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## **Enhancement and Upgrading of a Technical Education Project for SLIATE, Sri Lanka**



**LABUDUWA AIT, GALLE**





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# Executive Summary

## *Introduction and Methodology*

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1. The transaction "Enhancement and Up-grading of Technical Education Project at SLIATE for the Ministry of Education, Sri Lanka" (LK00081) involved improving and upgrading the technical education at two Advanced Institutes of Technology (AITs), namely the Matakuliya AIT and the Labuduwa AIT. Both institutes are branches of the Sri Lanka Institute of Advanced Technical Education (SLIATE), which is the recipient organisation. The transaction was part of a larger project, which included several components, among them supply of equipment, development and introduction of updated curriculum, technical assistance and training and civil construction. The total value of the project was € 21.9 million. The ORET-funded transaction amounted to € 10.9 million. On request of the government of Sri Lanka it was decided that part of the ORET grant (€ 1,451,000) would be used to cover the interest payments on the commercial loan. RaboBank International provided the commercial loan, to the amount of € 8,175,000. The non-ORET part of the project, worth € 11.0 million, was financed by the Österreichische Kontrollbank (ÖKB). The direct objective of the project was to increase the number of graduates with Higher National Diplomas in Engineering (HNDE) at the two supported AITs by a total of 450 per year. The project focused on three specialised areas: Civil Engineering, Mechanical Engineering, and Electrical Engineering.

2. Gemco International Engineering & Construction was the Dutch applicant for this transaction. It supplied the machinery and equipment, developed and introduced the new curriculum and provided training and technical assistance. GEMCO worked together with MCE Industrietechnik Linz GmbH, which is a large engineering and training company from Austria. MCE was not only involved in the construction activities but also in the provision of training and technical assistance funded from the Netherlands' contribution. MCE's inputs also included the long term local presence of MCE staff in the project.

3. The evaluation of this case study is based on the following sources of information:

- Relevant documents in the ORET archives administered by ORET.nl such as progress reports, feasibility studies, technical reports and monitoring reports.
- Documents and data provided by the Sri Lankan authorities and other stakeholders in the country.
- Various publications on the situation of technical education in Sri Lanka.
- Interviews with stakeholders in the Netherlands and Sri Lanka in August, September and October 2014.
- Site visits to the recipient institutes in the country in August and September 2014.

## *Efficiency*

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4. **Application.** The period from the date of submission of the application (2 October 2006) to the grant agreement (7 November 2008) was about 25 months. It took 14 months to approve the application (on 17 December 2007) and another 11 months before the grant agreement was signed. The grant agreement required the Government of Sri Lanka to guarantee to provide sufficient funds to cover the operational costs to safeguard sustainability and to ensure that the two educational institutions would be adequately staffed.

5. The contract between Gemco and the Government of Sri Lanka was agreed through direct negotiations conducted by a Cabinet appointed Negotiation Committee. The prices of the various components of the transaction were checked by an independent evaluator (SGS), which concluded that they were fair. Since the transaction has delivered the equipment and services on time and according to the specifications of the contract, it can be concluded that the overall contract price for this transaction was reasonable. The external audit of the transaction approved the actual expenses and concluded that more than 50% of the inputs originated from the Netherlands.

6. **Implementation.** Upgrading of school buildings at the ATI's was one of the project activities. In addition the project supplied and installed equipment. The AITs also got additional student accommodation to be able to enrol more students. All construction works and the supply and installation of teaching equipment were completed on time. The construction activities were mainly financed from the funding made available by the Austrian government. The general observation of the Heads of Departments of both AITs was that the project was

executed efficiently in spite of some delays in customs clearance of imported materials in Sri Lanka.

7. The project also provided technical assistance to enhance the training skills of the local staff, as well as instruct them on how to use the new equipment. This was given in tandem with the Austrian assistance since part of the equipment was procured with the Austrian funding. The courses were updated and the laboratories and workshops were equipped. The AIT staff highly valued both the provided inputs and the technical assistance. According to the management of the ATIs, all technical staff are now competent to handle the equipment and machinery installed.

8. Teacher training was provided at Birmingham University in the UK for five lecturers from Matakuliya AIT and four lecturers from Labuduwa AIT in their respective fields: civil, electrical and mechanical engineering. The professionals were selected on the basis of their assigned responsibilities and all have successfully completed the training. Training was also offered in-country to the remaining professional staff to orient them and develop their competence in using the installed equipment and machinery. Six of them were also trained in Indonesia. Both AITs reported that the training received was extremely useful and relevant. Unfortunately, three trained technicians have since left the institute for more lucrative employment elsewhere.

9. Under supervision of Gemco and MCE the curriculum in all three fields was upgraded in 2010 by a team of experts from the University of Moratuwa, Sri Lanka. The new curriculum replaced the older versions at Matakuliya AIT, but Labuduwa AIT introduced the new curriculum for the advanced courses for the first time. The two institutes reported that the newly developed curriculum is more advanced, more market-oriented and demand-driven. They are confident that the graduates will be better equipped and match the requirements of the job market. However, the international accreditation of the curriculum has not taken place yet due to the high cost of the accreditation procedure.

### *Effectiveness*

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10. The AIT's started the new programs in 2012. In view of the length of the upgraded courses (3.5 and 4 years) the number of graduates from the first enrolment are not known yet, except for the students who graduated from Matakuliya AIT in September 2014. Therefore the performance of the project in terms of student numbers is mainly based upon the numbers of enrolled students. The annual intake of Matakuliya AIT increased by approximately 60 students. Labuduwa AIT did not offer HNDE courses previously and therefore the current enrolment can be fully attributed to the project. The enrolment for the first year of the new courses in this AIT was 191, of which 27% were female, and increased to 228 in 2014. It is expected that given the increase in the number of students following the upgraded courses, the primary objective of delivering 150 new HNDE graduates each year will most likely be achieved. Since the start of the courses 810 students have enrolled at Labuduwa AIT alone. As a result of the success of the program the AIT's now face capacity problems. Due to the lack of sufficient workshop space, Labuduwa AIT had to reject over 500 applicants who also wanted to follow the HNDE courses. The Matakuliya AIT could have enrolled more students if more hostel accommodation had been available for them.

11. The direct result of the project in terms of employment was the creation of 25 new jobs at the two institutes. The project's long term impact depends on the employability of the HNDE graduates, where they will be employed and what they contribute to the economic development of Sri Lanka. Matakuliya AIT reported that 100% of the HNDE students who graduated in 2014, are employed and could find employment immediately. Labuduwa AIT is yet to deliver its first batch of graduates in 2015, but expects that all its graduates will also be able to find employment immediately. This expectation is based on the increasing employment opportunities for skilled professionals in the fast expanding services and industrial sectors in Sri Lanka and the demand from abroad. The country benefits indirectly from the remittances of the engineers who have moved abroad and who are expected to return with more experience.

## **Sustainability**

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12. **Staffing.** The project shows that more students follow the updated programmes and that after completion they are better equipped to work as technicians who meet the industrial knowledge levels for engineering currently required. Therefore the project fitted in and complemented the recipient country's economic and development plans. However, the main threat is the shortage of well-trained and motivated teachers. Both AITs are currently understaffed. To guarantee the sustainability of the project, additional staff needs to be hired and trained. A serious constraint is that well-qualified technicians can receive better salary and benefits elsewhere than at the AITs. In addition, most HNDE graduates seek overseas employment. AIT directors mentioned that the government is now looking into this matter and is expected to propose a new salary scheme for the AITs, comparable to that at universities.

13. **Maintenance.** Although the technical officers have been trained to maintain the equipment and machinery, a number of them have left their jobs permanently or have taken advantage of the option for government employees to go long-term leave to work abroad. Here the issue is again the low salary offered to such officers. As a result, the quality of the training may be threatened if the machinery and equipment are not maintained up to the expected levels.

14. **Financial.** All recurrent expenditure is covered by the government for now but there are two challenges for the financial sustainability of the activities. One is the cost of future replacement of the equipment and the other concerns the systemic changes the government introduced in 2012. The financial contributions from the government are not sufficient to build up reserves needed for the future replacement of the equipment. Another problem, probably temporary, is that the institutions are not yet familiar with the government's revised budgetary framework that was revised in 2012. Both AITs complained about shortcomings in this framework, such as the lack of maintenance agreements.

## **Relevance**

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15. The education sector is among the top priorities of the Government of Sri Lanka. This was confirmed in the letter from the Sri Lankan Ministry of Finance and Planning, indicating that the project is a priority for the Ministry of Education. Technical Vocational Education and Training (TVET) is confronted with the challenge of matching the speed of technological progress in industries and other countries. There is a clear need for technically skilled workers in Sri Lanka. The project responded to this situation by upgrading the two institutes for technical education, by providing better educational equipment and an upgraded curriculum and training the relevant staff in these institutions. After the project was completed, the first batch of graduates entered the labour market. Their rapid recruitment is an indication of the relevance of the changes introduced by the project.

## **Additionality**

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16. The ORET-supported transaction contributed to a larger project, which also received financial and material support from Austria. Given the high priority given to the project by the government and the contribution from Austria, it is most likely that a similar transaction would have taken place with financial support from other sources. However, it is doubtful whether this alternative financing would have been at similar 'soft' conditions as provided in the ORET programme. Given the IMF conditions on foreign debt financing at the time of the identification and preparation of the project, it is certain that the financing of the activities at commercial conditions would not have been feasible.

## **Policy Coherence**

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17. **Coherence.** The transaction fitted well with the Netherlands' policies to strengthen its economic relationships with emerging markets. Sri Lanka is one of the fastest growing countries of Asia and therefore potentially an important business partner. Although education is a priority sector for most aid programmes, it is not for the Netherlands aid programme for Sri Lanka.

18. The primary reason for Sri Lanka to seek a blended loan from ORET lies in its IMF arrangement at the time, which limited the contracting of foreign commercial loans by the country. The blended format of the ORET loan may have been a short-term answer to circumvent that obstacle but it raised the total financing cost of the transaction considerably. It also raises the question of whether a possible undermining of the debt sustainability framework of IMF/World Bank for Sri Lanka was facilitated.

# 1. Introduction

This report presents the findings of the evaluation of the ORET-supported transaction "Enhancement and Up-grading of Technical Education Project at SLIATE for the Ministry of Education, Sri Lanka" (LK00081). The transaction was aimed at improving and upgrading the technical education at two Advanced Institutes of Technology (AITs): the Matakkuiliya AIT located at Colombo in the Western Province and the Labuduwa AIT in Galle in the Southern Province. Both institutes are branches of the Sri Lanka Institute of Advanced Technical Education (SLIATE), which is the recipient organisation. Gemco International Engineering & Construction, a Dutch company, was designated to supply the machinery, equipment and curriculum development and support the organisations with training.

The objective was to increase the number of engineering graduates with Higher National Diplomas in Engineering (HNDE) at the two supported AITs together by 150 per year. The project focused on three specialized areas for the HNDE qualifications: civil engineering, mechanical engineering, and electrical engineering. The transaction was part of a larger project, which included several components, among them civil construction at the ATI Matakkuiliya. MCE Industrytechnik Linz GmbH & Co from Austria was the executing partner in this project. The total transaction amount of the project was € 21.9 million. The ORET-funded transaction amounted to € 10.9 million. The other part of € 11.0 million was financed by the Österreichische Kontrollbank (ÖKB).

This report is part of the evaluation of the ORET programme covering the period 2007-2012 and beyond. The evaluation of transaction is based on the following sources of information:

- Relevant documents in the ORET archives administered by ORET.nl such as progress reports, feasibility studies, technical reports and monitoring reports.
- Documents and data provided by the Sri Lankan authorities and other stakeholders in Sri Lanka.
- Various publications on the situation of technical education in Sri Lanka.
- Interviews with stakeholders in the Netherlands and Sri Lanka in August, September and October 2014.
- Site visits to the recipient institutes in August, September and October 2014.

The structure of the report is as follows. After this introduction the second chapter describes the transaction, its context and the main stakeholders. Chapter three explains the results chain and the method to evaluate the results. The fourth chapter assesses the transaction according to the criteria efficiency, effectiveness, sustainability, relevance, additionality and policy coherence.

## 2. Project Overview

### 2.1 Context

Compared to other countries in Asia, Sri Lanka has a well-established education system. The country's literacy rate among its youth is with 96% high and the country achieves high levels in enrolment and education completion. Education is one of the highest priorities of the Government. Decades ago, a system of primary, secondary, and tertiary education institutions was established (called "Pirivenas"), with well-educated staff, research facilities and libraries. Today, school attendance is compulsory for children between the ages of five and 14 and basic education is free of charge.

Technical and vocational training in Sri Lanka is offered to students with a secondary education. This training falls under the responsibility of the Ministry of Vocational Education and Training and is financed through public funding. The number of technical and vocational institutes has increased during the last decade. Their education programmes include diploma courses from one to four years in such areas as engineering, commerce, business studies, and agriculture. The minimum age for admission at the AITs is 17 years.

One of the most urgent problems is the mismatch between the labour market requirements and the qualifications of graduates from the technical and vocational training institutes. Recognizing this problem, the government of Sri Lanka established the Tertiary and Vocational Education Commission. An important task of this commission was to improve the quality of technical and vocational training and to address this mismatch between the skills of graduates and the requirements in the labour market. The most recent Corporate Plan<sup>1</sup> defines the following policy objectives: (i) improving quality and relevance of the Technical Vocational Education and Training (TVET) programs; (ii) increasing enrolment in the TVET institutions; and (iii) improving operational and managerial efficiency of the TVET institutions.

The government allocated funds to promote skill training at private sector industrial establishments at different locations. The Department of Technical Education and Training, a major provider of technical education and vocational training, increased its services to technical colleges allowing them to enrol about 20,000 students per year. The Sri Lankan Institute of Advanced Technical Education (SLIATE), the end-user of this project, provides higher-level courses in engineering, accounting, commerce, and agriculture for approximately 3000 students.

In spite of these efforts, the quality of Sri Lanka's technical and vocational education system deteriorated over the past few years. One of the reasons is that technical training institutes in Sri Lanka lack proper quality systems and face deteriorating standards, which explains why this project was initiated. A main problem is a lack of motivated teachers. An increasing number of the best teachers focus on teaching as private tutors on more lucrative terms rather than as teacher at the official education institutes. Poor infrastructure and poor teaching and training practices have contributed to the current state of affairs. As a result, the country is losing its competitive advantage vis-à-vis its neighbouring countries such as Bangladesh, India, and China, which are more advanced in teaching market-oriented subjects and vocational skills.

### 2.2 The Project

The Sri Lankan labour market faces a shortage of skilled technicians and engineers. The main reason is the demand resulting from the recovery and rebuilding of the country's infrastructure after the end of the armed conflicts and natural disasters. This project "Enhancement and Upgrading of Technical Education Project at SLIATE" was aimed to address these shortages by improving the education facilities in two technical schools: SLIATE Mattakuliya and SLIATE Labuduwa. The project was expected to enable the two institutions to enrol more students in engineering courses and to increase the number of graduates entering the skilled labour market. The overall purpose of the project was to increase the supply of (mid-level) technical professionals in Sri Lanka and solve employability problems of educated youth at the same time.

The ORET transaction was part of a larger project, which was co-funded by the Austrian government. It involved the upgrading of the technical education at the two AITs. The aim of the

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<sup>1</sup> See: Tertiary and Vocational Education Commission, *Corporate Plan 2013-2017*, Colombo, 2013

project was to enable these post-secondary institutes to grant degrees (the Higher National Diploma in Engineering, HNDE) of sufficient quality that are recognised by domestic and international employers as a higher level engineering qualification. The report of the monitoring mission (19 – 25 September 2010) of ORET.nl mentions that by 2010 two English education institutes (BiTec and University of Birmingham) accepted the HNDE as a sufficient qualification for the first two years of their technical Bachelor curricula.

The project involved the supply and installation of workshop and laboratory equipment for vocational training. Moreover, it included technical assistance to enhance the training skills of the local staff and instruction in the use of the new teaching equipment. The expected outcome of the project was providing Sri Lankan firms with qualified manpower by delivering an additional 150 graduates per year.

The feasibility study observed that a large proportion of highly qualified engineers from Sri Lanka leave the country to seek higher paid employment. This was the case for graduates from the institutes involved in this project as well. But this was not considered to be a major issue because employment abroad generates foreign currency through increasing remittances which is also beneficial for the country. The feasibility study further observed that highly educated engineers are more likely to become self-employed, start a new business in the country that creates growth and other job opportunities. The direct outputs of the project included the creation of 25 new jobs (teachers and lab assistants) to support the expansion of the student capacity at the two AITs.

### **Financing**

The total costs of the project amounted to € 21.9 million, of which € 11 million was financed by the Österreichische Kontrollbank AG (ÖKB). This part was executed by MCE Industrietechnik Linz GmbH & Co. This firm was also involved in the execution of the ORET co-funded transaction. Table 1 presents an overview of the financing of the total project. The Netherlands' transaction amounted to € 10.9 million and was financed for 38% by the ORET grant. The residual was financed by an export credit loan from a private bank. At the request of the Government of Sri Lanka part of the ORET grant (€ 1,451,000) was used to cover the interest payments on the commercial loan. As a result the commercial loan increased with an equal amount to € 8,175,000. The table also presents the division of the Netherlands transaction by main category, including the grant elements by component. It shows that the costs of the local agent were kept within the ORET limit of 5%. The one-off financing costs for bank fees and credit insurance premium are with 8.2% of the transaction value and 11% of the commercial credit quite high.

**Table 1: ORET Transaction by Component in Euro**

Component	Value	Grant percentage	ORET
<b>Total project costs</b>	€ 21,900,000		
Österreichische Kontrollbank AG.	€ 11,000,000		
Transaction value Netherland's share	€ 10,900,000		
- Net production costs	€ 6,498,000	35%	€ 2,274,300
- Financing costs	€ 900,000	75%	€ 675,000
- Technical assistance	€ 1,260,000	35%	€ 441,000
- Costs local agent	€ 545,000	35%	€ 190,750
- Freight costs	€ 350,000	35%	€ 122,500
- Contingencies	€ 447,000	35%	€ 156,450
- Profit	€ 900,000	35%	€ 315,000
Total amount ORET transaction	€ 10,900,000	38%	€ 4,175,000
Interest subsidy	€ 1,451,000		
Commercial export credit	€ 8,175,000		

## ***Equipment***

The transaction supplied the training centres with laboratory instruments and practical training equipment. The following works and equipment were delivered and installed:

- Workshop and laboratory equipment;
- Supply of spare-parts;
- Consumables;
- Civil construction at AIT Mattakuliya;
- Project management services.

The complete project, i.e. the construction of the AIT Mattakuliya facility and the subsequent delivery and installation of the teaching equipment for AIT Mattakuliya and AIT Labuduwa, was planned to take 42 months (3.5 years). It started in the second half of 2008. The economic life-time for the equipment was estimated to be 15 years, whereas the depreciation period for the construction works was expected to be 20 years.

## ***Technical Assistance and Training***

The transaction included a total of 30 man months of technical assistance over a period of one year. Due to the highly sophisticated nature of the equipment, 12 different specialists were involved, mostly seconded from the manufacturer of the equipment, to execute the training. The training was aimed at increasing the educational quality, among others through the introduction of new training curriculum and updating of teaching skills, training in practicum use and proper handling of the equipment. This technical assistance and training component involved:

- Provision of training advisory services;
- Training and upgrading the skills of instructors and lecturers, which also included management training;
- Curriculum improvement of the three course disciplines;
- Assisting instructors and lecturers increasing their skills, productivity and professionally through advanced and special didactic training;
- Planning and implementing a comparative study programme for the staff of the institutions;
- Refreshing and upgrading of skills and knowledge in line with the respective curricula;
- Safe and professional operation and maintenance of workshop and laboratory equipment;
- Preparing the teaching equipment, tools, auxiliaries, consumable materials and other training facilities required for the practical exercises;

## ***Conditionalities***

It was envisaged that the project would require 25 additional educational staff officers, to enable the planned capacity increase. These extra instructors and lecturers were to be recruited during the project implementation and paid by the institutes. This was considered important to achieve sustainability of the project, and subject to the monitoring conditions under ORET.

## **2.3 The Stakeholders**

### ***Client***

The Sri Lanka Institute of Advanced Education (SLIATE) is one of the leading government institutions in higher education in the country. Established in 1995, it functions as an autonomous institute for the management of Higher National Diploma courses under the Ministry of Education of Sri Lanka. The main purposes of SLIATE were: (i) reform and restructure the technical and vocational education system in relation to the changing needs of economic development; (ii) to meet manpower requirements of national development strategies, with special concern for the scarcity of trained manpower at technician level. SLIATE operates 17 Advanced Technological Institutes throughout the country and provides a broad range of multi-disciplinary programmes. The institutes managed by SLIATE are classified in two categories: Advanced Technical Institutes (11) and Advanced Technical Institute Sections (8). The latter are institutes focusing on business studies and languages. At the start of the project, SLIATE and its institutes offered courses to about 5500 students in total.

### ***Targeted Advanced Institutes of Technology***

The project was implemented in two institutes: the AIT Mattakuliya and the AIT Labuduwa, which together offer courses to around 1000 students. At AIT Mattakuliya, a 3.5-year course was provided in the disciplines mechanical engineering, civil engineering, and electrical engineering, including specialised sub-disciplines. The educational programme provides a graduate the Higher National Diploma in Engineering (HNDE). AIT Mattakuliya accommodated around 750 students,

with an educational staff of 33 teachers, instructors, and lecturers. Previously there were no technical facilities available at AIT Mattakuliya. These were borrowed from the VA Sugathadassa Technical College, which is part of the Department of Technical Education and Training (DTET), operating under the Ministry of Education. However, the resources and facilities provided by DTET to AIT Mattakuliya were obsolete and not functioning properly.

AIT Labuduwa offered a 2.5-year course in engineering and information technology, leading to the Higher National Diploma in Engineering (HNDE) respectively the Higher National Diploma in Information Technology (HNDIT). However, before the project started, only HNDIT courses were offered due to a lack of training equipment for engineering teaching. Total enrolment at AIT Labuduwa was low mainly due to a lack of practical training equipment. The feasibility study for this project indicated that a large number of students (around 1200) who had applied, could not be enrolled because of the capacity problems.

### ***The Contractor***

Gemco International BV, part of JWK Industries, is an international (Dutch) engineering company. It provides equipment and training for maintenance, repair workshop facilities, warehousing and educational & training facilities. Gemco implemented similar ORET transactions in China. The assessment of the application mentioned two risks for a successful implementation of the transaction: the large size of the transaction in relation to the total annual turnover of Gemco and the limited experience of Gemco in (public) education sector development. However, it was concluded that these risks could be mitigated by cooperating with MCE Industrietechnik Linz GmbH, which is a large engineering and training company from Austria with over 3500 staff worldwide. MCE is specialised in engineering, technology development, machinery and steel construction, and capacity building and institutional development aspects of project development. MCE was involved in the construction activities as well as in the provision of training and technical assistance funded by the Netherlands' contribution. The technical assistance was provided through the long-term local presence of MCE staff in the project.

### ***Other Stakeholders***

The current education management structure in Sri Lanka came into effect with the establishment of the Provincial Council System in 1987. This decentralised administrative system brought greater involvement of local administrative bodies in the education decision making process. The current organisations that are related to the project at a distance are:

- Ministry of Human Resources Development, Education and Cultural Affairs (MoHRD, E&CA);
- Provincial Ministries / Departments of Education (PME / PDE);
- Zonal Education Offices (ZEO);
- Divisional Education Offices (DEO).

In addition to the Ministry of Education (MoHRD, E&CA) there are two non-cabinet level Ministries involved: the Ministry of School Education (MSE) and the Ministry of Tertiary Education and Training (MTET). Within the first ministry, five subject-based Secretaries are active and relevant for the project (Policy Planning and Performance Review; Education Quality Development; Human Resources Development of Education Services; Administration and Finance; and Supplies).

The grant agreement was concluded with the Ministry of Finance (MoF) of Sri Lanka, which is also responsible for the debt servicing of the commercial loan and ultimately for the financial allocation of teacher salaries and other current expenditures of SLIATE and its schools.

### ***Commercial Banks***

The non-grant share of the Dutch ORET transaction, which amounted to € 8,175,000, was financed by a loan from the RABO Bank International. This loan had a maturity of 10 years with a grace period of 2 years. On top of this credit, the Österreichische Kontrollbank AG provided a credit of € 11 million to finance the Austrian contribution to the project. This bank is specialised in the provision of long-term finance for projects in developing countries that promote sustainable development.

## 3. Methods of Evaluation

### 3.1 Theory of Change

The inputs, activities, outputs, outcomes and long-term results of the project are summarized in the results chain in Table 2. This has helped us to formulate a “Theory of Change” for the project.

**Table 2: Results Chain**

Inputs	Activities	Outputs	Outcomes	Long-term Outcomes
<ul style="list-style-type: none"> <li>• ORET funding</li> <li>• Commercial loan</li> <li>• OEKB funding (Austria)</li> <li>• Equipment and Technical Assistance</li> <li>• Training of AIT staff</li> </ul>	<ul style="list-style-type: none"> <li>• Delivery of teaching equipment, including laboratory equipment, spare parts and including consumables</li> <li>• Upgrading of school buildings at Labudawa</li> <li>• Curriculum development</li> <li>• Technical assistance</li> <li>• Teacher training</li> </ul>	<ul style="list-style-type: none"> <li>• Two upgraded institutes using the delivered teaching equipment: AIT Mattakuliya and AIT Labuduwa</li> <li>• Advanced engineering education curriculum</li> <li>• Renovated school buildings</li> </ul>	<ul style="list-style-type: none"> <li>• 150 additional students per year receive a nationally and internationally recognised qualification of advanced engineering training</li> <li>• 25 new jobs at the 2 AIT's</li> <li>• Improved employment opportunities for 150 graduates per year</li> </ul>	<ul style="list-style-type: none"> <li>• Increase in the quality and quantity of engineering graduates available for Sri Lankan firms, as well as international firms operating in Sri Lanka</li> <li>• Economic development</li> </ul>

The results chain presents an overview of the main elements of the relations that have been investigated in this evaluation. First, the project is aimed at upgrading the performance of the two institutes for advanced engineering education (AIT Mattakuliya and AIT Labuduwa). This was done with a view to enlarge the number of persons with advanced technical skills on the Sri Lankan labour market, responding to the current needs of the Sri Lankan economy. This expansion of skilled labourers also depends on factors, such as the availability of financial and human resources in the two upgraded institutes, adequate management of the institutes, developments in the local labour market and the number of skilled labourers that move to work abroad.

The evaluation of the transaction was conducted according to six criteria: Efficiency, Effectiveness, Sustainability, Relevance, Additionality and Coherence.

#### *Efficiency*

Efficiency measures how inputs are translated into outputs. Efficiency was deduced from existing documents of implementing agencies in the project (e.g. dossiers ORET.nl, beneficiary training institutions, etc.) on realized outputs (supply of equipment, training and capacity building), budget, delays and their causes. Visits by the evaluators to the two institutions were conducted in August and September 2014.

In particular the question whether the newly provided equipment and facilities are actually used by the recipient educational institutions is relevant. For evaluating the efficiency criterion the following indicators are used concerning the current functioning of the institutions:

- Availability of the equipment delivered.
- Present quality and status of the equipment delivered.
- Number of staff trained.
- Status of the training centre.

The institutional analysis also included information from the relevant authorities, such as the Ministry of Education.

### ***Effectiveness***

Effectiveness relates the direct results of an intervention (output) to the sustainable achievement of policy objectives (outcome). In this case the intervention is considered effective if the number of students that finalise the courses with the adequate qualifications and enter the labour market, have increased. Given the end-date of the transaction, the number of students who successfully graduated from the courses was not known yet at the moment of this evaluation except for the students who followed the upgraded course at Matakuliya AIT and graduated in September 2014. Therefore the number of students enrolled at the two institutes is used as a proxy indicator.

In addition, effectiveness is deduced from the in-depths interviews with stakeholders. The direct responsibility for this project is with SLIATE and its two educational institutions. As part of the analysis, in-depth interviews with heads of departments and staff of the two AITs were conducted and other stakeholders. The guidelines for the discussions were semi-structured questionnaires covering technical, financial and administrative aspects of the recipient organisations.

### ***Sustainability***

Sustainability of the project was emphasised throughout this evaluation. The indicators used to assess sustainability are multi-dimensional: financial, technical and institutional. The indicators collected in the interviews supported the analysis of the different aspects of sustainability. Financial sustainability was analysed using the budgetary allocations made by the different levels of government. Institutional sustainability was explored by disentangling the operational process of the educational services. Technical sustainability was investigated during visits of the two AITs. Social sustainability was derived by looking at the circumstances in the recipient institutions.

### ***Relevance***

The OECD/DAC defines relevance as the extent to which the objective of an intervention is consistent with beneficiaries' requirements, country needs, global priorities and partners' and donors' policies. Relevance should demonstrate whether the intervention made a sustainable contribution in achieving the ultimate objective (the impact). The transaction has been regarded as valuable, or relevant, if it has generated additional numbers of graduates with qualifications that meet the requirements in the labour market.

### ***Additionality***

Additionality tries to establish whether ORET in general has fulfilled a catalytic role in mobilising additional finance in the country that would otherwise not have taken place. Additionality has been analysed on the basis of in-depths interviews by designing a fictitious counterfactual situation of a continuation of the institutes as they were before the project.

### ***Coherence***

Under coherence we will assess to what extent the ORET programme and transactions have complemented or contradicted other instruments of Dutch development cooperation and foreign (economic) policy.

## 4. Results of the Evaluation

### 4.1 Efficiency

#### *Appraisal Phase*

The period from the date of submission of the application on 2 October 2006 to the grant agreement (7 November 2008) was about 25 months; 14 months to approve the application (17 December 2007), and another 11 months before the grant agreement was signed. During this period there were some discussions about the financing package of the transaction, in particular about the commercial loan, and the modalities of the grant payment. In the end it was decided that part of the ORET grant would be used to cover the interest payments on the commercial loan (see Table 1). The grant agreement contained a few additional requirements, among them that the Government of Sri Lanka would guarantee to provide sufficient funds to cover operational costs and to ensure that the two educational institutions would be adequately staffed.

#### *Upgrading of the School Buildings and Teaching Equipment*

Upgrading the school buildings at Labuduwa was one of the project activities. In addition, the project supplied and installed the teaching equipment and provided training on their use. All necessary construction work was completed on time by 30 April 2011, including the supply and installation of the teaching equipment. The suppliers gave a guarantee period till the 27th of March 2012. Teaching equipment, including laboratory equipment and consumables were delivered to both AITs. The project also expanded the hostel accommodation, making it possible to enrol more students. The construction activities were mainly financed by the funding from the Austrian government.

The general observation of the Heads of Departments of both Matakkuiliya and Labuduwa AITs was that the upgrading of the facilities and the supply and installation of the equipment were executed efficiently despite some delays in customs clearance of imported materials. The expatriate staff officer from MCE Industrietechnik Linz GmbH was extremely helpful in supervising the activities and facilitating the activities through his contacts with the customs authorities.

#### *Technical Assistance and Training*

The project also envisaged providing technical assistance to enhance the training skills of the local teaching staff and to instruct them on how to use the new equipment. This was done in tandem with the Austrian assistance since part of the equipment was also procured with Austrian funds. The Austrian equipment component of the project was realised by an Austrian Company, Bilfinger VAM, which provided a large part of the machinery. The MCE representative was deployed at Labuduwa AIT where new HNDE courses were introduced and all equipment was installed. The expatriate staff officer has served nearly three years at Labuduwa. The AIT staff highly valued the technical assistance that he gave to the staff, particularly to the demonstrators and technicians.

Matakkuiliya AIT already provided similar courses before the start of the project for some years. Their courses were updated and the labs and workshops were newly equipped. According to the management of the AITs, all technical officers are now competent to handle the equipment and machinery that was installed by the project. End 2014, the contract of the expatriate staff officer ended. The AITs requested a further extension of his services since his contribution, particularly at workshops, is highly valued in all trainings. So far funding for this has not yet been made available.

Training of the teachers, the instructors, the technical staff and the management of the institute was expected to enhance the human resource capacity required for the proposed three courses. Teacher training was provided at Birmingham University in the UK for nine academic staff and five lecturers from Matakkuiliya AIT and four lecturers from Labuduwa AIT. The training took nine months to earn a post-graduate diploma in the respective fields of civil, electrical and mechanical engineering. The professionals were selected on the basis of their assigned responsibilities. All trainees have successfully completed the training. Both AITs reported that the training received as part of the ORET transaction was very useful and relevant.

Training was also provided in-country to the remaining lecturers, instructors, and technicians. Most training of the technicians was done in-house to orient them and develop their competence in using the installed equipment and machinery. Six demonstrators and technicians were also trained in Indonesia. Regrettably, after completing their one year service contract, three trained technicians have since left their job for more lucrative employment elsewhere.

### **Introduction of a New Curriculum**

Improving the curriculum of the three course disciplines, civil engineering, mechanical engineering, and electrical engineering, was one of the major outputs of the project. The objective was to introduce a more market-oriented and demand-driven curriculum at par with international standards. The curriculum in all three fields was prepared and completed in 2010 by a team of experts from the University of Moratuwa, Sri Lanka under supervision of Gemco. The Moratuwa University is the one of the most recognised engineering universities in Sri Lanka. The new curriculum replaced the older version at Matakuliya AIT, whereas Labuduwa AIT introduced the new curriculum for the courses for the first time.

The two institutes reported that the newly developed curriculum is indeed more advanced, more market-oriented and demand-driven. They are confident that the graduates will be better equipped and match the requirements of the job markets. At the moment of writing this report, it is still unclear whether private sector companies will also appreciate the qualifications of the 'new style' graduates, since only one batch of graduates has entered the labour market so far. Although planned, international accreditation of the curriculum has not taken place yet due to the high cost of the accreditation procedure.

Both institutes reported that, although the new curriculum is more advanced and demand-driven, the structure of the curriculum, particularly the practical components, needs to be re-arranged because the current sequencing of the components is not optimal. This was also pointed out by the departments of the Directorate of Sri Lanka Institute of Advanced Technological Education (SLIATE). Yet, so far no action has been taken. The institutes are not authorised to implement changes because the SLIATE Committee of Experts first has to approve the proposed changes. The HNDE is also under consideration for an upgrade to a BSc engineering degree by adding one more year to the course.

### **Price-Quality Ratio**

The contract between Gemco and the Government of Sri Lanka was assigned through direct negotiations. A Cabinet appointed a negotiation committee was responsible for the contract negotiations, the check on the prices and submitting the proposals to the Ministries. In addition, an independent evaluator (SGS) hired by ORET.nl, checked the prices of the various components of the transaction. He concluded that the prices were in general fair. Since the project delivered the equipment and services according to the specifications of the contract, as witnessed by the Certificate of Completion signed by the Government of Sri Lanka, it can be concluded that the contract price for this transaction was reasonable. Nevertheless, there were some discrepancies between the foreseen budget allocations and the actual expenditures.

**Table 3: ORET-Financed Transaction Components**

	Budget	Actual			
		Foreign share	NL share	Total	NL share
Equipment	€ 4,089,000	€ 2,160,005	€ 1,131,324	€ 3,291,329	34.4%
Credit insurance	€ 900,000		€ 905,988	€ 905,988	100.0%
Spare parts	€ 327,000	€ 209,473	€ 25,768	€ 235,241	11.0%
Consumables	€ 409,000	€ 138,702	€ 278,957	€ 417,659	66.8%
Services	€ 1,850,000	€ 1,758,452	€ 247,607	€ 2,006,059	12.3%
Transport + insurance	€ 350,000		€ 420,854	€ 420,854	100.0%
Labour	€ 785,000		€ 1,452,921	€ 1,452,921	100.0%
Depreciation	€ 61,000				
Overhead	€ 239,000		€ 109,000	€ 109,000	100.0%
Profit	€ 900,000		€ 1,064,606	€ 1,064,606	100.0%
Sub-total	€ 9,910,000	€ 4,266,632	€ 5,637,025	€ 9,903,657	56.9%
Agent costs	€ 545,000	€ 634,152		€ 634,152	0.0%
Contingencies	€ 447,000	€ 324,472	€ 39,740	€ 364,212	10.9%
Total	€ 10,902,000	€ 5,225,256	€ 5,676,765	€ 10,902,021	52.1%

The transaction was approved on the basis of the budget specified in Table 3. Comparing the budget with the actual expenditures of the transaction shows substantial savings on equipment, contrary to the higher expenditures for labour inputs. Main reasons for these discrepancies are the efficient negotiations on the prices of the equipment and the need for more labour inputs than initially foreseen. Overall, the total expenditures still matched the budget. An external auditor checked the expenses, including the origin of the inputs. He approved the actual expenditures and concluded that the percentage of inputs originating from the Netherlands was more than 50%.

### **Quality and Current Availability of the Delivered Equipment**

The project provided many new and up-to-date tools, equipment and machinery. Both recipient institutes perceived the transaction as a positive contribution to enhancing their training capacity and the quality of the courses. However, certain equipment and machinery have not served the AITs as well as intended. Main reason is the lack of maintenance facilities in the country. For example, it was reported that:

1. The two multi-functional photocopiers at Labuduwa and Matakuliya are non-operative as the toner cartridges and the maintenance are not available in Sri Lanka. The AIT's did not arrange a service agreement with a servicing agent/company in Sri Lanka resulting in these four photocopiers have been non-operative for a long time;
2. The two portable compressors in the automobile engineering lab are not functioning properly due to problems with the valves.
3. The milling machine also has maintenance problems and there is no local agent to maintain it;
4. The stick welding plant also gives problems due to the lack of a service agent;
5. The air-conditioning training unit does not work properly;
6. The electrical engineering department at Labuduwa AIT reported that micro-electronic practical work is not possible due to the lack of a high voltage laboratory which is only available at Moratuwa University;
7. The consumables were supplied in large quantities, creating storage problems and resulting in wastage. Providing the institutes with funds to purchase these consumables when needed would have saved money.
8. Some equipment such as the survey equipment does not have all the necessary software to be able to use it fully. Some software needs to be updated and/or protected against viruses.

Despite these reported shortcomings both institutes expressed their overall satisfaction with the assistance that they received.

## **4.2 Effectiveness**

The expected short-term outcome of the project was an additional 150 HNDE graduates that would enter the labour market. The project started the new program only in 2011/2012. In view of the length of the upgraded courses, the numbers of graduates from the first enrolment are not known yet at the moment of this evaluation. Therefore the analysis is based on the numbers of enrolled students. Table 4 presents the enrolment numbers of HNDE candidates at Matakuliya AIT per year, course and gender. The table compares the numbers enrolled before the project in 2009 with the numbers in 2014. The intake was 203 students in 2009 when the project started, and grew to 263 in 2014: an increase of 60 students per year at Matakuliya AIT alone. Assuming a similar percentage of failed students as before, which was on average about 10%, it can be expected that about 240 students will graduate and enter the labour market of which 60 result from the project.

**Table 4: Annual Enrolment of HNDE Candidates at Matakuliya AIT**

<b>Year</b>	<b>Course</b>	<b>Total</b>	<b>% Courses of Enrolment</b>	<b>Female</b>	<b>% Females</b>
2009	civil	74	36%	15	20%
	electrical	76	37%	8	11%
	mechanical	53	26%	7	13%
<b>Total</b>		<b>203</b>	<b>100%</b>	<b>30</b>	<b>15%</b>
2014	civil	84	32%	17	20%
	electrical	77	29%	36	47%
	mechanical	73	28%	17	23%
	quantity survey	29	11%	27	93%
<b>Total</b>		<b>263</b>		<b>97</b>	<b>37%</b>

Labuduwa AIT did not offer HNDE courses previously and therefore the current enrolment can be fully attributed to the project. Table 5 presents the annual enrolment of HNDE Candidates at Labuduwa AIT. The first intake of students by Labuduwa AIT was in 2011. The number of new

students was 191, of which 27% was female. In 2012 the quantity survey course was also introduced. The total intake for all courses was 211 students; excluding quantity survey it was 179 students. In 2013, total enrolment increased further to 350 students; excluding quantity survey, rose to 292. In 2014, the total enrolment was 228; excluding quantity survey the number enrolled in the civil, mechanical and electrical courses was 180.

**Table 5: Annual Enrolment of HNDE Candidates at Labuduwa AIT**

Year	Diploma	Labuduwa AIT		Female Enrollment	
		Enrolment	% Course-wise	Number	%
2011	civil	71	37%		
	electrical	62	32%		
	mechanical	58	30%		
	quantity survey	0	0		
<b>Total</b>		<b>191</b>	<b>100%</b>	<b>51</b>	<b>27%</b>
2012	civil	86	41%		
	electrical	53	25%		
	mechanical	40	19%		
	quantity survey	32	15%		
<b>Total</b>		<b>211</b>	<b>100%</b>	<b>55</b>	<b>26%</b>
2013	civil	98	28%		
	electrical	80	23%		
	mechanical	114	33%		
	quantity survey	58	17%		
<b>Total</b>		<b>350</b>	<b>100%</b>	<b>40</b>	<b>11%</b>
2014	civil	68	30%		
	electrical	66	29%		
	mechanical	46	20%		
	quantity survey	48	21%		
<b>Total</b>		<b>228</b>	<b>100%</b>	<b>45</b>	<b>20%</b>

From the figures it can be concluded that:

1. The primary objective of delivering 150 new HNDE graduates each year is expected to be achieved in view of the increase in the number of enrolled students and the fail rates. In fact, we expect the target to be surpassed. In the four years since the start of the project, 980 students were enrolled at Labuduwa AIT alone, of which 842 followed the three courses developed within the project. These numbers compare favourably to the expected target of 150 graduates per annum for both AITs combined.
2. If the additional 60 students, over and above the intake of HNDE courses before the project started at Matakuliya AIT, are taken together with the Labuduwa AIT HNDE enrolment, 268 additional places per year have been created.

**Table 6: HNDE Enrolment at Labuduwa and Matakuliya per Course**

Year	HNDE	Labuduwa AIT	Matakuliya AIT	Total
2014	civil	68	84	152
	electrical	66	77	143
	mechanical	46	73	119
	quantity survey	48	29	77
<b>Total</b>		<b>228</b>	<b>263</b>	<b>491</b>

Table 6 summarizes the numbers for 2014, showing that close to 500 students enrolled in the HNDE courses at the Matakuliya and Labuduwa AITs. Table 7 reports the enrolment of students per study year (3 year in-house and 6 months of Practical Training outside campus) in the respective HNDE courses. Labuduwa AIT alone will exceed the expected output of 150 engineers with a HNDE qualification in 2014. The output will be 130% of the target number. However, it is important to realize that no candidate has yet graduated from Labuduwa AIT. At Matakuliya AIT, the third year students have already sat for the final examination in September – October 2014. The institute mentioned that over 94% of students have passed their exams.

**Table 7: Expected Output of HNDE Engineers at Labuduwa AIT**

<b>Department</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Total</b>	<b>% Against Target</b>
civil	56	78	71	205	137%
electrical	50	70	58	178	119%
mechanical	46	76	34	156	104%
quantity survey	45	42	NR	87	NR
<b>TOTAL</b>	<b>197</b>	<b>266</b>	<b>163</b>	<b>626</b>	<b>139%</b>

The tables also show that approximately 25 – 30% of the enrolled students are female. Their share increased with the introduction of the quantity survey course which seems to attract more female students. Further, it should be realized that the two institutes reported the numbers the number of students who are still following the course at the end of the year. The number of students who register for the course at the start of the academic year was much higher. However, many of the first year candidates left the course to follow other programs elsewhere. In 2014, Labuduwa lost 20 candidates after registration, leaving to other institutions. In 2013, the number leaving after registration was 58. Many of the registered students who leave the courses, do so in the first three months to study elsewhere at the universities, the National Colleges of Education or overseas.

### **Long-Term Impact**

The direct result on employment of the project was the creation of 25 new jobs, because the teaching institutes hired new teachers and lab assistants, in order to be able to expand their student capacity. The project’s long term impact depends on the employability of the HNDE graduates: where will they be employed and what can they contribute to the economic development of Sri Lanka? Detailed information is lacking at this stage. Matakkuiliya AIT reported that all their HNDE students, who graduated in 2014, are employed and were able to find a job immediately. Labuduwa AIT is yet to deliver its first batch of graduates in 2015 but expects that all its graduates will also be able to find employment immediately.

The demand for technical officers is very high, which is one of the reasons why the AITs find it difficult to recruit demonstrators. Technical officers get a better salary and benefits elsewhere than at the AITs. After completing their internships, almost all HNDE graduates start looking for overseas employment opportunities. Many of them find a job in the Middle East and more recently in South Korea. These jobs are more lucrative and allowing them to send remittances back to Sri Lanka. Remittances are one of Sri Lanka’s top external revenue sources.

Sri Lanka is a fast growing economy with the second best economic growth rate in Asia in the last two years, only second to China. The fast expanding services and industrial sectors are creating more employment opportunities for skilled professionals at home. It is expected that the country’s growth will require more technical graduates and that the upward pressure on the wages of engineers will stimulate the graduates to stay in Sri Lanka. In the meantime, Sri Lanka still benefits indirectly from the remittances of those engineers who moved abroad but who are expected to return with more experience. The Dutch and Austrian assistance to Matakkuiliya and Labuduwa AITs are therefore thought to have made an important contribution to the economy of Sri Lanka.

## **4.3 Sustainability**

### **Financial Sustainability**

The government was expected to finance all recurrent cost through its institutional budgeting system. So far, this has worked well with the Matakkuiliya and Labuduwa AITs, partly because the project covered most of the recurrent costs during the implementation of the project. After completion in 2012 all recurrent expenditure has to be covered from the government budgetary framework. However, the AITs face two issues regarding financial sustainability. The first is the replacement of the equipment when needed and the second is a transitional problem caused by the systemic budget changes the government introduced in 2012. We found that the institutions are not yet familiar with the revised budgetary framework that allows institutions more flexibility in budgeting. Both AITs were complaining about shortcomings, such as software problems, lack of maintenance agreements, etcetera, though the budgetary framework created space for the institutions to budget these and procure such items. The institutional directors, the heads of departments and accountants require orientation on how the government’s new budgetary framework works in practice. SLIATE could take an initiative in this regard with technical assistance from the Treasury, Ministry of Higher Education and the Ministry of Finance.

Technical education and training through the 'School Model' such as the AITs is costly for the government. One of the most challenging issues is the financing of the replacement of tools, equipment and machinery, due to wear and tear or becoming obsolete in a world of fast changing technology. It is even more challenging when the institutions have to provide the education for free and are fully dependent on the government budget. The current allocations hardly provide the opportunity to create reserves to finance replacements in the future.

Better cost-recovery could be an option but would require a deviation from the general policy of providing a free education from primary school to university in Sri Lanka. The HNDE course could be marketed easily for Rs 500,000/ in the open market. Yet the fees for the courses at Labuduwa and Matakuliya are only Rs350/ (US\$2.5) for the full three years. Therefore, the dependence on government funding for up-dating and replacing tools, equipment and machinery will be rather challenging for SLIATE which manages all AITs. This could be a factor affecting the quality of education and training in the medium-term.

The policy of both AITs and SLIATE is to increase their enrolment figures. The government policy is to enhance science based education and convert all tertiary institutions to accommodate more technical and scientific fields away from the liberal arts education. Therefore the pressure will grow on the technology institutions to provide more places for admission. The government needs to make a serious effort to sustain the quality of the HNDE programs. If expansion happens without providing more funds for facilities, operational budgets and teaching salaries, the quality of the education and training will suffer as a result.

### *Staffing of the Colleges*

The human resources needed by the AITs can be classified in three categories. One is the academic staff consisting of lecturers and demonstrators; the second is the technical hands in the workshops and laboratories who are also expected to largely do the day-to-day maintenance; the third is the technical assistance staff needed for repairs and maintenance. For the successful implementation of the project and its sustainability after completion, around 38 additional lecturers and 46 additional instructors need to be hired. They will also need training in using the workshop equipment as teaching tools. However, both AITs are severely under-staffed and run mostly on temporary visiting staff. Some of the departments do not have a single full-time lecturer to run the programs. Particularly the civil engineering department suffers the most at both Matakuliya and Labuduwa AITs. The shortage of teaching staff is illustrated in Table 8. Presently, Labuduwa AIT has 16 vacancies for demonstrators and 11 vacancies for lecturers in the four departments and there is no demonstrator available for the electrical department. Table 8 also provides the number of approved positions and the number and percentage of vacant positions in the three academic departments. The engineers who leave, are attracted by more lucrative employment in-country and overseas.

**Table 8: Staff Vacancies at Labuduwa AIT October 2014**

Department	Lecturers			Demonstrators		
	Approved Cadre	Lecturers with tenure	% of Vacancy	Approved Cadre	In Position	% of Vacancy
civil	5	0	100%	5	1	80%
mechanical	6	2	66%	5	2	60%
electrical	6	4	33%	6	0	100%
<b>Total</b>	<b>17</b>	<b>6</b>	<b>65%</b>	<b>16</b>	<b>3</b>	<b>81%</b>

Both Labuduwa and Matakuliya try to run their programs with visiting lecturers and demonstrators. This has been possible as both in Colombo and Galle where such qualified engineers are available and like to teach as a part-time job. Therefore, the programs at both AITs still are running uninterrupted and according to the management of the institutes, without affecting the quality. AIT directors mentioned that the government is now looking into this matter. It is expected to propose a new salary scheme for the AITs since the university salaries have also been revised. This resulted in substantial increases for all grades of employees.

### *Technical Sustainability*

There are considerable challenges, now the term of the expatriate training officer of the project will soon be over. Although he trained the technical officers to maintain the equipment and machinery, many of them have left their jobs or have taken advantage of the option for government employees to take long-term leave to work abroad. The difficulty to retain technical officers

because of their low salary is becoming a threat for the quality of the training if the machinery and the equipment are not well-maintained.

### **Other Constraints**

As a result of its success, the program suffers some capacity problems, such as the lack of workshop space, particularly for drawings at Labuduwa. Although Labuduwa AIT has 450 drawing tables, only 55 can be accommodated in the available space while nearly 400 tables are just kept in storage. If the drawing lab space could be enlarged, the institute could enrol more students.

The demand for Labuduwa AIT is heavy and not matched by its current teaching capacity. This year only 228 students could be admitted, forcing the institute to reject over 500 applicants who wanted to follow the HNDE courses at Labuduwa AIT. Even this number of students forced Labuduwa to run parallel lab and workshop sessions, requiring also more time of the existing teaching staff. The limiting constraint is different at Matakkuiliya AIT. This institute could have taken more students if more hostel space to house them would have been available.

At graduation, the HNDE candidates who follow the upgraded programme have accumulated nearly 120 credit hours, which is more than the 90 hours required for the three year HNDE course. Against this background SLIATE and Labuduwa and Matakkuiliya AITs are currently discussing the option of adding an additional year to the courses in order to be able to grant a BSc degree in engineering in the medium-term. The National Qualifications Framework requires 120 credit hours for this.

## **4.4 Relevance**

A priority letter was issued by the Sri Lankan Ministry of Finance and Planning, indicating that the project was a priority for the Ministry of Education. For Sri Lanka, development of the education sector is among the top priorities of the Government. This is also reflected in its policy of providing free education from primary school up to the first degree level of university. With respect to Technical Vocational Education and Training (TVET), the country's education sector is confronted with the challenge of matching its outcomes to the speed of technological progress in industry and that of other countries. The supply of Sri Lankan technicians lags behind local demand and falls short in terms of updated skills and know-how required by the new technologies used in the industrial sector. In addition, a large number of graduates still lack the skills to become either self-employed or function as an engineer.

After completion of the project the first batch of graduates entered the labour market and was employed quickly. This is an indication of the relevance of the changes introduced in the educational system of the two recipient institutions by the project.

## **4.5 Additionality**

The ORET-supported transaction contributed to a larger technical education project, which included financial and material support from Austria. Given the high priority that the government gave to the project and the contribution from Austria, it is most likely that a similar transaction would have taken place with financial support from other sources. However, it is doubtful whether such alternative financing would have been at similar 'soft' conditions as the ones provided by the ORET programme. In view of the IMF conditions on foreign debt financing at the time of the identification and preparation of the project, it is certain that the financing of the activities at commercial conditions would not have been feasible.

## **4.6 Coherence with Other Policies**

The project shows that that more students will be able to follow updated programmes, and after completion expected to be better equipped to work as technicians. This will decrease labour market shortages for technicians and skilled workers, and assist in meeting required industrial knowledge levels for engineering. The project fitted well within the recipient country's economic and development plans. For Sri Lanka, the main concern in the future remains a lack of well-trained and motivated teachers at the AITs, which have to compete with other employment opportunities for teachers that can offer more lucrative salaries, such as private classes.

## Annex 1: Annual Enrolment of HNDE Candidates

**Table 9: Annual Enrolment of HNDE Candidates at Matakuliya AIT**

Year	Course	Total	% Courses wise Enrolment	Female	% Female	Failed
2005	civil	59	39%	21	36%	4
	electrical	43	28%	6	14%	2
	mechanical	51	33%	4	8%	4
<b>Total</b>		<b>153</b>		<b>31</b>	<b>20%</b>	<b>10</b>
2006	civil	60	35%	19	32%	2
	electrical	65	38%	16	25%	7
	mechanical	45	26%	7	16%	6
<b>Total</b>		<b>170</b>		<b>42</b>	<b>25%</b>	<b>15</b>
2007	civil	64	35%	18	28%	9
	electrical	63	35%	9	14%	21
	mechanical	55	30%	10	18%	4
<b>Total</b>		<b>182</b>		<b>37</b>	<b>20%</b>	<b>34</b>
2008	civil	66	33%	19	29%	6
	electrical	70	35%	12	17%	9
	mechanical	64	32%	15	23%	6
<b>Total</b>		<b>200</b>		<b>46</b>	<b>23%</b>	<b>21</b>
2009	civil	74	36%	15	20%	5
	electrical	76	37%	8	11%	16
	mechanical	53	26%	7	13%	0
<b>Total</b>		<b>203</b>		<b>30</b>	<b>15%</b>	<b>21</b>
2014	civil	84	32%	17	20%	
	electrical	77	29%	36	47%	
	mechanical	73	28%	17	23%	
	quantity survey	29	11%	27	93%	
<b>Total</b>		<b>263</b>		<b>97</b>	<b>37%</b>	

**Table 10: Annual Enrolment of HNDE Candidates at Labuduwa AIT**

Year	Diploma	Labuduwa AIT		Female Enrolment	
		Enrolment	% Course-wise	Number	%
2011	civil	71	37%		
	electrical	62	32%		
	mechanical	58	30%		
	quantity Survey	0	0		
<b>Total</b>		<b>191</b>	<b>100%</b>	<b>51</b>	<b>27%</b>
2012	civil	86	41%		
	electrical	53	25%		
	mechanical	40	19%		
	quantity Survey	32	15%	15	47%
<b>Total</b>		<b>211</b>	<b>100%</b>	<b>55</b>	<b>26%</b>
2013	civil	98	28%		
	Electrical	80	23%		
	Mechanical	114	33%		
	Quantity Survey	58	17%	21	36%
<b>Total</b>		<b>350</b>	<b>100%</b>	<b>40</b>	<b>11%</b>
2014	civil	68	30%		
	electrical	66	29%		
	mechanical	46	20%		
	quantity Survey	48	21%	25	52%
<b>Total</b>		<b>228</b>	<b>100%</b>	<b>45</b>	<b>20%</b>

## Annex 2: Site Visits and Persons Interviewed

Location	Date of Visit	Officer Interviewed
<b>SLIATE, Colombo -10</b>	08 <sup>th</sup> September 2014	Mr. Hillary E Silva, Director General, Colombo 10
	Do	Mr. John , Director (Projects)
<b>Mattakkuliya ATI, Colombo 15</b>	29 <sup>th</sup> September 2014	Ms. Anudhiya Ariyaratne, Director 94-71-866-1115, 94-11-252-1152
		Head, Mechanical Engineering Ms. A.K. Liyanage
		Head Civil Engineering and Quantity Survey Mr. B. K. D. Balasooriya
		Head Electrical Engineering Mr. S. U. Yogendrha
<b>Labuduwa AIT Galle</b>	30 September 2014	Mr. N. K. A. Rupasinghe, Director 94-771681233, 94 912 227880
		Head Mechanical Engineering Ms. Chandarani Tennakoon
		Head Civil Engineering, Mr. N. K. A. Rupasinghe,/ Mrs P.W.C.Kusumalatha
		Head Electrical Engineering
		Head Quantity Survey Mr. N. K. A. Rupasinghe,