and learning infrastructure and other resources, (ii) developing and distributing gender and social equity promotional material, (iii) developing guidelines to ensure acceptable gender quotas, and (iv) conducting training on social equity for the management staff. Some of the activities identified under the third strategy of the gender policy provide gender and social equity programs for academic staff and have identified new initiatives for vulnerable groups. Although some of the activities given in the plan are not specific, it has provided guidance for the COTs to work on gender and social equity, which was introduced for the first time to the COTs.

10. The implementation of the NVQ system is a significant development in quality control within the system that will provide better employment opportunities for the graduates. Female

enrollment in the courses conducted by the Department of Technical Education and Training (DTET) is gradually increasing, although with fluctuations. It was 39.0% in 2009, 37.9% in 2010, and 40.5% in 2011. Female participation is high in diploma and certificate courses and lower in craft level courses. From recent records, there is a visible change in the female enrollment from gender-stereotypical courses to job-oriented courses. TEVT figures for 2009 reveal that female participation is more than 50% in teacher training (97%), medical and health science (88%), personnel and community development (74%), textiles and garments (69%), languages (57%), finance and management (52%), and information technology (51%). Women have found new job opportunities in the rapidly expanding information technology sector. Awareness raising efforts on the prospects of TEVT and the availability of jobs in the private sector have contributed to an increase in female youth enrollment in technical education.

11. Female enrollment in automobile repair and maintenance (6.1%) and electronics (13.0%) is low. In 2003, female enrollment in technical courses was less than 25%. Although an analysis of the figures is not available, there is an increasing trend in female participation in certain technological courses such as farm machinery technology and construction technology despite non-participation in mechanical-related training programs. A preference for males in technological vocations and the cultural demarcation of male and female trades have contributed to the low participation of women in technological courses.

12. The implementation of the NVQ system has provided better employment opportunities for TEVT graduates. There has been an increase in female participation in technological courses, which provide access to higher paying jobs. The COT curriculum includes workplace practical training primarily in the private sector and industries. Many students are able to secure permanent employment after the completion of their training. During the project completion review site visits, it was revealed that males are preferred in field-oriented technical jobs and that women opt for desk jobs. Women predominate in information and communications technology (ICT) and have found new job opportunities in this rapidly expanding sector. With the expansion of the construction industry in the north and east, job opportunities have opened up for Tamil youth. More females have enrolled in the construction program and have secured employment as site supervisors and as draftspersons. The number of females following diploma courses in quantity surveying, construction technology, and draftsmanship is increasing due to the availability of jobs in the expanding construction industry.

13. In the Tracer Study on Employment of Vocational Pass Outs (Appendix 5, Footnote 3), it was revealed that 81% of those who pass out from the technical colleges find employment within months. The number of those who passed out and are employed in the private sector is about three times higher than those employed in the government sector, and 27% have found jobs with the help of the career guidance units. The study was not gender focused and no data is available to assess employment prospects for females. Following the technical courses, which included formal and entrepreneurship training, some female youth have been willing to engage in self-employment activities.

14. Since female participation in the technological courses is comparatively low, more action is required at the policy and implementation level to increase their participation. Entry requirements need to be revised to address access and equity, and female representation is necessary on student selection panels. Introducing a quota of 15% to 25% female enrollment (depending on the courses) to the student selection criteria would facilitate the increase of female intake in technological courses. It is also necessary to incorporate the needs of employers and the manufacturing and services sectors in the strategic planning of the ministry and the COTs to assure gender equity and the participation of females.

Table A9.1: Female Participation in NVQ Levels 5 and 6

Course Title	Female Admissions as % in 2009	Female Admissions as % in 2011
1.Higher Diploma in Farm Machinery Technology	0	18.8
2.Higher Diploma in Automobile Technology	0	0
3.Higher Diploma in Construction Technology	37.3	72.1
4.Higher Diploma in Telecommunication Technology	26.3	28.6
5.Higher Diploma in Food Technology	0	46.2
6.Higher Diploma in Information and Communications Technology	48.4	50.4
7.Higher Diploma in Mechatronics	0	0
8.Higher Diploma in Production Technology	0	0
9.Higher Diploma in Welding Technology	0	0
10. Higher Diploma in Refrigerator and Air Conditioning Technology	-	-

NVQ = national vocational qualification.

Source: Department of Technical Education and Training. 2011. *Statistical Handbook on Technical Education*.

15. The gender and social equity policy was accepted by the ministry and a workshop was conducted to discuss policy guidelines and implementation arrangements. However, ministry guidelines and directions in strengthening systems and procedures to support social equity in the TEVT sector were not prepared. The capacity of the ministry needs to be strengthened further to integrate gender and social equity concerns into the ministry and the institutions coming under its purview.

16. The COT career guidance officers who are given the additional responsibility to deal with gender and social equity concerns are often too busy to devote sufficient time to them. Although each COT has two career guidance officers, some COTs, such as Maradana and Kurunegala, have only one officer, which limits the amount of time they can devote to gender and social equity work. The transfer of heads of COTs who have been exposed to gender training and their

replacement by those lacking in such awareness has also affected the implementation of the COT GAPs. Career guidance officers felt the support of the director of the COT is crucial in providing guidance and allocating resources during the implementation of the GAP.

17. The attitudes of some instructors are not favorable toward promoting females in non-traditional vocations. Citing the absence of facilities such as female changing rooms tends to discourage female candidates at the interview. More courses in the Tamil language need to be conducted for the benefit of Tamil and Muslim youth in Ratnapura, Badulla, and Kandy. The DTET needs to take action to fill the cadre vacancies of Tamil instructors. Although some COTs conduct courses for the disabled, other COTs are not able to do so due to a lack of equipment and facilities. Therefore, suitable equipment, furniture, and sanitary facilities need to be provided to improve access and participation for the disabled.

D.2 Promoting systems and structures

18. The social equity and gender strategy has identified the need to develop gender indicators for application, enrollment, graduation, and staffing in the TEVT programs, as well as gender sensitive monitoring formats. The project implementation unit (PIU) has developed monitoring indicators and a reporting format to monitor the implementation of the GAP by the COTs. However, monitoring targets were not identified and quantitative data was not available.

19. The project was expected to refine the education management information system (EMIS) to include information on the COTs, Univotec, and the ministry, for policy analysis, planning, and decision making. The implementation of the EMIS was delayed and is not being used as originally planned because the system is not functioning fully in certain COTs. The software installed has also been criticized. Sex-disaggregated data is available to a limited extent in the EMIS.

20. The monitoring and evaluation system has not been implemented due to a lack of attention paid to monitoring and a lack of knowledge in maintaining monitoring systems. Data is not used for decision making and databases are not updated regularly. Providing capacity building training for those working on monitoring systems will contribute to the maintenance of an effective monitoring system. This will support the collection of sex-disaggregated data which can be used for planning and decision making.

21. The intake capacity of COTs increased from 600 to 1,500 students through the project, which benefits both males and females in the selection. Students who complete NVQ level 4 are able to follow the next level without any difficulty. NVQ levels 5 and 6 are conducted in English but in NVQ levels 1 to 4 courses Tamil and Muslim students are provided a choice to follow courses in the Tamil language. Bridging Univotec courses to supplement shortfalls in training prior to the commencement of the degree programs benefits both male and female students.

22. The enrollment procedure is gender neutral, not targeted to any group, and open to school leavers and employees who have fulfilled basic educational requirements. Applications are called through gazette notification and advertisements. Students are selected through an aptitude test followed by an interview. Through the awareness raising programs, female school leavers and disadvantaged groups are encouraged to apply. The gender and social equity strategy indicated the need to develop gender and socially equitable student selection criteria to facilitate enrolling more females to technological courses, but there is no indication that such measures have been taken.

23. While academic staff members conduct admission interviews, sometimes female staff members are not represented on the interview panels. Female participation at interview panels is a requirement given in the strategy. In most cases, the number of applicants exceeds the intake capacity; whether women are given a fair opportunity at the interview needs to be further

investigated. Student admissions statistics by program, including the percentage of females, is in table A9.2.

Table A9.2: Student Admissions by Program – all Nine Colleges of Technology (2011 January)

Program	Intake capacity	Number applied	Number Registered	% of females
1. Higher Diploma in Farm Machinery Technology	20	37	16	18.8
2. Higher Diploma in Construction Technology	80	461	61	72.1
3. Higher Diploma in Telecommunication Technology	20	102	14	28.6
4. Higher Diploma in Food Technology	20	36	13	46.2
5. Higher Diploma in Information and Communications Technology	360	390	167	50.4
6. Diploma in Farm Machinery Technology	20	32	27	7.4
7. Diploma in Construction Technology	80	80	53	24.5
8. Diploma in Telecommunication Technology	20	27	11	27.3
9. Diploma in Information and Communications Technology	360	403	153	46.4
TOTAL	980	1568	515	

Source: Department of Technical Education and Training. 2011. *Statistical Handbook on Technical Education*.

24. The need to maintain gender sensitive infrastructure facilities to enhance the learning environment for females and vulnerable groups is elaborated in the GAP. Efforts have been made to allocate separate dressing rooms and toilets for females. However, due to a lack of space it has not been possible to make infrastructure facilities favorable to women in all COTs.

25. The gender and social strategy should be integrated into the overall policy of the ministry and also included in the corporate plans of the TEVT institutions and in provincial vocational education and training (VET) plans. Sustainable structures should be created within the institutions for the implementation of the strategy. A gender desk should be created in the ministry to oversee the implementation of the gender policy, and it would be useful to identify an officer in each of the TEVT training institutions, namely DTET, VTA, NAITA, National Youth Services Council (NYSC) to liaise with the gender desk. The interest in and momentum created for gender and social equity within the COTs needs to be maintained through the provision of gender training and support services, a commitment from management, and an allocation of adequate resources.

26. Despite the acceptance of the strategy, gender and social equity is not reflected in the planning process of the ministry and their aspects are not included in the corporate plans of the Tertiary and Vocational Education Commission (TVEC), Univotec, or other TEVT institutions. Gender and social equity is not a priority area in the ministry and the TEVT institutions, and no staff has been allocated.

D.3 Human resource development, capacity development, and training

27. Gender and social equity awareness programs have been conducted for the management of the ministry and institutions under its purview to facilitate implementation of the gender policy. Gender and social equity was integrated into the training programs carried out on strategic planning, policy analysis and planning, and entrepreneurship development. However,

discussions with policy makers revealed that more awareness programs for management are required to bring about attitudinal change, which is essential for promoting gender and social equity in the TEVT sector.

28. Two workshops were conducted on social equity and gender mainstreaming for the COTs: the first was for career guidance officers on the preparation of the GAP, and the second was a 5-day training of trainers workshop on gender mainstreaming for 16 trainers. The objective of these workshops was to familiarize the participants with gender and social equity policies, prepare training material, organize workshops, and implement programs for other target groups. Training and awareness programs have resulted in greater awareness among COT staff, students, and parents on social equity and gender issues.

29. Participants in the 5-day training of trainers workshop were generally career guidance officers who subsequently conducted gender training for the staff of COTs and Univotec. Support provided by the teaching staff in the integration of gender and social equity is not significant.

30. The COTs conducted awareness programs for students, school leavers, parents and teachers, on developing a career path through TEVT, with a special focus on promoting the enrollment of females in technological areas. Some COTs have taken special measures to enroll females and minority groups for training. For instance, Anuradhapura COT enrolled five girls without ordinary levels in the woodwork program and three girls in the farm machinery program. Tailor-made safety courses were also conducted for females, which included in the use of household equipment and the diagnosis of electrical faults. Career guidance officers have integrated gender into their regular awareness building programs in TEVT.

31. COTs have extended their training to vulnerable social groups, although the enrollment of specific social groups, such as young Muslim men and women, depends on the location of the COT. Tailor-made courses were extended to Tamil groups and to the disabled as well. The Kandy COT trained youth in the detainee camp at Pallekele in aluminum fabrication, electronics, and welding; the Kurunegala COT trained Tamil youth in aluminum fabrication, wood carving, and plumbing; and the Ratnapura COT trained Tamil and Muslim youth in welding and tailoring. Since available data is not sex-disaggregated, it is not possible to identify the genders of the enrollees.

32. The academic staff of Univotec received training in new technologies, teacher education, curriculum and multimedia material development and research and extension. The PIU organized overseas training by way of study tours for to the academic staff of Univotec. Females comprise nearly 50% of the academic staff and the majority of them had the opportunity to participate in the study tours.

33. COT staff was trained in the teaching of new curricula in technologies offered, which included upgrading the technical and industrial skills of technical teachers and raising their educational qualifications. Through June 2010, 67 teachers had obtained a bachelor of technical education degree through this in-service training.

34. Discussions with staff show that both male and female academics benefited from the training, although sex-disaggregated data is not available

35. Evidence of the effectiveness of the gender and social policy and strategy includes the following: (i) the COTs have integrated gender into training and have created awareness among groups such as students, school leavers, parents, and teachers; (ii) the COTs have provided information for girls who seek training opportunities and career paths; (iii) the number of females following NVQ levels 5 and 6 is gradually increasing; and (iv) gender training provided to COT

staff has improved gender sensitivity, which is evident by the allocation of separate toilets and restrooms for females.

36. Human resource development training should include changes in perception for staff who work on gender and social equity issues. To implement the gender policy introduced by the TEDP, large-scale awareness raising interventions are required at the managerial level to change perceptions regarding female participation in TEVT.

37. Vacancies of career guidance officers need to be filled so they can devote more time to gender and social equity work already underway. The gender-related programs should be monitored nationally and within the COTs to sustain interest and to be vigilant in implementing activities effectively. The commitment of the COT director is crucial in institutionalizing gender training. Univotec adopts a gender neutral approach in enrollment and in the training and recruitment of staff. Gender and social equity concerns could be strengthened through capacity building of the career guidance unit and Univotec so that it can continue to function as the center for gender training in the TEVT system

D.4 Linkage development

38. Sector councils have been established with 60% representation from employers, manufacturers, and industrialists. One of the major objectives of the TEDP is to develop mid-level, skilled human resources to contribute to national economic growth. The project has obtained the support of the private sector and industry institutions in establishing sector skills councils to validate technician curricula according to internationally and locally developed training standards. The sector councils provided guidance for TEVT human resource development and undertook the final validation of the competency standards and national vocational qualifications prepared by the TVEC. Accordingly, national qualifications for 12 technician and technological areas have been developed for NVQ levels 5 and 6. NVQ levels 1 to 4 have been refined for progression to levels 5 to 7, enabling students to obtain a B.Tech degree.

39. With the expansion of the industrial and the service sectors, the role of the private sector has become important in economic development and employment creation. More job opportunities are available for females with skills in the private sector. Vocational training authorities at the national and provincial levels should develop linkages with the private sector to improve the quality and relevance of training programs and job accessibility for TEVT graduates. The private sector needs to be consulted, and their training needs should be incorporated into the planning of TEVT programs.

D.5 Social marketing

40. A social marketing program was implemented by the ministry and the PIU through a private company to raise public awareness of technical education in collaboration with industry sector associations, JobsNet (an online jobsite under the Ministry of Employment and Labor) and career guidance units. The program included holding awareness raising meetings in the districts where COTs are situated, focusing on students, teachers, and entrepreneurs; putting up billboards; and producing a television drama and press advertisements. The program was not directly gender focused, but gender elements were included in its campaigns. While the program was not cost-effective, it was useful in promoting the NVQ system. The program activities conducted in the districts helped increase the intake of women in technological programs, as evidenced from increased female enrollment in these programs. COT staff have also been trained in social marketing.

41. The messages highlighted in the social marketing program included (i) the increasing number of women enrolled in TEVT; (ii) their eligibility to follow NVQ levels 5 and 6, leading to a

bachelor's degree; and (iii) the availability of jobs for females. Future social marketing campaigns could depict women's capabilities in handling male-oriented jobs, women participating in mechanical training courses, and job prospects for women within and outside the country.

42. It is recommended that effective social marketing programs continue to be conducted to change attitudes within the target group through capacity building and resource allocation.

E. Recommended Priority Actions

Policy level

- (i) The ministry to develop policy guidelines and directions to strengthen systems and procedures to implement the gender policy
- (ii) Establish a gender desk in the ministry to oversee gender and social equity concerns

Systems and structures

- (i) Develop student selection criteria to facilitate gender equity
- (ii) Appoint female staff members to student admission interview panels
- (iii) Fill cadre vacancies of career guidance officers
- (iv) Operationalize and update the EMIS to obtain comprehensive sex-disaggregated data
- (v) Develop monitoring targets and indicators to collect quantitative and qualitative data
- (vi) Allocate financial resources to continue gender and social equity activities in COTs and gender mainstreaming at the ministry level

Human resource development and capacity building

- (i) Conduct capacity building programs for the ministry and the TEVT institutions to facilitate gender mainstreaming
- (ii) Conduct awareness programs on gender and social equity for management to bring about attitudinal changes toward the promotion of gender and social equity in TEVT
- (iii) Univotec to develop training materials on gender and social equity, include a gender module in curricula, and incorporate gender as a subject in all teacher training programs
- (iv) Incorporate the subject of gender in human resource development training by all TEVT institutions

Linkage development

- (i) Incorporate training needs of the private sector into the strategic plans of the ministry and TEVT institutions

Social marketing

- (ii) Implement gender focused social marketing programs to promote participation of females in technological courses

F. Overall Assessment of the Implementation and Results of the GAPs and the Contribution to the Project's Overall Implementation

F.1 Summary of overall assessment

43. The ministry, Univotec, and especially the COTs have contributed to the implementation of the GAP. The COTs successfully developed GAPs, created awareness among target groups, and organized community training. COTs were partly successful in providing gender-friendly infrastructure facilities, but have not dealt with revising the student selection criteria.

44. Despite the acceptance of the gender policy by the ministry, which provided an impetus for the training institutions to promote gender and social equity concerns, it has not paid attention to integrating the gender policy within the ministry. The implementation of the GAP was not successfully monitored by the PIU. Univotec has adopted a gender neutral approach that could have contributed more to gender training and in the collection of sex-disaggregated data.

F.2 Overall assessment of the implementation and results of the GAP

Strategic Direction	Targets/Indicators	Results	Remarks	Responsibility
Developing and implementing a policy for gender and social equity	Timely development of an acceptable policy for gender and social equity	Acceptance of policy for gender and social equity by stakeholders	The document is very comprehensive and of high quality	MYASD
	Availability of gender coordinator at the PIU for implementation of the policy and the GAP	Gender coordinator was available for 6 months	Non-availability of a full-time coordinator has affected coordination and monitoring of work	MYASD
	Availability of gender coordinator at COTs for the implementation of the policy and the GAP	Career guidance officers were functioning as coordinators	Career guidance officers were busy with their substantive duties and had less time for gender work	COTs
	Availability of gender coordinator at Univotec	No coordinator appointed	Adopted a gender neutral approach	Univotec
	Formulation of GAPs at COTs	GAPs formulated and implemented by all COTs	GAPs were available for each year of the project period	COTs
	Increase of female participation in TEVT at the DTET levels	Female participation in TEVT increased from 39.0% in 2009 to 40.5% in 2011	A gradual increase is visible	DTET
		Female participation in technological courses, which was less than 25% in 2003, has also increased	Accurate figures are not available	
	Increased job opportunities for women	More job opportunities for women following diploma courses especially in		

Strategic Direction	Targets/Indicators	Results	Remarks	Responsibility
		construction		
Developing systems and structures	Developing gender sensitive monitoring indicators	Monitoring indicators and monthly reporting formats developed for COTs	Gender activities have been monitored only in COTs	PIU and MYASD
	EMIS to provide sex-disaggregated data	Limited data available	EMIS was not functioning in certain institutions	PIU and DTET
	Availability of a permanent structure to implement gender policy and strategy	Not available	The ministry needs to identify and set up a permanent structure	MYASD
	Inclusion of gender in the planning process	Not included in the ministry or corporate plans		MYASD
	Availability of gender and socially acceptable student selection criteria	Not available	This affects the equity and accessibility of women in the TEVT	PIU and DTET
	Maintain gender and socially sensitive infrastructure	Partially accomplished	Provision of civil works, furniture, equipment, and sanitary facilities needed for females and the disabled	DTET and COTs
	20% of academic staff should be females	Nearly 50% of academic staff of Univotec and 26% of DTET comprised of females	Targets accomplished	Univotec and DTET
Human resource development and capacity building	Capacity building of managerial staff on gender and social equity	Gender and social equity integrated into training on strategic planning, policy analysis, and planning	Training given is inadequate and more training is required	PIU and ministry
	Capacity building of COT staff (career guidance officers) on gender and social equity	Two workshops (one TOT) conducted for COT staff on social equity and gender mainstreaming	Greater awareness on gender and social equity has been created among the Career Guidance Officers	PIU and COTs
	Capacity building training for the	Training conducted by	Changes in perception are not	PIU

Strategic Direction	Targets/Indicators	Results	Remarks	Responsibility
	academic staff on gender and social equity	officers who participated in the training of trainers workshop	evident among the academic staff	
	Awareness raising programs in the community	Awareness raising programs on career paths conducted for community groups by career guidance officers	Increase of female enrollment in technological courses is observed	COTs
	Special vocational training programs for ethnic and vulnerable groups at COTs	Tailor-made and special vocational training programs for ethnic and vulnerable groups have been conducted by most of the COTs	Accomplishment of social equity principles	COTs
	Human resource development training imparted to Univotec and COT staff in new technologies	Nearly 50% of the participants were female academics	Facilitated in enhancing competencies	Univotec
	Education level of the COT staff raised	Women were among the 67 academics who obtained a bachelor's degree	Intake needs to be increased to accommodate a larger number of women	Univotec
	Gender sensitization programs for instructors	Not conducted regularly	Gender training was conducted at the initial stage and needs to be updated	COTs
	Instructors and lecturers to undertake gender sensitization training	Career guidance officers usually provide this training	More training the trainers programs needed for the instructors and lecturers in gender	Univotec
Linkage development	Private sector participation in validation of competency standards and national vocational qualifications	National qualifications for 12 technician and technological areas developed for NVQ levels 5 and 6		PIU and MYASD
Social Marketing	Incorporation of gender elements in	The social marketing	More gender focused programs	MYASD

Strategic Direction	Targets/Indicators	Results	Remarks	Responsibility
	social marketing programs	program has facilitated the increase of female participation in technological courses	are needed to improve the situation	

DTET = Department of Technical Education and Training, EMIS = education management information system, GAP = gender action plan, MYASD = Ministry of Youth Affairs and Skills Development, NVQ = national vocational qualification, PIU = project implementation unit, TEVT = technical education and vocational training, Univotec = University of Vocational Technology.

F.3 Factors that facilitated and hindered the implementation of the activities

45. The effectiveness of the gender and social equity policy and strategy is visible by the facts that the COTs have integrated gender concerns into training; created awareness among groups such as students, school leavers, parents, and teachers; and provided information for girls who seek training opportunities and career paths. The GAPs prepared by the COTs have provided guidance for mainstreaming gender within COTs. The training given to career guidance officers has provided them with knowledge on gender and social equity policies and the necessary skills to prepare training material, organize workshops, and implement programs for other target groups. Gender sensitivity has been created by gender training imparted to the academic and non-academic staff of the COTs. The allocation of separate toilets and restrooms within the available facilities to women is a direct result of this training. With the momentum gathered through the mobilization of the career guidance unit, there is commitment to social and gender equity in the COTs. Guidance for female youth and gender training for the trainees are continuously provided by the career guidance unit.

46. The implementation of NVQ system is a significant development to fulfill the quality control within the system, which will provide better employment opportunities for graduates. The introduction of 12 new courses to NVQ levels 5 and 6 has opened doors for females to enroll in technological courses. Although not directly focused on females, the social marketing program conducted by the project has contributed to increased female enrollment in technological courses.

47. Despite the acceptance of the gender policy, the MYASD has not paid adequate attention to implementing the policy and, as a result, there is a lack of necessary capacity for implementation. Structures were not created to mainstream gender and it was not integrated into the planning process of the ministry or its training institutions.

48. Student selection is gender neutral and lacks quotas or equitable selection criteria to facilitate female enrollment. Not having females on the student admission interview panel also raises concerns about selection procedures. More attention must be devoted to the provision of civil works, furniture, equipment, and sanitary facilities to support and encourage the increased enrollment of females and the disabled in TEVT.

F.4 Strategies to develop capacities of other related agencies

49. As the gender policy was accepted in 2009, it will be useful to conduct a gender analysis and/or gender audit in the ministry to ascertain the gaps, strengths, and implementing mechanisms for gender mainstreaming with the support of high-level policy makers. Establishing a gender desk in the ministry is vital to analyze gender issues in TEVT, collect sex-disaggregated data, and coordinate and monitor the gender mainstreaming processes. Policy

makers should be given gender awareness training by gender experts and adequate resources should be allocated to support the implementation of the gender policy.

F.5 Role of the Ministry of Child Development and Women's Affairs

50. The Ministry of Child Development and Women's Affairs could support the gender mainstreaming process through (i) conducting capacity building training and awareness raising programs, (ii) initiating or supporting the establishment of a gender desk in the MYASD, and (iii) having representation on steering committees and directorate boards of the ministry and its training institutions.

F.6 The contribution of the gender policy to the implementation and results of the project

51. Implementation of the gender policy and strategy has contributed to the increased participation of women in vocational training, which equips them with the skills needed for the economic and social development of the country. Although the gender policy was not integrated into ministry activities, COTs developed their own GAPs and assigned staff to implement gender-related activities. These actions, which included reaching out to female students, have had a positive outcome. Female students' access to TEVT has been improved and their capacities strengthened to meet labor market demand within the country and abroad. High unemployment among educated females will be reduced with job opportunities afforded to them in the private sector. Improving the skills of poor female youth will lead to employment opportunities that will help to reduce household poverty, which is consistent with the government's poverty reduction strategy.