



Completion Report

Project Number: 42278-022
Grant Number: 0211
August 2019

Lao People's Democratic Republic: Strengthening Technical and Vocational Education and Training Project

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Asian Development Bank

CURRENCY EQUIVALENTS

Currency unit – Kip (KN)

		At Appraisal (15 June 2010)	At Project Completion (31 December 2016)
KN1.00	=	\$0.00012104	\$0.00012121
\$1.00	=	KN8,262.00	KN8,250.00

ABBREVIATIONS

ADB	–	Asian Development Bank
CBT	–	competency-based training
EIRR	–	economic internal rate of return
EMIS	–	education management information system
GAP	–	gender action plan
GIZ	–	Deutsche Gesellschaft für Internationale Zusammenarbeit
Lao PDR	–	Lao People's Democratic Republic
LMIS	–	labor market information system
MOES	–	Ministry of Education and Sports
MLSW	–	Ministry of Labor and Social Welfare
NCCI	–	National Chamber of Commerce and Industry
NTC	–	National Training Council
TVED	–	Technical and Vocational Education Department
TVET	–	technical and vocational education and training
TWG	–	trade working group
VEDI	–	Vocational Education Development Institute

NOTES

- (i) The fiscal year (FY) of the Government ends on 30 December (until 2017, FY ends on 30 September)
- (ii) In this report, "\$" refers to United States dollars unless otherwise stated.

Vice-President	Ahmed M. Saeed, Operations 2
Director General	Ramesh Subramaniam, Southeast Asia Department (SERD)
Directors	Yasushi Negishi, Lao PDR Resident Mission, SERD Ayako Inagaki, Human and Social Development Division, SERD
Team leader	Khamtanh Chanthay, Senior Project Officer, SERD
Team members	Theonakhet Saphakdy, Senior Social Development Officer (Gender) SERD Malina Sisavanh, Associate Project Analyst, SERD

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BASIC DATA

A. Grant Identification

- | | | |
|----|-----------------------------------|---|
| 1. | Country | Lao PDR |
| 2. | Grant number and financing source | 0211-LAO (SF) |
| 3. | Project title | Strengthening Technical and Vocational Education and Training Project |
| 4. | Recipient | Lao PDR |
| 5. | Executing agency | Ministry of Education and Sports |
| 6. | Amount of grant | \$23.0 million |
| 7. | Financing modality | Project grant |

B. Grant Data

- | | | |
|----|-----------------------------|-------------------|
| 1. | Fact Finding | |
| | – Date started | 19 April 2010 |
| | – Date completed | 5 May 2010 |
| 2. | Grant negotiations | |
| | – Date started | 3 June 2010 |
| | – Date completed | 4 June 2010 |
| 3. | Date of Board approval | 9 July 2010 |
| 4. | Date of grant agreement | 29 July 2010 |
| 5. | Date of grant effectiveness | |
| | – In grant agreement | 29 October 2010 |
| | – Actual | 1 September 2010 |
| | – Number of extensions | 0 |
| 6. | Project completion date | |
| | – Appraisal | 30 September 2015 |
| | – Actual | 30 June 2016 |
| 7. | Grant closing date | |
| | – In grant agreement | 31 March 2016 |
| | – Actual | 31 December 2016 |
| | – Number of extensions | 1 |
| 8. | Financial closing date | |
| | – Actual | 5 December 2017 |
| 9. | Disbursements | |

a. Dates

Initial Disbursement 19 November 2010	Final Disbursement 2 May 2017	Time Interval 78 months
Effective Date 1 September 2010	Actual Closing Date 5 December 2017	Time Interval 88 months

b. Amount (\$ million)

Category	Original Allocation (1)	Increased during Implementation (2)	Cancelled during Implementation (3)	Last Revised Allocation (4=1+2-3)	Amount Disbursed (5)	Undisbursed Balance (6 = 4-5)
Civil Works	3.94	0.95	0.00	4.89	4.95	(0.06)
Consulting Services	4.13	0.48	0.00	4.61	4.49	0.12
Contracted Training	2.44	0.14	0.00	2.58	2.54	0.04
Equipment, Vehicle	4.84	(0.54)	0.00	4.30	4.36	(0.06)
Studies and Social Marketing	0.48	(0.18)	0.00	0.30	0.30	0.00
Learning Materials	0.06	0.62	0.00	0.68	0.58	0.10
Project Management	0.48	(0.20)	0.00	0.28	0.31	(0.03)
Staff Development	0.54	0.03	0.00	0.57	1.25	(0.68)
Voucher Program	4.12	0.67	0.00	4.79	4.00	0.79
Unallocated	1.97	(1.97)	0.00	0.00	0.00	0.00
Total	23.00	0.00	0.00	23.00	22.78	0.22

C. Project Data

1. Project cost (\$ million)

Cost	Appraisal Estimate	Actual
Foreign exchange cost	9.75	10.15
Local currency cost	15.05	17.16
Total	24.80	27.31

2. Financing plan (\$ million)

Cost	Appraisal Estimate	Actual
Implementation cost		
Recipient financed	1.80	4.53
ADB financed	23.00	22.78
Other external financing	0.00	0.00
Total implementation cost	24.80	27.31
Interest during construction costs		
Recipient financed	N/A	
ADB financed	N/A	
Other external financing	N/A	
Total interest during construction cost	N/A	

3. Cost breakdown by project component (\$ million)

Component	Appraisal Estimate	Actual
A. Project Components		
1. Output 1: Improved quality of TVET	9.00	8.15
2. Output 2: Increased and more equitable access to TVET	8.50	12.55
3. Output 3: Increased private sector involvement in TVET strategy and delivery	3.60	3.20
4. Output 4: Strengthened management and governance of the TVET system	0.90	1.55
5. Output 5: Effective project management and implementation	0.60	1.86
Subtotal (A)	22.60	27.31
B. Contingency		
1. Physical Contingency	0.90	0.00
2. Price Contingency	1.30	0.00
Subtotal (B)	2.20	0.00
Total	24.80	27.31

4. Project schedule

Item	Appraisal Estimate	Actual
Date of contract with consultant	30 June 2011	14 September 2011
Completion of engineering designs	30 June 2011	30 September 2011
Civil works contract: workshop and dormitory		
Date of award	30 June 2011	28 March 2012
Completion of work	30 September 2012	1 August 2014
Equipment and supplies		
Dates		
First procurement	30 June 2011	25 March 2013
Last procurement	30 September 2012	30 March 2016
Completion of equipment installation	30 September 2012	30 May 2016
Start of operations		
Completion of tests and commissioning		1 September 2014
Beginning of start-up		5 November 2014

5. Project performance report ratings

Implementation Period	Ratings	
	Development Objectives	Implementation Progress
From 1 September 2010 to 31 December 2010	Satisfactory	Satisfactory
From 1 January 2011 to 31 December 2011	Satisfactory	Satisfactory
	Single Project Rating	
From 1 January 2012 to 31 December 2016	On track	

D. Data on Asian Development Bank Missions

Name of Mission	Date	No. of Persons	No. of Person-Days	Specialization of Members
Project Fact-Finding Mission	19 April–5 May 2010	6	51	a, b, c, d, e, f
Project Inception Mission	16–17 December 2010	2	4	b, f
Grant Review Mission 1	17–21 August 2011	4	15	a, b, f, g
Grant Review Mission 2	21–24 November 2011	5	20	b, c, d, f, g
Grant Review Mission 3	14–22 June 2012	4	28	a, b, f, g
Grant Review Mission 4	18–24 November 2012	3	15	a, b, g
Grant Review Mission 5	13–21 June 2013	5	20	a, b, d, f, h
Midterm Review Mission	11–22 November 2013	5	40	a, b, c, d, g
Grant Review Mission 6	21 April–2 May 2014	4	10	f, g, d, j
Grant Review Mission 7	5–14 November 2014	4	28	a, f, g, i
Grant Review Mission 8	10–23 March 2015	3	26	a, f, g
Grant Review Mission 9	16–27 November 2015	2	16	f, g
Grant Review Mission 10	19–26 April 2016	3	15	d, f, g
Grant Review Mission 11	25 November–7 December 2016	2	16	f, g
Project completion review	9–22 November 2018	3	15	d, f, g

a = principal education specialist; b = education specialist; c = social development specialist; d = gender specialist; e = counsel; f = senior project officer; g = project analyst; h = director; i = gender officer; j = procurement consultant

I. PROJECT DESCRIPTION

1. The Government of the Lao People's Democratic Republic (Lao PDR), through its Seventh Five-Year National Socio-Economic Development Plan, 2011–2015 and its National Education System Reform Strategy, 2006–2015, emphasized the importance of human development and technical and vocational education and training (TVET) in sustaining long-term economic growth.¹ However, this growth has been constrained by capacity constraints and skills shortages attributed to several underlying factors, including (i) a misalignment between the skills required by the market and those produced by the TVET subsector, which in turn can be attributed to a shortage of teachers and a lack of teacher aids and practical skills; (ii) limited access to TVET for girls and students from rural areas and ethnic groups; (iii) limited private sector involvement in TVET; and (iv) the government's weak TVET sector governance and regulatory framework and management of TVET institutions. The project's expected impact was a more highly skilled and diverse workforce in the Lao PDR. The expected outcome was an accessible formal vocational training system that is more responsive to labor market needs. It had five outputs: (i) improved quality of TVET; (ii) increased and more equitable access to TVET; (iii) increased private sector involvement in TVET strategy and delivery; (iv) strengthened management and governance of the TVET system; and (v) effective project management and implementation.

II. DESIGN AND IMPLEMENTATION

A. Project Design and Formulation

2. The Strengthening Technical and Vocational Education and Training Project was aligned with the government's Seventh Five-Year National Socio-Economic Development Plan, 2011–2015, which sought to increase the number of qualified skilled workers, expand educational opportunities for students from rural areas, and improve access to and the quality of TVET to address skills shortages and mismatches.² The project was also aligned with the National Education System Reform Strategy, 2006–2015, which aimed to increase TVET enrollment and expand TVET across the country. The project was consistent with the Education and Sports Sector Development Plan, 2016–2020, which focused on improved quality of and access to TVET to meet the demands of the labor market.³ The project was also consistent with the government's TVET master plans of 2008–2015 (at design) and 2016–2020 (at completion), which emphasized strengthening the links between TVET institutions and the private sector.⁴ The project was aligned with the Asian Development Bank (ADB) country partnership strategy for the Lao PDR, 2012–2016, which prioritized, among others, human resource development and TVET as priority areas for investment; and with ADB's Gender Equality and Women's Empowerment Operational Plan for 2013–2020, particularly as it pertained to gender-inclusive TVET support.⁵ The project design

¹ Government of the Lao PDR, Ministry of Planning and Investment. 2011. *The Seventh Five-Year National Socio-Economic Development Plan, 2011–2015*. Vientiane; and Government of the Lao PDR, Ministry of Education. 2005. *National Education System Reform Strategy, 2006–2015*. Vientiane.

² ADB. 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Grant to the Lao People's Democratic Republic for the Strengthening Technical and Vocational Education and Training Project*. Manila.

³ Government of the Lao PDR, Ministry of Education and Sports. 2015. *Education and Sports Sector Development Plan, 2016–2020*. Vientiane.

⁴ Government of the Lao PDR, Ministry of Education. 2007. *Master Plan Development of TVET, 2008–2015*. Vientiane; and Government of the Lao PDR, Ministry of Education and Sports. 2016. *Technical and Vocational Education and Training Plan, 2016–2020*. Vientiane.

⁵ ADB. 2011. *Country Partnership Strategy: Lao People's Democratic Republic, 2012–2016*. Manila; and ADB. 2013. *Gender Equality and Women's Empowerment Operational Plan, 2013–2020: Moving the Agenda Forward in Asia and the Pacific*. Manila.

complemented interventions to support the Ministry of Education and Sports (MOES), as the executing agency, and TVET institutions to improve the relevance of TVET; improve the quality of teaching; and expand TVET opportunities for poor and ethnic families, particularly women.⁶

3. During project preparation, the MOES, through its Technical and Vocational Education and Training Department (TVED), consulted with public and private TVET institutions, the National Chamber of Commerce and Industry (NCCI), and private firms to emphasize competency-based training and voucher schemes in the project design. The project was designed to support seven public and four private TVET institutions to improve the quality of teaching and access.⁷ During project implementation, two private TVET institutions withdrew from the project because they offered only longer-term bachelor's degrees in business and management (voucher recipients preferred to enroll in shorter-term certificate programs) and lacked dormitories to accommodate voucher recipients from rural areas.⁸ However, their withdrawal did not affect the project's relevance and scope because all seven public TVET institutions offered courses in the needed skill areas.

B. Project Outputs

4. At project completion, of the 20 targets associated with the five outputs, 15 were achieved (including three substantially achieved and two that were achieved with delay), two were partly achieved, and three were not achieved. To increase enrollment and change the public's perception of TVET as being inferior to higher education, the project introduced social marketing campaigns that informed the public about available TVET courses, the quality of teaching and associated facilities, and potential employment opportunities available to TVET course graduates. As a result, overall TVET enrollment increased significantly, from 51,113 students in school year 2010–2011 to 63,969 in school year 2016–2017. The increase of private sector involvement in TVET was evident in the private sector's contributions to the development of skills standards and curricula. Overall, the five planned project outputs were substantially achieved. Project achievements are outlined in the design and monitoring framework (Appendix 1).⁹

1. Output 1: Improved Quality of Technical and Vocational Education and Training

5. **Development of priority skills programs.** A rapid labor market demand assessment conducted during project preparation identified high demand for labor and skills shortages in four priority skill areas: construction and building, furniture-making, mechanical and machinery maintenance and repair, and basic business. To respond to labor market needs, the project, together with trade working groups in the four priority skill areas, developed skills training programs which covered, among others, skills standards, competency-based training (CBT) curricula and modular training materials for 17 job qualifications.¹⁰ The MOES introduced three levels of short-term TVET certification programs—certificate level I (less than 6 months duration),

⁶ Development partners working in TVET included Deutsche Gesellschaft für Internationale Zusammenarbeit, the Swiss Agency for Development and Cooperation, and the Korean International Cooperation Agency.

⁷ The seven public institutions (out of 22 nationwide) were the Lao-German Technical College and the TVET institutions in Champasak, Dongkhamxang, Luang Prabang, Pakpasak, Savannakhet and Vientiane. The four private TVET institutions (out of 65 nationwide) were Saysombath Technical College, Vientiane Institute of Technology College, Vientiane Professional Development College, and Xieng Ngeun District Furniture Training Center. They were selected based on their emphasis of the four priority skill areas.

⁸ The two institutions that withdrew were Vientiane Professional Development College and Xieng Ngeun District Furniture Training Center. No formal change was made in the project design and monitoring framework to reflect their withdrawal.

⁹ The project achievements were measured based on the target of seven public and four private TVET institutions.

¹⁰ Competency-based training is an approach to teaching and learning which emphasizes concrete skills rather than abstract learning. The project developed 900 training modules for 17 job qualifications in the four priority skill areas.

certificate level II (1 year), and certificate level III (2 years)—and a diploma certificate program (3 years). Implementation of the CBT curricula at the seven public and two private TVET institutions was delayed by one year, awaiting finalization of all 900 modular teaching and learning materials. Finalization of the materials was delayed because of the lengthy recruitment of local writers caused by slow internal approval processes within the MOES. Since the existing workshops were outdated, the project built 6 new workshops at 5 public TVET institutes for hands-on training and one multi-purpose building at the Vocational Education Development Institute (VEDI) for training, workshops and conferences.

6. **Attainment of competency and teaching standards.** The project provided training on skills standards and the CBT approach to 490 out of 894 teachers of the participating project TVET institutions (55%, which matched the target), of which 262 (53%, against a target of 10%) were female. At project completion, more than 50% of the 490 teachers trained in CBT were already applying CBT in practice, thus spending less time on theory and more time on hands-on training. The TVED of the MOES now requires all public TVET institutions to apply the CBT approach in their teaching programs. Additional TVET projects financed by ADB, the Swiss Agency for Development and Cooperation, and the Luxemburg government have also adopted the CBT approach. The MOES selected 59 of the trained teachers (of which 18 were female) for in-country training to become master trainers, and thereafter to Singapore, to further enhance their pedagogical and management skills.

7. **Employers' satisfaction with skills and attitudes of graduates.** The project did not conduct an employment survey, as originally planned, because the Department of Higher Education carried out a similar survey during the third year of project implementation.¹¹ The survey report indicated that more than 55% of employers were satisfied with the skills of TVET and higher education graduates, although the survey found that improvement was needed in terms of their working attitudes and cognitive skills. Furthermore, TVET institutions' records indicated that all final-year students in the four priority skill areas secured internships with private enterprises. In total, 95% graduates in three of the four priority skill areas (construction and building, mechanical and machinery maintenance and repair, and furniture-making—considered as the three nontraditional priority skill areas) either found employment upon graduation or pursued further education, while the remaining 5% reported themselves as “self-employed.” Meanwhile, 60% of graduates in the basic-business skill area were employed, on average, within 6 months of graduating.

2. Output 2: Increased and More Equitable Access to Technical and Vocational Education and Training

8. **Enrollment in the priority skill areas.** The number of TVET students in the certificate and diploma programs in the four priority skill areas increased significantly, from 1,500 in school year 2010–2011 to 6,688 (against a target of 5,000) in school year 2016–2017, of which 3,197 (47%, against the target of 40%) were female. The TVET institutions reported that most students from rural areas were enrolled in certificate programs (levels I-III) rather than in 3-year diploma programs, usually because their families could not afford the 3-year programs.

9. **Provision of training assistance vouchers.** The project met its target of providing training assistance vouchers to students; however, implementation was delayed by one year because the time needed to prepare the implementation manual and conduct training to manage the voucher program took longer than expected. The voucher scheme included tuition fees, a subsistence allowance, and stationery and travel costs. The scheme provided opportunities for

¹¹ Ministry of Education and Sports. 2014. *Employer's Survey Report*. Vientiane.

high school students, particularly those from poor families and ethnic groups, to enroll in formal TVET training programs. At project completion, 5,040 students (against a target of 4,800) had received vouchers, of which 1,677 (33%, against a target of 25%) were female.¹² Half of the recipients came from poor families while 35% belonged to ethnic groups. School records indicate that 95% of the voucher recipients had completed their courses. Ongoing TVET projects financed by ADB, the Swiss Agency for Development and Cooperation, the Luxemburg government, and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) have subsequently adopted the voucher scheme. The project was not able to apply wage subsidies to employ female students, as envisaged during project design, because this would have required a legal framework and approval from both the Ministry of Labor and Social Welfare (MLSW) and the office of the Prime Minister. Obtaining these was beyond the authority of the MOES.

10. **Provision of dormitories.** To promote equitable access to technical and vocational education, the project constructed 11 student dormitories equipped with common kitchens to accommodate 2,200 students in the seven public TVET institutions, of which seven dormitories were reserved for 1,400 female students (against a target of 1,115). At project completion, more than half of the enrolled TVET students were from rural districts. The provision of dormitories contributed to a significant increase in female TVET enrollment, from 4,634 in school year 2010–2011 to 10,174 in school year 2016–2017. However, female enrollment in the three nontraditional skill areas remained low. Funds for maintaining the dormitories were sourced through registration fees and MOES' annual budget allocations provided to the TVET institutions starting in 2012. The project did not construct a dormitory at the VEDI as initially envisaged, since MOES opted to use the government budget to upgrade the existing dormitories.

11. **Enhanced access for students from poor families and the physically disabled.** To expand vocational education opportunities for poor families and the physically disabled, the project provided vouchers and dormitory facilities and conducted social marketing campaigns in rural and remote communities.¹³ As a result, 50% of voucher recipients came from poor families, and 35% of the recipients were from ethnic groups. The project did not achieve the target associated with physically disabled students because (i) the MOES did not have a policy or mechanism to support disabled students' enrollment in TVET institutions; (ii) teachers had no training or experience in supporting physically disabled students, and new teachers with the required skill sets were not available; and (iii) the TVET institutions lacked disabled-friendly equipment and facilities. At project completion, only eight disabled students had enrolled in the four priority skill areas (all in furniture-making).

3. Output 3: Increased Private Sector Involvement in Technical and Vocational Education and Training Strategy and Delivery

12. **Establishment of technical and vocational education and training advisory boards.** In 2011, the TVED and the National Training Council (NTC) helped the seven public TVET institutions establish advisory boards to guide management teams in preparing institutional development plans and improving teaching quality.¹⁴ Each advisory board comprised 12 members

¹² 90% of the voucher recipients were enrolled in certificate level III, while 10% were enrolled in certificate level II.

¹³ The project launched a social marketing campaign to improve the public's perception that TVET was inferior to higher education. The campaign emphasized TVET institutions' focus on developing skills in areas of high employment demand. The project hired a professional advertising firm to design the strategy, create career counseling manuals in conjunction with TVET institutions, and disseminate information on TVET courses and employment opportunities upon graduation through media channels, social networking, and training workshops.

¹⁴ The NTC was established in 2002 under the MOES to help create trade associations to develop training standards, frameworks, and courses. Its mandate is to pursue an active policy on the education–work relationship between TVED, TVET institutions and private sector. The NTC comprises 29 members and includes representatives of the public sector, the private sector, and grassroots organizations.

representing the trade working groups (TWGs) of the four priority skill areas, local governments, trade unions, and women and youth organizations, of which three members (25%, which matched the target) were female, and four (33%, against a target of 25%) were from the private sector. The advisory boards discussed the annual development plans of the TVET institutions to ensure that the training programs matched labor demands.

13. **Private sector satisfaction with the National Training Council.** The NTC comprised representatives of line ministries, the private sector, TWGs in the four priority skill areas, and the NCCI. From 2012, the TWGs, supported by the NTC, were actively involved in developing skills standards, improving the CBT approach and TVET qualifications, and providing support to define the responsibilities of the NTC permanent office. At project completion, all nine industry associations (including four originally involved industry associations and five newly-invited industry associations) expressed their satisfaction with the level of involvement of the NTC.

14. **Introduction of specialist skills-contracting program.** The program was delayed for one year to enable the TVED to discuss and reach agreement with private employers to implement the program. Although during the project midterm review MOES and ADB revised the target from 3,750 individuals trained to 1,500,¹⁵ at project completion only 776 teachers and final-year students (52%) attended the specialist skills-contracting training programs. Eleven of the 52 female teachers (21%, against a target of 20%) in the four priority skill areas received specialist skills-contracting program certificates, while only 596 of the 3,177 female students (19%, against a target of 40%) received certificates. Nevertheless, the program contributed to improving the participants' capacity to use teaching materials and equipment confidently and teachers' attitudes in teaching and learning approaches.

15. **Introduction of skills-contracting program.** The skills-contracting program was relatively new to the TVED, and it therefore took time for the TVED, the private sector, and the NCCI to identify the required skills and implement the program. As a part of the program, private enterprises delivered short-term training in selected skill areas that meet the demand for labor. At the project midterm review, the MOES and ADB adjusted the target for individuals trained from 3,040 to 2,000. However, at project completion, 3,999 individuals had been trained, of which 1,521 (38%, against a target of 50%) were female. About 58% percent of the trainees became entrepreneurs in agribusiness, while 42% obtained jobs in services, mechanical and electrical repair, and heavy machinery. The gender target was not achieved because prevailing cultural norms do not allow girls to attend the training in the city.

16. **Development of curricula in the four priority skill areas by trade working groups.** Representatives of the four TWGs were actively involved in developing curricula for the 17 job qualifications in the four priority skill areas to ensure that the curricula matched employers' needs. TWG participation in workshops and TWG reviews and comments on draft curricula were instrumental in ensuring that curricula aligned with employers' standards and needs. The four TWGs actively participated in developing TVET qualifications and identifying skills needed for employment.

17. **Enhanced contacts between technical and vocational education and training institutions and private enterprises.** The involvement of private enterprises' in developing curricula for the 17 job qualifications allowed the project TVET institutions (particularly the Champasak, Savannakhet, Vientiane, Lao-German, and Pakpasak institutes) to strengthen their relationship with the private sector. At project completion, public TVET institutions had signed 41

¹⁵ The revised target was derived from estimating the potential number of teacher and student applicants in the four priority skill areas. This proved to be unachievable, however, as only 3% of teachers in the three priority skill areas were female and only 8% of students were female.

memoranda of agreements against a baseline of 29 (an increase of 41%, against a target of 40%) with local and foreign private enterprises in construction and building, mechanical and machinery maintenance and repair, and electronic repair, which focused on collaboration on internship opportunities, skills improvement, and employment planning.

4. Output 4: Strengthened Governance and Management of the Technical and Vocational Education and Training System

18. **Introduction of flexible work arrangements.** The project supported the TVED to update the TVET law. The amendment, approved by the National Parliament Assembly in 2015, enabled teachers to operate under flexible work arrangements. The update allowed teachers to work with private employers for up to 6 hours per week after normal working hours as resource persons, on the condition that such activities did not compromise their core teaching responsibilities. At project completion, 30% of TVET teachers were able to undertake flexible work arrangements, against a target of 20%. This initiative allowed teachers to earn additional income while at the same time enhancing their work experience and establishing networks in the industry.

19. **Introduction of unit cost funding.** The MOES introduced a unit cost funding system in 2014. Provisions of this system included, among others, a requirement that all public TVET institutions apply a unit cost of \$19 per student per year to fund operation and maintenance expenditures and procurement of teaching and learning materials. The system also mandated that the government provide a stipend of \$35 per month to disadvantaged students from poor families and ethnic groups from remote areas.

20. **Assessment of management and leadership skills of technical and vocational education and training directors and managers.** The project strengthened the management capacity of TVET institutions through various training activities. A total of 31 TVET school directors, managers, and senior technical staff attended training activities on strategic planning and management, leadership, and monitoring and evaluation, and participated in study visits to build relationships with regional vocational institutions. The training activities provided participants with opportunities to develop networks with local and foreign enterprises, resulting in several memoranda of understanding being signed. The project also supported the VEDI to conduct a performance assessment of managers and directors of the project TVET institutions in mid-2015. Because it had limited time and capacity to analyze the data collected, the VEDI was unable to finalize the assessment by project completion. The VEDI will finalize the assessment under the ongoing Second Strengthening Technical and Vocational Education and Training Project.¹⁶

21. **Assessment of the labor market information system.** The project envisaged upgrading MOES' labor market information system (LMIS) to measure labor market demand and supply. Upon assessment of the existing LMIS facilities and staff, the MOES suggested that the project provide equipment, consultants, and training to improve the LMIS. At project completion, the LMIS was not yet functional because of a lack of information on labor market supply and demand, labor forecasts, and employment; and a shortage of qualified staff with the skills to manage LMIS. This activity is being implemented under a separate ADB technical assistance project to strengthen the capacity of the MOES and develop its employment service system.¹⁷

¹⁶ ADB. 2016. *Report and Recommendation of the President to the Board of Directors: Proposed Grant to the Lao People's Democratic Republic for the Second Strengthening Technical and Vocational Education and Training Project*. Manila.

¹⁷ ADB. 2016. *Technical Assistance to the Lao People's Democratic Republic for Strengthening Capacity to Develop the Employment Service System*. Manila.

22. **Capacity of the Technical and Vocational Education Department to produce technical and vocational education and training statistical reports.** The project supported the TVED in establishing a monitoring unit to manage the TVET education management information system (EMIS), which uploads TVET policies and directions, laws and regulations, enrollment and completion statistics, and financial management information. TVET statistics and information are now updated in May and November of each year and published on the websites and/or in the annual reports of TVET institutions and the MOES. The project also supported public TVET institutions to upgrade their education statistics to ensure that their systems are linked with the EMIS of the TVED.

5. Output 5: Effective Project Management and Implementation Facilitated

23. **Establishment of project steering and implementation units.** The MOES set up a project steering committee in the fourth quarter of 2010, co-chaired by the vice ministers of the MOES and the MLSW. The MOES also established a project management coordinating unit under the TVED to coordinate project activities, manage infrastructure design and construction, manage procurement, oversee financial management, and monitor results, as well as to ensure compliance with safeguards, gender, and other due diligence requirements. Annual meetings involving the MOES, the MLSW, the TVED and participating TVET institutions were held to discuss the overall direction of the project and prepare project action plans and budgets to reflect the needs of participating TVET institutions.

24. **Project monitoring and evaluation system.** The TVED's project monitoring and evaluation system was established in 2011 following an 8-month delay. The delay was caused by the TVED's need to integrate the system with its education information unit to ensure that project targets and achievements were reflected in the statistical database of the MOES. At project completion, the monitoring and evaluation system was fully operational. The TVED also appointed a gender focal person to implement the gender action plan and monitor the gender achievements. The TVED highlighted its achievements, key issues for consideration and recommendations for improvement in its semi-annual reports to the project steering committee.

C. Project Costs and Financing

25. During appraisal, the total project cost was estimated at \$24.8 million, including ADB grant financing of \$23.0 million (93%) and government counterpart contributions of \$1.8 million (7%). The actual project cost at completion was \$27.3 million (10% more than the appraisal estimate). The project utilized \$22.8 million of the ADB grant proceeds (99%) to support all components of the project except taxes, office expenses, and government staff salaries. The recipient counterpart funding was \$4.5 million equivalent, comprising \$2.8 million for increases in teachers' salaries and in-kind contributions for the rehabilitation of dormitories and land clearance, and \$1.76 million for taxes and duties. Counterpart funding thereby exceeded the original cost estimate of \$1.8 million. Reallocation of grant proceeds was done through minor changes in project scope, which included (i) adjusting the budget for the specialist skills-contracting program, which was underestimated during project design; (ii) provision of common kitchens for student dormitories; (iii) rehabilitation of dormitories' sanitation systems; and (iv) additional consultant inputs for the project extension period. Appendix 2 compares the project costs at appraisal with actual costs upon completion. Appendix 3 details project costs by financier.

D. Disbursements

26. Disbursement procedures followed ADB's *Loan Disbursement Handbook* (2007, as amended from time to time) using direct payment, commitment, and advance fund procedures. The project established an advance account at the Bank of Lao PDR and a separate project

account at Banque Pour Le Commerce Exterieur Lao. The advance account was replenished through statements of expenditures to pay for training and workshops, small civil works and goods, and operational costs. Several delays were encountered in liquidating advances amounting to \$1.0 million and replenishing advance payments for monitoring, training, and international visits in 2014 and 2015; the advance payments were eventually liquidated in 2016 and early 2017.

27. During the project midterm review, disbursement projections were revised to reflect delays in procuring equipment packages, liquidating training expenses, and implementing the voucher scheme and skills-contracting program. The annual audited project financial statements (i) contained unqualified auditor's opinions, except for the first 2 years of implementation when the MOES experienced delays in liquidating outstanding advance payments, (ii) stated that all transactions were properly recorded and reflected in the financial statements, (iii) stated that funds were used exclusively for their intended purposes, and (iv) verified that the project complied with financial covenants. At completion, the project disbursed 99% of the grant proceeds. The planned and actual disbursement figures are in Appendix 4.

E. Project Schedule

28. The original project physical completion date was 30 September 2015. The actual completion date was 30 June 2016. At the request of the government, ADB extended the grant closing date by 9 months, from March 2016 to December 2016, to complete the last batch of voucher payments, conclude the delayed skills-contracting program, and repair the dormitory sanitation systems. However, the actual financial closing was on 5 December 2017 because more time was needed for the final liquidation of funds and settlement of outstanding invoices. The planned and actual project implementation schedule is in Appendix 6.

F. Implementation Arrangements

29. The implementation arrangements agreed upon during project design remained relevant throughout project implementation. The MOES, as the executing agency, was responsible for providing overall project oversight. A project implementation unit under the TVED was responsible for coordinating project activities with line departments within the MOES and the project TVET institutions, and for implementing day-to-day project activities. A second project implementation unit under the Department of Skills Development and Employment of the MLSW was responsible for upgrading the labor market information system. To ensure smooth project implementation and build ownership of the project, the MOES established a focal point in each project TVET institution to monitor and report on implementation progress. This arrangement was useful in identifying and resolving issues that arose. Project implementation remained on track from the project's inception in 2011 until completion.

G. Technical Assistance

30. Project preparatory technical assistance of \$1.0 million was provided through the Japan Special Fund to prepare the overall design of the project. The project design remained unchanged at the time of preparation until project completion. During project preparation, four priority skill areas were selected based on a labor market assessment carried out in consultation with the private sector to ensure that the skill areas would reflect employers' needs. Consultations were also held with key development partners, including GIZ, Kreditanstalt Für Wiederaufbau Bankengruppe, and the Korean International Cooperation Agency to avoid any overlap between projects. The project preparatory technical assistance was instrumental in (i) assessing the critical issues constraining TVET performance; (ii) identifying lessons learned from international

experience in TVET reforms; (iii) addressing key constraints facing TVET development and identifying required reforms; and (iv) preparing the project design and monitoring framework and overall project design, including the economic, financial, and gender and social analyses.¹⁸

H. Consultant Recruitment and Procurement

31. All consultant recruitment followed ADB's Guidelines on the Use of Consultants (2007, as amended from time to time) and government guidelines. As envisaged, the MOES, using the quality- and cost-based selection method, recruited a consulting firm and a local advertising firm to support project implementation. Total consultants' inputs increased from the estimated 420 person-months at appraisal to 426 person-months upon project completion, comprising 148 person-months of international and 278 person-months of national consultant inputs. The recruitment of six local private training providers to deliver the skills-contracting program through the quality- and cost-based selection method was delayed because of the time required for project staff and trainers to be familiar with ADB's procurement guidelines and requirements. The project also encountered difficulties in finding 30 local writers to prepare learning materials because most applicants were not familiar with ADB's consultant recruitment process and requirements and failed to demonstrate proficiency in writing in English on their applications. The project also engaged eight individual contractors to support project administration. Overall, the consultants' performance was satisfactory.

32. Procurement followed ADB's Procurement Guidelines (2007, as amended from time to time) and followed the procurement plan prepared at fact-finding. National competitive bidding packages for construction of workshops, student dormitories, and kitchens were awarded as planned. Procurement of equipment through international bidding was delayed because the MOES took longer than expected to review the list of equipment to ensure compatibility with industry requirements and compliance with MOES' norms. All contractors completed the required civil works and delivery of procurement packages on time. The original contract award projections were adjusted to reflect the delays in implementing the voucher scheme, skills-contracting program, and procurement of equipment. Overall, the performance of contractors and suppliers was satisfactory. The planned and actual contract award figures are in Appendix 5.

I. Gender Equity

33. The project was categorized as *gender equity* as a theme. The gender action plan (GAP) aimed to ensure equal access for male and female students to TVET while providing skills training for young ethnic people. The GAP included 22 quantitative targets and 23 activities. At project completion, 17 of the 22 quantitative targets (77%) had been achieved while five targets had not been achieved. The targets that had not been achieved were (i) enrollment of girls in the three nontraditional priority areas (3%, against a target of 20%); (ii) female teacher participation in regional study visits (26%, against a target of 40%); (iii) the number of female facilitators supporting TWGs in the four priority skill areas (30%, against a target of 50%); (iv) the number of female students to be trained under specialist skills-contracting programs (21%, against a target of 20%) and skills-contracting programs (19%, against a target of 40%); and (v) recruitment of local gender specialist, which was not carried out because the TVED utilized its staff to perform this role with support from an international consultant. At project completion, 19 of the 23 GAP activities (83%) had been completed. The four activities that had not been completed were: (i) training on gender, TVET and corporate social responsibility to private employers (not implemented); (ii) establishment of recognition award to top female performing private employers;

¹⁸ ADB. 2009. *Lao People's Democratic Republic: Strengthening Technical Vocational Education and Training Project*, Project Data Sheet. Manila. <https://www.adb.org/projects/42278-012/main#project-pds>.

(iii) achievement of a critical mass of female students in the three priority skill areas; and (iv) preparation of a tracer study. TVET institutions used a monitoring system that included sex-disaggregated data to monitor GAP implementation. The project did not achieve one outcome indicator: i.e., enrollment of girls in the three nontraditional priority areas. However, as the achieved project quantitative targets and activities exceeded the criteria for successful GAP implementation (70% of quantitative targets achieved and 75% of activities completed), implementation of the GAP is rated *successful*. A summary of gender equality results and achievements is in Appendix 7.

J. Safeguards

34. **Environmental impacts.** The project was classified as category C for environment as per ADB's Safeguard Policy Statement (2009). It complied with national environmental management guidelines. Environmental impacts were minor and were largely confined to construction sites. Contractors adopted measures to control noise, dust, and waste. Site engineers and the project TVET institutions monitored environmental compliance and reported their findings to the project implementation units. The bidding documents for civil works included environmental requirements for the contractors.

35. **Resettlement impacts.** The project was classified as category C for involuntary resettlement. The project did not undertake land acquisition and had no resettlement impacts. The workshops and dormitories were constructed on existing sites of the TVET institutions.

36. **Indigenous peoples.** The project was categorized B for indigenous peoples. Disaggregated data on the ethnicity of TVET students was kept by the institutions but not by the MOES. The project did not adversely affect the ethnic population; on the contrary, it expanded ethnic students' access to TVET. The MOES provided teaching and learning materials and instruction in the Lao language across all education levels. Specific monitoring and assessment performance of ethnic group students was not done. However, the TVET institutions provided remedial classes to newly enrolled ethnic students and slow learning ethnic students to help them catch up with their peers. At project completion, 1,764 out of 5,040 voucher recipients (35%) were from those of the Lao PDR's main ethnic groups (Hmong, Yao, Khmou, Phouan, Taidam, Phouthay, Lue, and Katu); of those, 616 (37%) were female students. The project also reserved dormitory space for ethnic students who came from rural and remote communities, which directly contributed to the increased enrollment of ethnic students in TVET.

K. Monitoring and Reporting

37. The grant covenants were mostly complied with. None of the covenants were modified, suspended, or waived. Of the 21 covenants, 15 were fully complied with, 3 were complied with behind schedule, and 3 were partly complied with. The three covenants that were complied with behind schedule were (i) counterpart funds were released late, which affected the timely execution of some project activities; (ii) TVED's implementation of the voucher system required extra time because this was a new initiative for the TVET system; and (iii) establishment of the TVET education management information system (EMIS) was delayed by 8 months. These delays had caused adverse impacts on the project during the first year of implementation, although much improvement was observed from the second year onwards. The covenants that were partly complied with were (i) submission of the audited financial statements for the first year (2010) and the last 2 years (2016 and 2017) of the project were delayed; (ii) the upgrade of the existing LMIS fell short of expectations because the system was not functional at project completion (para. 21); and (iii) enrollment of female students in the nontraditional priority skill

areas was low. Implementation progress of the grant covenants was monitored regularly by the MOES and ADB through grant review missions.

38. Financial management was satisfactory. The TVED eventually submitted the financial statements for 2011 and combined financial statements for 2016 and 2017 to ADB, which were uploaded on the ADB website. The status of compliance with grant covenants is in Appendix 8.

III. EVALUATION OF PERFORMANCE

A. Relevance

39. The project design is rated *relevant*. It was aligned with government's Seventh Five-Year National Socio-Economic Development Plan, 2011–2015 and remains relevant with its Eighth Five-Year National Socio-Economic Development Plan, 2016–2020, which emphasizes skills development and employment in boosting the country's economic development.¹⁹ The project was consistent with ADB's Strategy 2020, particularly in addressing three of the five drivers of change: good governance and capacity development, knowledge solutions, and gender equity.²⁰ The project was also aligned with ADB's country partnership strategy for the Lao PDR, 2012–2016 and remains aligned with the country partnership strategy, 2017–2020.²¹

40. The project design sought to optimize TVET learning outcomes by combining theory with hands-on practical work and industry work experience to enhance skills and work attitudes. Subsequently, TVET graduates' readiness to enter the skilled workforce increased. The project design suggested providing vouchers and clean and safe dormitories to expand opportunities for students from poor families and ethnic groups, which in turn increased girls' access to skills training. At project midterm review, two output targets were revised to adjust the total number of beneficiaries in the four priority skill areas and adjust the costs of the training programs. The project design was relevant during project preparation and remained relevant during implementation and upon completion.

B. Effectiveness

41. The project is rated *less than effective* as it fell short of more than 20% of targets in the design and monitoring framework. Two of three outcome targets were achieved while one outcome target was not achieved. Of the 20 output targets, 15 were achieved (75%), two were partly achieved (10%), and three were not achieved (15%). The expected outcome on girls' enrollment in the three nontraditional skill areas was not achieved, with only four out of 2,218 (0.18%) of students enrolled in school year 2010–2011 were female. Female enrollment in the three nontraditional skill areas slightly increased from 4 to 80 (out of 3,197 total student enrollment, or 2.5%) in school year 2016–2017. The extremely low enrollment rate at the onset and the influence of the socio-cultural factors significantly constrained the enrollment of female students in the three nontraditional skill areas.

42. Despite the withdrawal of two private TVET institutions, the project achieved 15 out of 20 output targets within the project scope and budget. Furthermore, MOES was able to apply the skills standards and competency-based training curricula and modular training programs developed under the project to all the TVET institutions across the country.

¹⁹ Government of the Lao PDR, Ministry of Planning and Investment. 2016. *The Eighth Five-Year National Socio-Economic Development Plan, 2016–2020*. Vientiane.

²⁰ ADB. 2008. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank, 2008–2020*. Manila.

²¹ ADB. 2017. *Country Partnership Strategy: Lao People's Democratic Republic, 2017–2020*. Manila.

C. Efficiency

43. The project is rated *efficient* in achieving outcomes and outputs. At completion, the project's overall economic internal rate of return (EIRR) was estimated at 12.5%, against 15.2% during appraisal. The difference is attributable to a lower-than-expected increase in the wage rates of the graduates and lower enrollment numbers at project completion. Sensitivity analysis undertaken at project completion emphasized that the EIRR estimate is sensitive to changes in enrollment. However, the trend strongly suggests that student enrollment has increased during the project implementation period and is expected to increase beyond school year 2016–2017 (Appendix 9).

44. Being the first ADB project implemented by the TVED, it faced a steep learning curve during implementation, particularly in complying with ADB guidelines and procedures on procurement and contract management, financial management, safeguards, reporting requirements, etc. Despite the limited institutional capacity of the TVED and the project TVET institutions, they took full ownership of the project and diligently implemented the project activities. Procurement of works, goods, and consulting services, as well as delivery of the key outputs, were implemented within the allocated time and budget. However, a 6-month extension of the project completion date was needed to successfully complete project activities.

D. Sustainability

45. The project is rated *likely sustainable*. The project investments in construction and building and mechanical and machinery maintenance and repair will remain relevant to the country's economic development for at least 10 years beyond project completion. Demand for jobs in these areas remains high both domestically and in neighboring countries, which has strengthened government's emphasis on producing quality TVET graduates.²² With a cap on university enrollment, TVET provides high school graduates with a second-best option. The potential to scale up the following activities introduced under the project is huge: enhancing links between the private sector and TVET institutions through the CBT approach; internship programs; continued voucher schemes and/or stipend programs; targeted social marketing campaigns; career guidance and counselling; and enhancing TVET teachers' skills and knowledge.

46. Given the country's political stability and healthy economy, with an average of 7% gross domestic product growth per year since 2010, it is expected that the labor demand will continue to increase, and along with it, continued government support for TVET as priority subsector for investment. It is also worth noting that institutional, technical, and managerial capacity in secondary education have significantly increased, thereby improving the quality of graduates entering TVET institutes. School development plans include targets, time frames, and budgets that can be monitored on a quarterly basis. Public TVET institutions allocate 25% of the income from registration fee, 5% of the government budget, and school fund raising for school annual operational cost. The annual operational cost increased from 15% of the total school budget in school year 2012/2013 to 25% in school year 2016/2017.

E. Development Impact

47. The project's development impact is rated *satisfactory*. The project helped increase the number of workers (aged 15 or older) with formal qualifications from 332,815 in 2011 to 401,689

²² This is reflected in the Lao government's endorsement of the National Education System Reform Strategy 2006–2015, which focuses on producing quality TVET graduates to meet the demands of the labor market.

in 2017 (increased by 22%).²³ The project contributed to improving the quality of TVET by improving TVET institutions. Overall, project support has been instrumental in increasing enrollment in TVET, particularly for students from poor families and ethnic groups and females. The project contributed to: (i) an increase in wages—workers with no TVET education earn an average of \$130 per month, while those with TVET qualifications earn about \$200 per month; (ii) institutional development, as reflected in TVET institutions' improved ability to link up with private employers; (iii) an improved teaching and learning environment at TVET institutions; and (iv) greater employability of TVET graduates. The ongoing Second Technical and Vocational Education and Training Project (footnote 18) is expected to build on these achievements.

48. The project's contribution to strengthening institutional capacity includes the development of skills standards for 17 job qualifications and the introduction of the CBT approach to education and training in the selected TVET institutions. The project also contributed to improved leadership and management skills for directors at the TVED and TVET institutions through (i) training; (ii) exchange visits to other institutions in the region; and (iii) strengthened communication skills of senior teachers and strengthened ability of senior teachers to work with private enterprises. Teachers were able to access updated teaching content on the project website. The project regularly provided teachers with teaching materials relevant to prevailing labor market conditions.

49. The project has contributed to gradually changing the public's perception toward TVET. In the past, TVET was considered second-tier compared with higher education. The project demonstrated that TVET graduates are employable and/or can create self-employment opportunities. The project expanded TVET opportunities for female students—particularly for ethnic females—by providing short-term skills training, assistance vouchers, and accommodation. One-third of voucher recipients were female and 50% of voucher recipients came from poor families. TVET qualification allows them to secure better jobs, thus contributing to increasing their families' income.²⁴ On a broader level this leads increased formal sector employment and reduced poverty in the Lao PDR.

F. Performance of the Recipient and the Executing Agency

50. The performance of the Ministry of Finance, as the recipient, and the MOES, as the executing agency, is rated *satisfactory*. Institutional, legal, and reporting covenants were substantially complied with. The TVED and the project institutions, as the implementing agencies, appointed counterpart staff to supervise and manage the project and appointed technical staff to work closely with the consultants. The TVED submitted the audited project financial statements for the first 2 fiscal years late because of delays in liquidating advance payments, which took up to 11 months. The TVED eventually enhanced its financial management capacity and submitted its audited project financial statements on time from 2014 until the end of the project. Since skills development is a government priority, the MOES scaled up the stipend and skills-contracting programs introduced under the project since 2014.

G. Performance of the Asian Development Bank

51. ADB's performance is rated *satisfactory*. Together with the executing agency and implementation agencies, ADB conducted 10 project review missions, one midterm review

²³ Calculated based on figures estimated from the Ministry of Planning and Investment. 2018. Lao PDR Labor Force Survey 2017. Survey Finding Report. Vientiane, Lao PDR (Tables 6.7 and 26).

²⁴ Public TVET institutions' records indicate that students in construction and building and mechanical and machinery maintenance and repair are readily offered employment by private enterprises upon graduation. Graduates from furniture-making programs prefer to be self-employed or go back to their communities to engage in the family business. Meanwhile, 60% of graduates in basic business are offered employment within 6 months of graduation.

mission, and a completion review mission. During the review missions ADB staff provided support TVED in procurement and financial management and other technical support. All relevant ADB guidelines were disseminated in a satisfactory and timely manner. ADB was responsive to the executing agency's requests and worked closely with government counterparts and consultants to review and approve minor changes in scope and procurement documents, and to conduct other project administration tasks. ADB's monitoring helped ensure that gender issues were addressed. However, closer involvement of gender specialist would have helped to achieve the gender outcome target. The grant administration was effectively delegated from the Human and Social Development Division of ADB's Southeast Asia Regional Department to the Lao PDR Resident Mission in January 2014, with sufficient technical support to ensure smooth project implementation. The MOES and the TVED greatly appreciated the timely support and close collaboration of the Lao PDR Resident Mission during project implementation.

H. Overall Assessment

52. Overall, the project is rated *successful*. This assessment, based on performance ratings, finds the project *relevant, less than effective, efficient, and likely sustainable*. Its focus on expanding access and improving the quality of TVET was relevant to the needs of the country's development and labor market demands. The project outputs were implemented as originally designed with minor adjustments during the project midterm review to respond to the local capacity and the need to adjust unit costs for training. Most of the project's outputs and activities were completed within the allocated project budget and the impacts are likely to be sustained. The government has continued make strides to improve the quality and the relevance of TVET to catch up with the rapidly changing labor market.

Overall Ratings

Criteria	Rating
Relevance	Relevant
Effectiveness	Less than effective
Efficiency	Efficient
Sustainability	Likely sustainable
Overall Assessment	Successful
Development impact	Satisfactory
Recipient and executing agency	Satisfactory
Performance of ADB	Satisfactory

Source: Asian Development Bank.

IV. ISSUES, LESSONS, AND RECOMMENDATIONS

A. Issues and Lessons

53. **Increased TVET enrollment.** The project contributed to a significant increase of TVET enrollment, including female students. This was achieved through social marketing campaigns and activities to change public perception and promote TVET, provision of voucher grants, and dormitories for students, particularly those from rural and ethnic communities. However, cultural norms and beliefs keep female enrollment low in the three nontraditional skill areas.

54. **Introduction of competency-based training and modular training program.** The project adopted the CBT approach and modular training program. Those methodologies use hands-on practice rather than abstract learning, help students to obtain jobs in the formal sector, and enable others to become self-employed. The project, through the CBT, expanded

opportunities for young students, particularly in underserved areas and access to skill training programs offering official certification corresponding to their education level and financial capacity. As a result, the CBT approach has been adopted in several projects funded by bilateral donors and scaled-up in ADB's ongoing TVET project (footnote 16).

55. **Cooperation with private sector.** The project collaborated with four trade TWGs in developing skill standards and curriculum to meet with labor market demand and employers' needs. The project also enhanced the TVET institutions' capacity to work with private enterprises. Over 40 memoranda of agreements were signed in areas of skills training and internships. There is a potential for greater private sector involvement. However, meeting the demands of private sector remains a challenge due to lack of labor market demand and supply information and rapid changing of labor demands in the country and the region.

56. **Setting output and outcome targets.** Several project targets, including gender outcome and output targets were unrealistic because they did not consider prevailing cultural norms and insufficient information for students and parents on employment opportunities. The project boosted female student enrollment through the voucher scheme, social marketing campaigns and the provision of dormitories. However, female enrollment remained low in the three nontraditional skill areas.

B. Recommendations

57. **Social marketing program.** To increase TVET female enrollment in the nontraditional skill areas, future projects should invest more in social marketing programs aimed at changing public perception that TVET training is less appropriate for female students than higher education training. The social marketing program should be oriented to meet the demands of target beneficiaries.

58. **Upscaling CBT and modular training approach.** Based on the encouraging results achieved through the CBT approach and modular training, those approaches should be applied and improved in future TVET projects.

59. **Enhancing cooperation with private sector.** Future projects should put more emphasis on strengthening TVET institutions capacity to meet future labor market demands by communicating effectively with the private sector.

60. **Gender.** Future projects should set realistic gender targets through an in-depth gender assessment and baseline information collection. Gender targets and indicators should consider cultural norms and public perceptions which influence the targets achievement. Gender activities and targets should be thoroughly discussed with the concerned ministry and TVET institutions to ensure that these are achieved upon project completion.

61. **Procurement.** As procurement proved critical during various stages of project implementation, it is imperative that project procurement committee members and technical staff are trained in procurement procedures early during project start-up. EA should undertake advance actions to swiftly recruit project implementation consultants, and award civil works contracts in an early stage.

62. **Timing of the project performance evaluation report.** A project performance evaluation report should be prepared by June 2021 to feed in the education sector assessment of the upcoming country partnership strategy.

DESIGN AND MONITORING FRAMEWORK

Design and monitoring framework at appraisal, midterm, and completion

Design Summary	Performance Targets/Indicators at Appraisal	Revised Performance Target at Midterm ¹	Achievement at Completion
<p>Impact</p> <p>A more highly skilled and diverse workforce in the Lao PDR</p>	<p>The number for workers in the labor force with formal TVET qualifications increases by 25% (50% for females) from 2011 to 2021</p>	No change	<p>Substantially achieved. The number of workers in the labor force with formal TVET qualifications increased from 332,815 in 2011 to 401,689 in 2017 (22%). During the same period, the proportion of female TVET student graduates increased from 35% to 44%.² Assuming that the current trend will continue whereby 14,000 TVET graduates per year will enter the labor force, the target set for 2021 will be achieved.</p>
<p>Outcome</p> <p>An accessible formal vocational training system that is more responsive to labor market needs</p>	<p>By 2015, 65% of TVET graduates in the four priority skill areas from the seven public and four private TVET institutions find initial employment within 6 months of graduation (baseline to be determined through baseline studies)</p> <p>Girls' enrollment is in three nontraditional priority skill areas increases from 0% to 20% by 2015</p>	No change	<p>Achieved. The public and private TVET institutions records indicate that 95% of TVET graduates in mechanical and machinery maintenance and repair, construction and building and furniture-making programs were employed upon their graduation, while 65% of graduates in basic business obtained jobs within six months.</p> <p>Not achieved. Total girls' enrollment in three nontraditional priority skill areas remained low, only slightly increasing from 4 students (0%) in school year 2011-2012 to 80 students (3% against a target of 20%) in school year 2016-2017. Because of (i) demanding physical nature of the work compared with other jobs such as service and hospitality, tailoring, and hair dressing; (ii) lack of employment information; (iii) cultural norms; and (iv) parents' reluctance to send their girls for nontraditional skills training.</p> <p>This indicate that changes in attitude and cultural perceptions require time; low pay and lack of employment information were considered as challenges.</p>

¹ ADB conducted a project midterm review in November 2013.

² Calculation based on figures estimated from the Ministry of Planning and Investment. 2018. Lao PDR Labor Force Survey 2017. Survey Finding Report. Vientiane, Lao PDR (Tables 6.7 and 26).

Design Summary	Performance Targets/Indicators at Appraisal	Revised Performance Target at Midterm ¹	Achievement at Completion
	20% of vouchers are reserved for ethnic groups by 2015	No change	Achieved. 35% of the total voucher recipients were ethnic groups from rural areas, and 33% of recipients were female.
1. Improved quality of TVET	<p>All programs in four priority skill areas at the seven public and four private TVET institutions are developed collaboratively with TWGs by 2012.</p> <p>By the end of 2011, 55% of teachers at the seven public and four private TVET institutions attain competency and teaching standards developed under the project.</p> <p>The proportion of employers expressing satisfaction with skills and attitudes of graduates in four priority skill areas in seven public and four private TVET institutions increases from 17% in 2011 to 35% in 2015.</p>	<p>No change</p> <p>No change</p> <p>No change</p>	<p>Achieved. Representatives of four TWGs actively participated in developing skills standards, 17 job qualifications and curriculum skill programs for the four priority skill areas with high labor demand. Two private institutions dropped during project implementation, but it did not have reverse impact on the project because they only offered one priority skill area, business.</p> <p>Substantially achieved. CBT and teaching standards developed and implemented. 490 out of 894 (55%) teachers in the seven public and two private TVET institutions participated in training on skills standards, CBT approach and pedagogical methods, of which 262 were female. A large portion of participants have sufficient skills and are confident to implement the competency standards. Teachers in the two private institutions that dropped did not receive training on competency standards.</p> <p>Substantially achieved. The Department of Higher Education report indicated that 55% employers were satisfied with technical skills and attitudes but less on cognitive skills, for both higher education and TVET graduates.</p>
2. Increased and more equitable access to TVET	<p>The number of students in certificate and diploma programs in the four priority skill areas at the seven public and four private TVET institutions increase from 1,500 in 2011 to 5,000 in 2015.</p> <p>At least 25% of voucher recipients are female by 2015.</p>	<p>No change</p> <p>No change</p>	<p>Achieved. Total number of students in certificate and diploma programs in the priority skill areas at the seven public and two private TVET institutions increased from 1,500 in school year 2010-2011 to 6,688 in school year 2016-2017, of which 3,197 were female.</p> <p>Achieved with delay. Out of 5,040 students received vouchers, 1,677 (33%) were female. In addition, 1,764 out of 5,040 (35%) voucher recipients came from ethnic groups, of which 616</p>

Design Summary	Performance Targets/Indicators at Appraisal	Revised Performance Target at Midterm ¹	Achievement at Completion
	<p>Number of dormitory places available to females increases from 530 in 2010 to 1,115 in 2015.</p> <p>20% of students will be from the poorest groups and 2% from the physically disabled.</p>	<p>No change</p> <p>No change</p>	<p>(37%) were female. 95% of the voucher recipients had completed their courses.</p> <p>Achieved. The project constructed 11 dormitories to accommodate 2,200 students rather than renovating the existing dormitories, which were not in good condition. Seven out of 11 dormitories were reserved for 1,400 female students.</p> <p>Partly achieved. 2,520 (50%) of voucher recipients were poor groups, of which 1,764 students were ethnic groups. The target of 2% for the physically disabled was not met due to lack of (i) policy and mechanisms to support disabled students, (ii) teachers with experience to support physically disabled students, and (iii) disability-friendly facilities. Only eight physically disabled students enrolled in TVET training. All voucher recipients were disadvantaged students which included poor groups, disabled students and ethnic groups</p>
<p>3. Increased private sector involvement in TVET strategy and delivery</p>	<p>Advisory boards established at the seven public TVET institutions, with at least 25% private sector and 25% female representation by 2013.</p> <p>100% of private sector industry associations express increased satisfaction with level of private involvement in NTC by 2015.</p> <p>By 2015, 3,750 individuals trained under the specialist skills-contracting program; at least 20% of teachers and 40% of students are female.</p> <p>By 2015, 3,040 individuals are trained under the skills-</p>	<p>No change</p> <p>No change</p> <p>1,500 individuals trained</p> <p>2,000 individuals trained</p>	<p>Achieved. Advisory boards for seven public TVET institutions were established in 2011. 25% of board members were female and 33% came from private sector.</p> <p>Achieved. NTC comprised representatives of line ministries, the private sector, nine industry associations and NCCI. All nine industry associations (four originally involved and 5 industry associations that newly established) expressed satisfaction with the level of involvement in NTC in 2014.</p> <p>Not achieved. Only 766 individuals received specialist skills-contracting program delivered by industries in Lao PDR and Thailand. Although the target was adjusted to reflect the training cost it remained ambitious. Gender targets were not achieved whereby: (i) 11 out of 52 female teachers (21%, against a target of 20%) and (ii) 596 out of 3,177 female students (19% against a target of 40%) attended the specialist skills - contracting program.</p> <p>Partly achieved (with delay). A total of 3,999 individuals were trained in 10</p>

Design Summary	Performance Targets/Indicators at Appraisal	Revised Performance Target at Midterm ¹	Achievement at Completion
	<p>contracting program; at least 50% female</p> <p>Curricula in four priority skill areas developed through TWGs by 2012.</p> <p>Proportion of surveyed employers reporting contact with the seven public and four private TVET institutions in four priority skill areas increases from 17% in 2011 to 40% in 2015.</p>	<p>No change</p> <p>No change</p>	<p>areas identified by private enterprises, NCCI and TVET institutions, of which 1,512 (38%) were female. The project and NCCI took longer time to identify training areas. The project conducted social marketing campaigns to promote female participation in the programs, but the ratio of female trainees remained low.</p> <p>Achieved. The project involved representatives of four TWGs in developing skills standards and curricula for 17 job qualifications under the four priority skill areas.</p> <p>Substantially achieved. Public TVET institutions signed 41 (42% against a target of 40%) memoranda of agreement with private enterprises which focused on collaboration on internship programs, needed skills and employment plans. Champasak, Savannakhet, Vientiane, Lao-German and Pakpasak institutes have improved their cooperation with the private sector, as reflected in the increased number of MOUs signed.</p>
<p>4. Strengthened governance and management of the TVET system</p>	<p>20% of teachers operating under more flexible work arrangements by 2015.</p> <p>Unit-cost funding system introduced by 2014.</p> <p>Directors and senior managers at the seven public and four private TVET institutions receive favorable ratings in independent management and leadership skills assessments by 2015.</p>	<p>No change</p> <p>No change</p> <p>No change</p>	<p>Achieved. 30% of TVET teachers undertook flexible work arrangements. Teachers are allowed to work with private employers up to 6 hours per week after normal working hours as resource persons, on the condition that such activities did not compromise their core teaching responsibilities.</p> <p>Achieved. The MOES introduced the unit-cost funding system for TVET, which was implemented since 2014. all public TVET institutions apply a unit cost of \$19 per student per year to fund operation and maintenance expenditures and procurement of teaching and learning materials</p> <p>Not achieved. The project also supported the VEDI to conduct a performance assessment of managers and directors of the project TVET institutions in mid-2015. Because it had limited time and capacity to analyze the data collected, the VEDI was unable to finalize the assessment by project completion.</p>

Design Summary	Performance Targets/Indicators at Appraisal	Revised Performance Target at Midterm ¹	Achievement at Completion
	<p>Favorable independent assessment of LMIS by 2012</p> <p>By 2013, TVED can produce TVET statistical report within six months of year end.</p>	<p>No change</p> <p>No change</p>	<p>Not achieved. The project assessed the existing LMIS facilities and staff, the MOES suggested that the project provide equipment, consultants, and training to improve the LMIS. At project completion, the LMIS was not yet functional because of a lack of information on labor market demand and supply, labor forecasts, and employment statistics.</p> <p>Achieved. The TVED's project monitoring and evaluation system was established in 2011 following an 8-month delay. TVED's need to integrate the system with its education information unit to ensure that project targets and achievements were reflected in the statistical database of the MOES. At project completion, the monitoring and evaluation system was fully operational. TVET statistics and information are updated and published in the TVET's and MOES annual reports and posted on project and MOES websites 2013.</p>
5. Effective project management and implementation	<p>Project steering committee and project implementation units equipped by Q4 2010.</p> <p>PM&E system functional by Q4 2010.</p>	<p>No change</p> <p>No change</p>	<p>Achieved. The PSC and project implementation units were established in Q4 2010. Project committee members met annually to discuss project progress, and policy direction to improve the TVET quality throughout project implementation.</p> <p>Achieved with delay. Project monitoring and evaluation system was established in 2011, which links with PM&E systems of seven public TVET institutions. Project achievements and activities are regularly posted on the project websites.</p>

ADB = Asian Development Bank, CBT = competency-based training, EMIS = education management information system, LMIS = labor market information system, MOES = Ministry of Education and Sports, NCCI = National Chamber of Commerce and Industry, NTC = National Training Council, PM&E = project monitoring and evaluation, PSC = project steering committee; TVED = Technical and Vocational Education Department, TVET = technical and vocational education and training, TWG = trade working group, VEDI = Vocational Education Development Institute.
Source: Asian Development Bank.

PROJECT COST AT APPRAISAL AND ACTUAL
(\$ million)

Item	Appraisal Estimate ^a			Actual		
	Foreign Exchange	Local Currency	Total Cost	Foreign Exchange	Local Currency	Total Cost
A. Investment Costs						
1. Civil Works	2.37	1.90	4.27	3.22	1.73	4.95
2. Consultant Services						
a. International	2.96	0.00	2.96	2.65	0.30	2.95
b. National	0.00	1.18	1.18	0.00	1.54	1.54
3. Contracted Services	0.32	2.68	3.00	0.38	2.16	2.54
4. Furniture, Equipment, Vehicles	3.98	1.25	5.23	3.71	0.65	4.36
5. Studies, M & E, Social Marketing	0.00	0.52	0.52	0.00	0.30	0.30
6. Teaching & Learning Materials	0.00	0.06	0.06	0.00	0.58	0.58
7. HRD, Training, Workshops, Study Tours	0.12	0.28	0.40	0.19	1.06	1.25
8. Vouchers	0.00	4.87	4.87	0.00	4.00	4.00
9. Taxes and Duties	0.00	0.00	0.00	0.00	1.76	1.76
Subtotal (A)	9.75	12.74	22.49	10.15	14.08	24.23
B. Recurrent Costs						
1. Salaries ^b	0.00	0.07	0.07	0.00	0.92	0.92
2. Accommodation ^b	0.00	0.00	0.00	0.00	0.90	0.90
3. Project Management	0.00	0.51	0.51	0.00	0.31	0.31
4. Operation and Maintenance ^b	0.00	0.00	0.00	0.00	0.95	0.95
Subtotal (B)	0.00	0.58	0.58	0.00	3.08	3.08
C. Contingencies						
1. Physical	0.00	0.80	0.80	0.00	0.00	0.00
2. Price	0.00	0.93	0.93	0.00	0.00	0.00
Subtotal (C)	0.00	1.73	1.73	0.00	0.00	0.00
Total (A+B+C)	9.75	15.05	24.80	10.15	17.16	27.31

Source: Asian Development Bank estimates

^a Base costs were as of June 2010

^b In-kind contributions included salaries and accommodations

PROJECT COST BY FINANCIER

Table A3.1: Project Cost at Appraisal by Financier
(\$ million)

Item	ADB		Government		Total Cost	
	Amount	% of Cost Category	Amount	% of Cost Category	Amount	Taxes and Duties
A. Investment Costs						
1. Civil works	4.27	89.9	0.48	10.0	4.75	0.48
2. Consultant Services						
a. International firm	2.96	100.0	0.00	0.0	2.96	0.00
b. National consultants	1.17	90.0	0.13	9.9	1.30	0.13
3. Contracted Services	3.01	90.1	0.33	10.0	3.34	0.33
4. Furniture, Equipment, Vehicles	5.20	90.1	0.57	9.9	5.77	0.57
5. Studies, M & E, Social Marketing	0.52	91.2	0.05	10.0	0.57	0.05
6. Teaching and Learning Materials	0.07	90.9	0.007	9.8	0.08	0.007
7. HRD, Training, Workshops, Study Tours	0.41	90.1	0.04	8.2	0.45	0.04
8. Vouchers	4.88	100.0	0.00	0.0	4.88	0.00
Subtotal (A)	22.49	93.3	1.61	7.0	24.10	1.61
B. Recurrent Costs						
9. Salaries ^a	0.00	0.0	0.00	0.0	0.00	0.00
10. Accommodation ^a	0.00	0.0	0.00	0.0	0.00	0.00
11. Project Management	0.51	82.3	0.11	8.2	0.62	0.11
12. Operation and Maintenance	0.00	0.0	0.00	0.0	0.00	0.00
Subtotal (B)	0.51	82.3	0.11	17.7	0.62	0.11
Total Base Cost (A+B)	23.00	93.0	1.72	7.0	24.72	1.72
C. Contingencies						
13. Physical	0.00	0.0	0.08	100.0	0.08	0.08
14. Price	0.00	0.0	0.00	0.0	0.00	0.00
15. Unallocated	0.00	0.0	0.00	0.0	0.00	0.00
D. Financial Charges During Implementation	0.00	0.0	0.00	0.0	0.00	0.00
Total Project Cost (A+B+C+D)	23.00	92.8	1.80	7.2	24.80	1.80

Source: Asian Development Bank estimates

^a in-kind contributions included salaries and accommodations

Table A3.2: Project Cost at Completion by Financier
(\$ million)

Item	ADB		Government		Total Cost	
	Amount	% of Cost Category	Amount	% of Cost Category	Amount	Taxes and Duties
A. Investment Costs						
1. Civil works	4.95	89.3	0.59	10.7	5.54	0.59
2. Consultant Services						
a. International firm	2.95	100.0	0.00	0.0	2.95	0.00
b. National consultants	1.54	89.3	0.18	10.7	1.72	0.18
3. Contracted Services	2.54	89.3	0.30	10.7	2.84	0.30
4. Furniture, Equipment, Vehicles	4.36	89.3	0.52	10.7	4.88	0.52
5. Studies, M & E, Social Marketing	0.30	90.9	0.04	9.1	0.34	0.04
6. Teaching and Learning Materials	0.58	100.0	0.00	0.0	0.58	0.00
7. HRD, Training, Workshops, Study Tours	1.25	90.9	0.13	9.1	1.38	0.13
8. Vouchers	4.00	100.0	0.00	0.0	4.00	0.00
Subtotal (A)	22.47	92.7	1.76	7.3	24.23	1.76
B. Recurrent Costs						
9. Salaries ^a	0.00	0.0	0.92	100.0	0.92	0.00
10. Accommodation ^a	0.00	0.0	0.90	100.0	0.90	0.00
11. Project Management	0.31	100.0	0.00	0.0	0.31	0.00
12. Operation and Maintenance ^a	0.00	0.0	0.95	100.0	0.95	0.00
Subtotal (B)	0.31	10.0	2.77	90.0	3.08	0.00
Total Base Cost (A+B)	22.78	83.4	4.53	16.6	27.31	1.76
C. Contingencies						
13. Physical	0.00	0.00	0.00	0.0	0.00	0.00
14. Price	0.00	0.00	0.00	0.0	0.00	0.00
15. Unallocated	0.00	0.00	0.00	0.0	0.00	0.00
D. Financial Charges During Implementation	0.00	0.00	0.00	0.00	0.00	0.0
Total Project Cost (A+B+C+D)	22.78	83.4	4.53	16.6	27.31	1.76

Source: Asian Development Bank estimate

^a In-kind contributions included salaries and accommodations

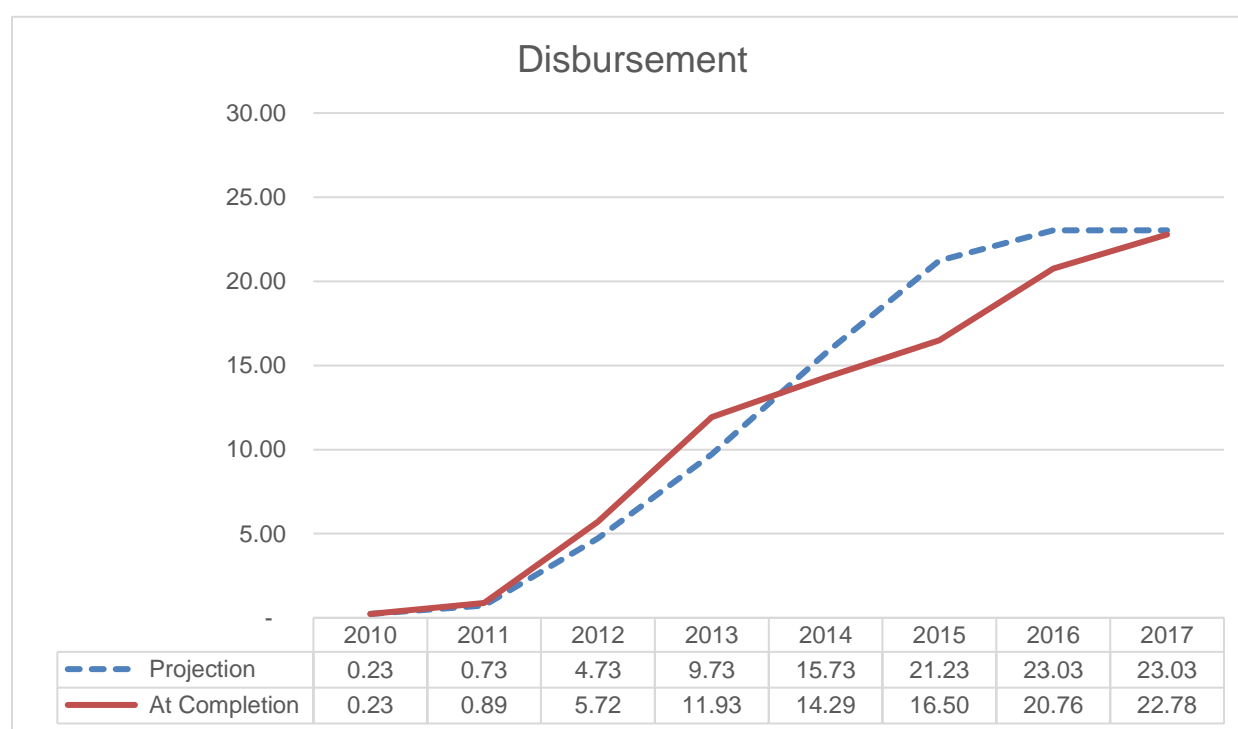
DISBURSEMENT OF ADB GRANT PROCEEDS

Table 4.1: Annual and Cumulative Disbursement of ADB Grant Proceeds
(\$ million)

Year	Annual Disbursement		Cumulative Disbursement	
	Amount	% of Total	Amount	% of Total
2010	0.23	1.00	0.23	1.01
2011	0.66	2.90	0.89	3.90
2012	4.83	21.20	5.72	25.11
2013	6.21	27.27	11.93	52.37
2014	2.36	10.36	14.29	62.73
2015	2.21	9.70	16.50	72.43
2016	4.26	18.70	20.76	71.13
2017	2.02	8.87	22.78	100.00
Total	22.78	100.00	22.78	100.00

ADB = Asian Development Bank.
Source: Asian Development Bank.

Figure 4.1: Projection and Cumulative Disbursement of ADB Grant Proceeds
(\$ million)



Source: Asian Development Bank.

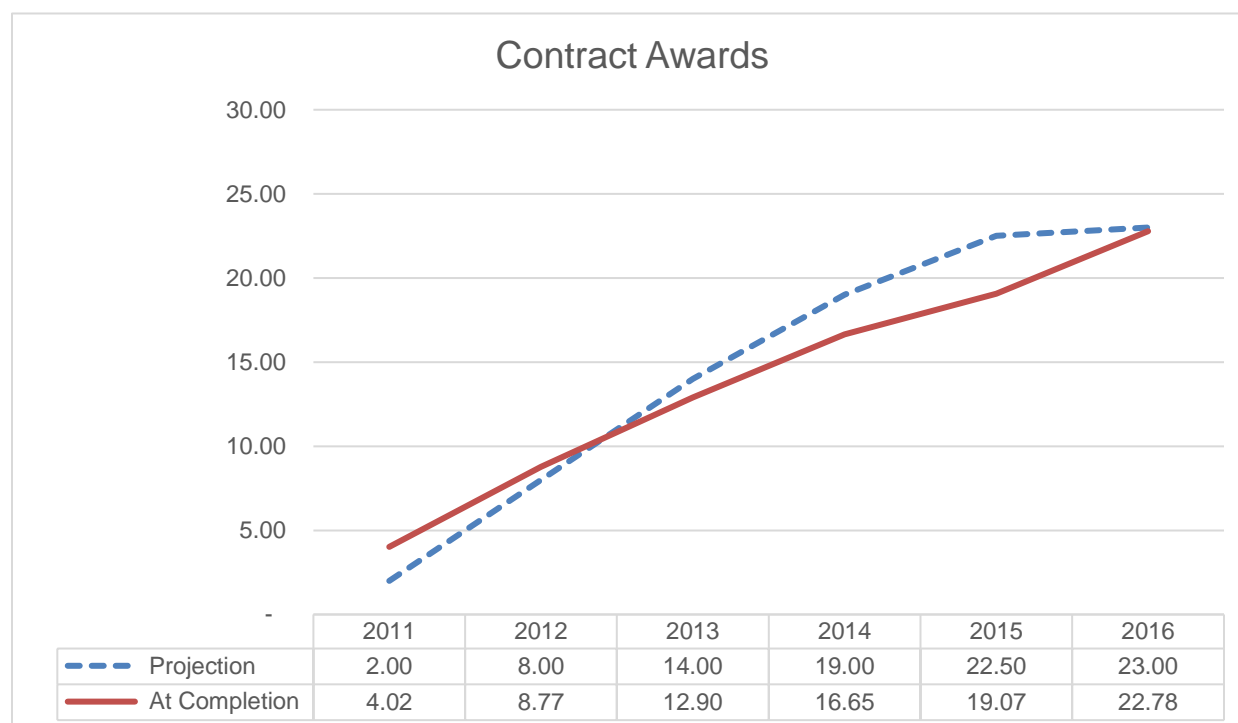
CONTRACT AWARDS OF ADB GRANT PROCEEDS

Table 5.1: Annual and Cumulative Contract Awards of ADB Grant Proceeds
(\$ million)

Year	Annual Contract Awards		Cumulative Contract Awards	
	Amount	% of Total	Amount	% of Total
2011	4.02	17.64	4.02	17.64
2012	4.75	20.85	8.77	38.49
2013	4.13	18.13	12.90	56.62
2014	3.75	16.46	16.65	73.09
2015	2.42	10.63	19.07	83.71
2016	3.71	16.29	22.78	100.00
Total	22.78	100.00	22.78	100.00

ADB = Asian Development Bank.
Source: Asian Development Bank.

Figure 5.1: Projection and Cumulative Contract Awards of ADB Grant Proceeds
(\$ million)



Source: Asian Development Bank.

SUMMARY OF GENDER EQUALITY RESULTS AND ACHIEVEMENTS

I. PROJECT DESCRIPTION

1. The Strengthening Technical and Vocational Education and Training Project was approved by ADB on 9 July 2010 and became effective on 1 September 2010. The project was designed to improve the quality of, and access to, formal technical and vocational education and training in the Lao PDR. The expected impact was a more highly skilled and diverse workforce. The expected outcome was an accessible formal vocational training system that is more responsive to labor market needs. This was to be achieved through five outputs: (i) improved quality of TVET; (ii) increased and more equitable access to TVET; (iii) increased private sector involvement in TVET strategy and delivery; (iv) strengthened governance and management of the TVET system; and (v) effective project management and implementation. The original closing date was 31 March 2016 and subsequently revised to 31 December 2016. The project was categorized as *gender equity as a theme* (GEN).

II. GENDER ANALYSIS AND PROJECT DESIGN FEATURES

A. Gender Issues and Gender Action Plan Features¹

2. **Gender issue.** Female enrollment in traditional trade areas in the Lao PDR has been low compared to men: mechanics (1.3% females), automotive (0.3% females), and construction (1.6% females). On the other hand, female students are heavily overrepresented in traditionally “female” occupations, particularly in tailoring (96%), hospitality services (83% and small-scale home-based business (67%). In 2010, only 27% of all TVET teachers, instructors and managers were females, with the majority involved in traditional female occupational areas of hospitality, tailoring, small business, and agriculture. Among teachers who are 30 years old or younger, only 35% are females. The main gender issues in the education sector include: (i) limited opportunities for females, particularly from remote areas, to high demand skill areas for training and employment, such as mechanics, automotive, and construction; (ii) limited access to TVET due to a lack of dormitories and cost of training and living expenses; (iii) academic barriers in accessing formal TVET training due to formal academic entrance requirements and lack of bridging programs; (iv) limited flexibility in curriculum models and training schedules, which exclude students in employment or other duties; and (v) inadequate incentives, including the lack of quotas and scholarships to encourage more females in nontraditional sectors.

3. **Gender Action Plan Features.** The project was designed to address key constraints to girls' access to TVET and included a Gender Action Plan (GAP) to facilitate greater inclusiveness of female students from remote areas and ethnic backgrounds in formal vocational and technical education and skills training programs and expand access for female staff and students to participate in and benefit from project activities. The GAP addressed access and equity issues through setting of gender quotas for training in the nontraditional priority skill areas. Several features of the GAP included dormitory spaces which include gender-responsive features, vouchers for female students, and inclusion of female students/teachers in training opportunities. The project also supported gender sensitive planning, monitoring and reporting and collected gender-disaggregated data at all levels. Key targets were as follows:

- (i) 20% quota for girls enrolled in nontraditional priority skill areas;
- (ii) 25% of vouchers reserved for girls;
- (iii) 50% of dormitory spaces reserved for girls;

¹ ADB. 2010. *Summary Poverty Reduction and Social Strategy of G0211: Strengthening Technical and Vocational Education and Training Project*. Manila.

- (iv) 20% of TVET teachers and 40% of students in the specialist skills-contracting program and 50% in the skills-contracting program were females;
- (v) wage subsidy scheme for female voucher-recipient graduates to promote poststudy employment implemented;
- (vi) social marketing to promote equitable access to TVET and skills training programs nontraditional skills and trades for females conducted;
- (vii) gender training to increase awareness among stakeholders conducted, and
- (viii) monitoring and evaluation indicators to track GAP implementation developed.

B. Overall Assessment of Gender-Related Results and Achievements

4. The revised GAP consisted of 22 quantitative targets and 23 activities.² At project completion, 17 out of 22 (77%) quantitative targets were achieved while 19 out of 23 (83%) activities were completed. Although one outcome target was not achieved (increase of girls' enrollment in three nontraditional priority skill areas from 0% in 2011 to 20% in 2015), overall achievement exceeded the criteria for successful GAP implementation (75% quantitative targets achieved, and 70% activities completed). Therefore, GAP implementation is rated *successful*.

5. Key achievements under the GAP included the following: (i) 3,017 out of 3,880 enrollment in basic business (80% against a target 40%) were female; (ii) 3 out of 21 basic assessors (14% against a target of 10%) were female; (iii) 1,677 out of 5,040 vouchers recipients were female (33% against target of 25%); (iv) 10 out of 29 National Training Council (34% against a target 30%) were female; (v) 3 out of 12 (25%) of each TVET advisory board members were female; (vi) 3 out of 10 TWG members (30% against a target of 20%) in the four priority skill areas were female; (vii) 785 out of 1,938 (41% against a target of 30%) included in all management and other capacity development programs were female; and (viii) data and information relevant to the monitoring and evaluation of the project activities is gender- disaggregated.

6. Five quantitative targets were not achieved. These included: (i) enrollment of girls in the three nontraditional priority areas (3% achieved against 20% target); (ii) female teacher participation in regional study visits (26% achieved against target of 40%); (iii) female facilitators supporting TWGs in the four priority skill areas (30% achieved against target of 50%); (iv) female teachers and students to be trained under specialist skills-contracting program and skills-contracting program (21% and 19% achieved against targets of 20% and 40%, respectively); and (v) recruitment of local gender specialist as envisaged at project preparation. Instead, the TVED preferred to use its staff to carry out the tasks with support from an international consultant.

7. The target proposed at design was too ambitious given the extremely low enrollment rate at onset and limited influence of the socio-cultural factors affect-the enrollment of female. The performance of this target should have been monitored closely. Actions to boost the female enrollment could have been implemented include: (i) providing more incentives to private enterprises to identify possibilities to recruit more female graduates; (ii) monitoring the effectiveness and readjusting the quality of regular career counselling and social marketing campaigns in underserved areas, by targeting female primary graduates; (iii) engaging gender and social development experts to prepare a sector strategy to address the socio-cultural factors; (iv) engaging a local gender consultant to work full time with the TVED and the public TVET institutions; and (v) adjusting the target during the midterm review.

² After the project midterm preview conducted in November 2013, the EA and ADB agreed to reduce three required activities because these were considered not applicable to the nature of TVET skills training, local culture and government policy. These were: (i) using equipment associated with gender, which in reality were used by both male and female students; (ii) course schedules, which should be compatible with household demands of female students; and (iii) provision of information and counseling services for female students on day care services available locally.

8. The four activities that were not completed were: (i) training on gender for private sector employers, (ii) establishment of a corporate social responsibility/gender recognition award as there was little interest from the private sector, (iii) achievement of a critical mass of female students; and (v) preparation of a tracer study. However, database at the TVED and TVET institutions were gender disaggregated. Both annual and quarterly reports provided gender-disaggregated statistics.

C. Gender Equality Results

9. **Participation in and access to project resources and practical benefits.** To promote more female enrollment and participation in nontraditional skills and trades, the project publicized the voucher training assistance program, provided dormitory facilities and training programs offered through the TVET institutions and mobilized the private sector to hire more females in the four priority skill areas. Out of a total of 50,605 participants who attended the social marketing campaigns and career guidance and counseling, 21,458 (42%) were female. The project constructed 11 dormitories which accommodated 2,200 students. Seven out of 11 dormitories continue to be reserved for accommodating 1,400 female students. This has greatly facilitated female students, particularly those who had no personal transportation coming from rural and remote areas. The project trained 240 job counselors, of which 71 (30%) were female. At project completion, 1,764 out of 5,040 voucher recipients (35%) were from those of the Lao PDR's main ethnic groups (Hmong, Yao, Khmou, Phouan, Taidam, Phouthay, Lue, and Katu); of those, 616 (37%) were female students. The project also reserved dormitory space for ethnic students who came from rural and remote communities, which directly contributed to the increased enrollment of ethnic students in TVET. The project assisted the TVED and the seven public TVET institutions to conduct social marketing campaigns, along with career guidance and counselling to outreach secondary students in rural communities to help them plan their future studies.

10. The project enabled equal opportunities for female and male students to access skill training courses, equipment and training workshops provided by the project. Both male and female teachers and instructors were provided with equal opportunities to attend various training programs including specialist skills contracting program within the country and the region. However, only 11 female teachers (21% against a target of 20%) and 596 female students (19% against a target of 40%) attended the training because the total number of teachers and instructors working in the three nontraditional skill areas (construction and building, furniture-making, and mechanic and machinery maintenance and repair) was extremely low. The key factors affected the low female enrollment in the three nontraditional skill areas were (i) overall education in science, technology, engineering and mathematics (STEM) at all education levels is weak; (ii) severe shortage of STEM teachers, particularly in rural and underserve areas; (iii) no differential wage rates between traditional and nontraditional skills areas; (iv) most primary and secondary schools to provide additional tutorial to students who could not catch up with their peers, but not targeting to female students; (v) private employers believe that male workers has stronger physical strengthen and perform better than female workers when recruiting workers in nontraditional skills areas. The above factors have directly impacted on the female enrollment in the nontraditional skill areas.

11. This, along with weak education in STEM, prevailing cultural norms and perceptions of women working in the nontraditional skill areas, which will take time to change, accounted for the low ratio of female enrollment in these skill areas (3% against a target of 20%). Notwithstanding, the project noted an exceptional story about one female participant's change in behavior and outlook after attending the social marketing campaign and career guidance and counseling, along with the benefits which she derived. See Box 1.

Box 1. Project Impact on Female Beneficiaries

Ms. Weun Thithong, a 21-year-old woman who graduated from the embroidery field of study in the Technical Vocational College in Champasak province in 2017. She comes from a disadvantaged family of eight siblings in Weunkang, a rural village in Moun district, Champasak province. She had to stay at student dormitory due to a lack of financial resources to travel from home to the college. When she was at the last year of high school, the college conducted an outreach social marketing campaigns at her school to disseminate information about studying at Technical Vocational College. After high school, she applied for a two-year program in embroidery field. Upon completing her study, Ms. Weun was recruited as a quality control officer by Power Garment Company, a Japanese manufacture in Champasack province, the Lao PDR that produces and exports children's clothes to Japan. She was very happy to get the job and that her salary was divided into three parts, one for her mother, the second for herself and the third part to support her sister's education. Disseminating information through outreach activities, along with providing scholarships to female students in rural area has encouraged girls to study at Technical Vocational Colleges which helps them to pursue gainful employment.

12. **Strategic changes in gender relations.** The social marketing campaign and career guidance and counseling for community and secondary school levels conducted by the project contributed to a gradual change in people's mindsets, particularly changing biases that in the past had prevented girls from entering fields of study in TVET schools. However, the full impact of these interventions will require a longer time period which is beyond the scope of the project. The project improved girl's education by providing dormitories so that their parents do not need to worry about their daughters' commuting to school. The collaboration with the private sector provided greater job opportunities for students especially girls who enable to get jobs in hotels, restaurants and the tourism industry. This enabled girls to increase their incomes and to support their families and become the role model for girls in their villages. The project set a quota for females in to be involved in TVET, which is one of the strategies for promoting women's empowerment.

13. **Contribution of gender equality result in the attainment of the overall objective.** The GAP was integral to the project and guided the implementation of gender activities which resulted in the attainment of the overall objective besides one missed outcome target. The project's gender equality results can be attributed to the gender sensitive design features, and GAP implementation and monitoring. The GAP was well incorporated in project activities that addressed gender gaps in participation of girls in the TVET institutions. Students who graduated acquired the knowledge which helped prepare them to get needed jobs. Gender disaggregated data were useful in tracking whether gender gaps have narrowed. Female teachers had opportunities to participate in the training for improving their knowledge, which led to improving the quality of TVET. The project provided 11 dormitories (50% reserved for girls) to facilitate students, which contributed to improve equitable access to TVET.

Box 2. Integrating gender into technical teaching

Ms. Khankeo Chanthavong is a 43-year-old teacher at the department of mechanical maintenance and repair at Technical Vocational College at Dongkhamxang, Vientiane Capital. She learned that the project supported school to integrate gender into her teaching and provided teaching materials. The curriculum allocated 18 hours of teaching gender per year which covered gender awareness raising and divisions of labor in the family, community and society. Her teaching also focuses on power and violence against women. Although she went through an initial trial and error period of linking gender topic with her teaching subject, she gradually considered this would be an excellent opportunity at the college. Ms. Khankeo sometimes discuss gender issues in groups, such as how technicians provide services to men and women. For example, technicians should communicate with female clients by using soft voice or when the clients do not know how to get the washing machine properly fixed as they are not able to identify the problem. Therefore, technicians should thoroughly explain to the clients before starting to repair. Ms. Khankeo is very grateful for the project because the gender training has enabled her to gain the gender knowledge that applies to her teaching.

14. The project developed social marketing campaigns using education and communication materials. The Social Marketing Strategy and Communication plan focus on expanding opportunities for female access to voucher scheme, employment opportunities to increase the overall female enrollment in the priority skill areas. The project was designed to support a campaign aimed at improving the poor public perception of TVET and vocationally oriented training, increasing the number and quality of students in the 3 nontraditional priority sectors, and increasing interest in vocational training among females and ethnic groups. These approaches contributed to increase private sector involvement in TVET.

III. LESSONS LEARNED AND RECOMMENDATIONS

15. **Key constraints encountered in GAP implementation.** The project faced inherent underlying challenges in increasing female enrollment in the nontraditional skill areas. The critical factors include cultural norms and beliefs, lack of employment opportunities, nature of nontraditional skills and comparable wages, size of private enterprises, and legal framework. For future projects, the main recommendation is thus to ensure adequate analysis of such constraints, in order to design contextually appropriate response and formulate realistic gender outcome and output targets.

16. **Crucial factors of success in achieving the GAP.** The most crucial aspect for achieving the GAP is the need to reinforce local ownership and conduct consultations with relevant stakeholders, particularly the MOES and TVET institutions to produce meaningful analyses and consensus on realistic gender and ethnic group targets based on the local context, and to set up a reasonable time frame and channel resources needed for capacity development. Furthermore, engaging gender and social development experts to help in implementing GAP is imperative for successful GAP implementation.

17. **Key factors in achieving gender balance in TVET.** There is a need to understand individual country's gender context, specific nature of skill area compared with cultural norms and wages. It would be better to increase overall female enrollment in skill areas that labor demand is high and offer better wages to reflect the cultural norms and beliefs rather than focus in the nontraditional skill areas. Significant time and resources will be needed to change cultural norms and it would hardly see the results within the project timeframe. Actions to boost female enrollment include (i) provide complementary stipends, dormitory facilities, and internship programs; (ii) provide more incentives to private enterprises to identify possibilities to recruit more female

graduates; (iii) TVET institutions should allocate sufficient budget to implement social marketing campaigns and TVET promotion programs, particularly to conduct outreach services to allow more rural girls access to skill training programs; (iv) monitoring the effectiveness and readjusting the quality of regular career counselling and social marketing campaigns in underserved areas, by targeting female primary graduates; (v) engaging gender and social development experts to prepare a sector strategy to address the socio-cultural factors; and (vi) engaging a local gender consultant to work full time with the TVED and the public TVET institutions.

18. **General recommendation for future TVET projects.** Related to the above lessons, general recommendations include the following:

- (i) Emphasis on gender and broader equity for both students and teachers should be discussed with all key stakeholders to reflect reality and the local context, during the early stages of project preparation.
- (ii) Setting realistic targets that are discussed and finalized with government counterparts, based on an analysis of key gender issues in education sector, particularly in TVET to build ownership.
- (iii) Gender and ethnic data should be sex disaggregated and should be included in project monitoring system. Gender and ethnic achievements and targets should be updated and reported in project progress reports, and annual sub-sector reports.

Table A7.1 Achievement of Gender and Ethnic Groups Action Plan

Gender Action Plan activities, Indicators and Targets	Achievements at Project Completion
1. 20% female enrollments in three priority skill areas with low female enrollment.	Not achieved. Total girl's enrollment in the four priority skill areas in the project TVET institutions increased from 37% in 2011/2012 to 48% in 2016/2017. However, total girls' enrollment in the three nontraditional priority skill areas only slightly increased from four (out of 2,218 students, or 0%) in school year 2011/2012 to 80 (out of 2,808 students, or 3%) in school year 2016/2017. This indicate that changes in attitude and cultural perceptions require time; low pay and lack of employment information were considered as challenges.
2. 40% of enrollments in basic business are female by 2016.	Achieved. 3,880 students were enrolled in basic business in school year 2016/2017, of which 3,117 (80%) were female.
Output 1: Improved Quality of TVET	
3. All skills standards manuals are gender and ethnicity sensitive.	Achieved. Competency-based skills standards and curricula for 17 jobs in the four priority trade areas developed in school year 2011/2012 included gender-related modules, covering social and gender relations, and gender-sensitive language which address ethnicity and culture practices.
4. All new TVET curriculum frameworks provide positive images of women working in the four priority skill areas.	Achieved. 17 curriculum frameworks in the four priority skill areas developed and provided positive images of women as shown in social marketing campaigns, which included posters, brochures, student graduates serving as TVET ambassadors, and portrayal of female teachers in TVET.
5. All competency-based assessments are gender sensitive.	Achieved. All competency-based assessments were gender sensitive, provided with sex-disaggregated data and took account of women' perspectives.
6. 10% of skills assessors are females.	Achieved. 3 out of 21 (14%) basic assessors were female.
7. Develop materials and train teachers and staff on Code of Conduct on Prevention of Sexual Harassment and Exploitation and reporting mechanisms.	Achieved. Materials on Code of Conduct on Prevention of Sexual Harassment and Exploitation and report mechanisms were developed to train teachers and staff.
8. 10% of teachers trained in the three nontraditional priority skill areas with low female representation and at least 50% of teachers trained in basic business are female.	Achieved. All 10 female teachers in the 3 nontraditional priority skill areas and all 42 female teachers in basic business received training on skills standards, CBT approach, pedagogical methodology and specialist skills training program.
9. Develop strategies for increasing the number of female teachers in the three priority skill areas with low female representation.	Achieved. Although there is no strategy to increase number of female teachers, all TVET institutions gave priority to female applicants when recruiting new teachers. Female final year students are also encouraged to apply to be teachers upon their graduation.
10. Implement a social marketing campaign to: (i) promote female participation in nontraditional skills	Achieved. An advertising firm was hired to develop a social marketing strategy and conduct campaigns involving posters, brochures, TV and radio spots. TVET

Gender Action Plan activities, Indicators and Targets	Achievements at Project Completion
and trades; (ii) publicize the voucher training assistance program, dormitory facilities and training programs provided by TVET institutions to promote female enrollment in nontraditional TVET; and (iii) mobilize the private sector to hire more females in the four priority skill areas.	institutions provided information on TVET deliverables which were incorporated in the campaigns to enhance public perception of females in TVET, along with explanations on the voucher assistance, facilities and available training programs, and thereby increasing female enrollment. The social marketing campaigns included outreach to the private sector. The materials were shared and discussed with TVET institutions and piloted in TVET and secondary schools.
11. Conduct information workshops and counseling sessions with prospective female students to familiarize them with the range of subjects and employment opportunities that are available to females in the four priority skill areas.	Achieved. The project established a career guidance unit in seven TVET institutions to guide students in selecting their courses. TVET institutions also organized social marketing campaigns at secondary schools and communities to inform the target audience information related skills training courses, provision of voucher, and employments opportunities. The TVET institutions engaged counselors who are full-time teachers who are assigned to provide career counselling to guide students in selecting courses that meet labor market demand. However, they were not trained in gender aspects of their works.
12. All counseling and guidance materials target females.	Achieved. Posters and brochures, targeted females. This was complemented with graduates serving as TVET ambassadors and outreach training programs with female presenters promote female participation.
13. At least 30% of those trained as TVET counselors are females.	Achieved. 71 out of 240 (30%) of TVET counselors trained were female.
Output 2: Increased and more Equitable Access to TVET	
14. At least 25% of voucher recipients are female students.	Achieved. A total of 5,040 students received vouchers, of which 1,677 (33%) were female.
15. At least 50% of dormitory spaces reserved for female students.	Achieved. The project constructed 11 dormitories for 2,200 students, of which seven dormitories were reserved for 1,400 female students (64% of dormitory space reserved for female students).
16. Dormitories have separate spaces and facilities for males/females.	Achieved. The project provided separate male and female dormitories, each equipped with washing facilities, common kitchens, garden, and space for sport activities.
17. Training on Prevention of Sexual Harassment and reporting (including grievances) mechanism to all students.	Achieved. All of 6,688 students received training on Prevention of Sexual Harassment and reporting, including grievance mechanisms, of which 3,197 (48%) were female.
18. Provide training on "Code of Conduct" to all Dormitory Management, security guards and all dormitory staff.	Achieved. 2,200 students, and 22 dormitory staff attended the training on "Code of Conduct", of which 1,400 were female students, and 16 were female dormitory staff. All the public TVET institutes installed CCTV cameras and fences around the dormitory compounds. No security guards were recruited.
19. A critical mass of female students in the three skill areas with low female representation to reduce female isolation in the male dominated training classes.	Not achieved. Due to low enrollment of female students to the nontraditional skill areas, the critical mass of female students in the three nontraditional priority skill areas was not achieved.

Gender Action Plan activities, Indicators and Targets	Achievements at Project Completion
20. Role model/ mentoring program for female students with female faculty and/or with women in related fields. These female staff can meet regularly with female students to discuss job possibilities, workplace awareness and other issues of concern to female students.	Achieved. The project collaborated with the Lao Women's Union of TVET institutions to mentor female students and meet regularly to discuss any issues related to job possibilities, workplace awareness, and other issues of concern to female students.
Output 3: Increased private sector involvement in TVET strategy and delivery	
21. 30% female representation in the NTC.	Achieved. Of NTC's total of 29 members, 10 (34%) were females.
22. Provide sensitization training on issues of female enrollment in nontraditional TVET to all NTC permanent staff.	Achieved. The project organized sensitization training on issues of female enrollment in nontraditional priority skill areas in TVET for NTC permanent staff.
23. At least 40% female participants in the regional study tour.	Not achieved. The project conducted four regional study visits (to the Republic of Korea, New Zealand, Australia, Indonesia and Thailand) with 47 senior staff of which 12 (26%) were females. Males dominated all management and senior technical positions.
24. 25% female members on TVET advisory boards.	Achieved. Out of 82 TVET advisory board members, 21 (25%) were female. Each advisory board comprised three female members (25%).
25. At least 50% female facilitators supporting the trade working groups in the four priority skill areas.	Not achieved. Each trade working group comprised three (30%) female facilitators.
26. At least 20% of TWG members in the four priority skill areas will be female.	Achieved. Out 10 TWG members in the four priority skill areas, three (30%) were female.
27. Develop and provide training on gender, TVET and CSR to private sector/employers.	Not achieved. The project attempted to organize training on gender and CSR to private enterprises and discuss on the possibility to employ more females. However, the private employers were not available and gender training was not their priority.
28. Prepare social marketing strategy with key messages for private sector to increase gender balance in priority skill areas and CSR.	Achieved. A social marketing strategy and communication plan was prepared to encourage private employers to increase gender balance and employ more females in priority skill areas.
29. Females will constitute 20% of TVET teachers and 40% of students to be provided training under specialist skills-contracting program, and 50% of trainees under the skills-contracting program.	Not achieved. Although the target was adjusted to reflect the training cost, availability of private enterprises for delivering the training, the revised target was still unachievable, whereby (i) 11 out of 52 (21%) female teachers in the four priority skill areas received specialist skills-contracting program, and (ii) 596 out of 3,177 (19%) female students in the four priority skill areas were trained in the specialist skills-contracting training program.
30. Establish a CSR/gender recognition award for top performing private employers who have increased female recruitment in nontraditional priority skill areas. Define criteria for award in collaboration with NCCI to give certificates of recognition.	Not achieved. Recognition award for best and/or top performing private employers should have been done by the Ministry of Labor and Social Welfare and the Ministry of Trade and Commerce. This initiative was beyond the authority of the MOES.

Gender Action Plan activities, Indicators and Targets	Achievements at Project Completion
Output 4: Strengthened governance and management of the TVET system	
31. The review of policy and funding frameworks for TVET will incorporate gender/ social equity issues.	Achieved. Gender and social equity issues were incorporated in the TVET policy and funding frameworks, e.g., in determining unit costs for both male and female students and in providing more flexible working arrangements for female teachers.
32. Professional development training program for TVET managerial staff and officials has a module on gender issues, including sensitivity training and promotion of girls in nontraditional occupations.	Achieved. The professional development training program for TVET managerial officials included a module on gender issues, including sensitivity training and promotion of girls in nontraditional occupations.
33. Females constitute at least 30% of participants in all management and other capacity development programs.	Achieved. 1,938 TVED, TVET managers, technical staff and teachers received training under the capacity development program, of which 785 (41%) were female.
34. As vacancies arise, females are recruited into managerial positions in institutions being supported under the project (especially in nontraditional skill areas).	Achieved. Based on the national gender strategy 2010-2015 the project worked closely with the Division for Advancement of Women, the MOES, in implementing the strategy to ensure that: (i) more than 15% of females hold leadership positions in government and mass organizations; (ii) more than 25% of female teachers are to be promoted to decision-making positions at each level; and (iii) conditions are created for females to enhance their professional qualifications.
35. TVET information systems will report gender disaggregated information on enrollment, drop-outs, graduates and other TVET indicators.	Achieved. The EMIS database includes gender disaggregated statistics, and each TVET institution is responsible for data entry. The TVED and TVET institutions staff were trained on data collection, analysis and reporting.
36. Gender balance in training for TVET operation and data management.	Achieved. 382 staff from the TVED, provincial education departments and schools received training on TVET operation and data management trainings, of which 162 (42%) were female.
37. Tracer studies will include gender disaggregated data and report on the results.	Not achieved. Tracer study was not conducted by the project. However, database at the TVED and TVET institutions include gender disaggregated data. Both annual and quarterly reports provided gender disaggregated statistics.
38. LMIS data is gender disaggregated.	Achieved. LMIS data was gender disaggregated.
Output 5: Effective Project Management and Implementation	
39. The DMF developed for the project will incorporate M&E for GAP.	Achieved. The project design and monitoring framework included gender targets which were monitored and reported on a quarterly basis.
40. Train all PIU staff and TVED staff in gender and ethnicity issues, including gender analysis.	Achieved. All of 50 PIU staff received training on gender awareness and analysis on ethnicity, of which 10 (20%) were female. 100 teachers in the four priority skill areas in the project TVET institutions received similar training, of which 50 (50%) were female.
41. Gender targets are included in project Human Resources Development Plan.	Achieved. Gender targets were included in the Human Resources Development Plan as well as the project annual plan.
42. Project to include gender disaggregated data on institutions	Achieved. Gender disaggregated data included in the project and institutions database, and human resource

Gender Action Plan activities, Indicators and Targets	Achievements at Project Completion
being supported under the project and for all human resource development initiatives.	development initiatives. The gender achievements and constraints were updated regularly.
43. Project to include gender disaggregated indicators for M&E.	Achieved. The TVED database and project's M&E included gender disaggregated indicators.
44. All PIU reports to include reporting and analysis on progress against GAP.	Achieved. All project quarterly and annual reports included progress of GAP implementation focused on gender issues, achievements with analysis justification.
45. One TVET International and one National TVET Gender Specialist will be recruited to provide technical guidance related to GAP deliverables and support the DDG/PMU in implementation.	Not achieved. The project recruited an international gender specialist for 8 person-months. It did not recruit a national TVET gender specialist, but instead assigned a gender focal point (government staff) to lead GAP implementation. However, the gender focal point did not have the required gender experience and expertise and was not able to effectively support GAP implementation.

Note: During the project midterm review conducted in November 2013, EA and ADB agreed to reduce the number of GAP actions from 28 to 25 as these were found not applicable/relevant to the project: (i) equipment is suitable for both male and female students; (ii) course schedules should be flexible and compatible with household demands of female students; and (iii) information and counseling services provided on day care services available locally, TVET program time commitments, and in organizing household responsibilities to allow them to participate in TVET. Therefore, it was suggested to remove these actions from the GAP. CSR=corporate social responsibility; DMF=design and monitoring framework; GAP=gender action plan; LMIS=labor market information system; NCCI=National Chamber of Commerce and Industries; M&E=monitoring & evaluation; MOES=Ministry of Education and Sports; NTC=National Training Council; PIU=project implementation unit; PMU=project management unit; TVED=Technical and Vocational Training and Education Department; TVET=technical and vocational training and education; TWG=technical working group.

STATUS OF COMPLIANCE WITH GRANT COVENANTS

No.	Covenant	Reference in Grant Agreement	Status of Compliance
Particular Covenants			
1.	In carrying out of the Project and cooperation of the Project facilities, the Recipient shall perform, or cause to be performed, all obligations set forth in Schedule 4 to this Grant Agreement.	Article IV, Sec 4.01	Complied with.
2.	<p>The Recipient shall (i) maintain, or cause to be maintained, separate accounts of the Project; (ii) have such accounts and related financial statements audited annually, in accordance with appropriate auditing standards consistently applied, by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB; (iii) furnish to ADB, as soon as available but in any event not later than 6 months after the end of each related fiscal year, certified copies of such audited accounts and financial statements and the report of the auditors relating thereto (including the auditors' opinion on the use of the Grant proceeds and compliance with the financial covenants of this Grant Agreement as well as on the use of the procedures for imprest account/statement of expenditures), all in the English languages; and (iv) furnish to ADB such other information concerning such accounts and financial statements and the audit thereof as ADB shall from time to time reasonably request.</p> <p>The Recipient shall enable ADB, upon ADB's request the Recipient's financial statements for the Project and its financial affairs related to the Project from time to time with the auditors appointed by the Recipient pursuant to Section 4.02 (a) and shall authorize and require any representative of such auditors to participate in any such discussions requested by ADB, provided that any such discussion shall be conducted only in the presence of an authorized officer of the Recipient unless the Recipient shall otherwise agree.</p>	Article IV, Sec 4.02	<p>Partly complied with.</p> <p>The Recipient</p> <ul style="list-style-type: none"> (i) established a separate project account; (ii) arranged with SAO to submit APFSs in accordance with the national accounting standards; (iii) ensured APFS and auditors reports submit to ADB in March of each year, six months after the end of each fiscal year. The first APFS for 2010 was not prepared because there were no activities and expenditures since project effectivity in Sep 2010 until Dec 2010. The APFS for the first two fiscal years, 2012, and 2013, were delayed due to the need to clear outstanding advances. The final APFS (combined for 3 months of 2016 and 2017) was submitted to ADB on 28 March 2018 which covered 15 months. The funds in the final APFS were consistent with ADB LFIS account. (iv) At the request of ADB, the EA provided account information and financial statements upon inspection by ADB Controller on SOE reviews. <p>The MOES fully cooperated with ADB Controller by providing all supporting documents during audit of SOEs.</p>
Disbursement Procedures			
3.	Except as ADB may otherwise agree, the Grant proceeds shall be disbursed in accordance with the Loan Disbursement Handbook.	Schedule 2, para. 4	Complied with. All project expenditures were disbursed in accordance with the Loan Disbursement Handbook.
4.	The Recipient shall enable ADB's representatives to inspect the Project, the Goods and Works, and any relevant records and documents.	Article IV, Sec 4.03	Complied with. The EA provided all required information to ADB representatives

No.	Covenant	Reference in Grant Agreement	Status of Compliance
			when required.
5.	<p>(a) Except as ADB may otherwise agree, the Recipient shall establish immediately after the Effective Date, an IA at a commercial bank acceptable to ADB. The IA shall be established, managed, replenished, and liquidated in accordance with the Loan Disbursement Handbook, and detailed arrangements agreed upon between the Recipient and ADB. The currency of the IA shall be Dollar. The ceiling for the IA shall not exceed the lower of (i) the estimated expenditure for the first 6 months of Project implementation, or (ii) the equivalent of 10% of the Grant amount.</p> <p>(b) The SOE may be used for reimbursement of eligible expenditures and to liquidate advances provided into the IA, in accordance with the Loan Disbursement Handbook and detailed arrangements agreed upon between the Recipient and ADB. Any individual payment to be reimbursed or liquidated under the statement of expenditures procedure shall not exceed the equivalent of \$50,000.</p>	Schedule 2, para.5	<p>Complied with.</p> <p>The Borrower established an advance account at the Bank of Lao PDR in October 2010 in US dollar currency. Estimated expenditures for the first 6 months of the project was \$0.23 million, equivalent to 1% of the Grant amount.</p> <p>The EA strictly followed the guidelines and the requirements of both ADB and MOF. Individual payments to be reimbursed and liquidated under the statement of expenditures did not exceed the equivalent of \$50,000.</p>
6.	No withdrawals shall be made from the Grant account for the construction of dormitory facilities or procurement of equipment for a public TVET institution, until such institution has (a) established an advisory board with specific terms of reference in which (i) 25% of its members shall be female; and (b) prepared an institutional improvement plan to the satisfaction of ADB.	Schedule 2, para.6	<p>Complied with.</p> <p>Advisory boards for seven public TVET institutions were established in August 2011. The number of advisory board members was 82, of which 21 (26%) were female and 24 (29%) were from the private sector. The public TVET institutions submitted their institutional improvement plans to the MOES to the satisfaction of ADB.</p>
Implementation Arrangement			
7.	The Recipient shall ensure that the Project is implemented in accordance with the detailed arrangements set forth in the PAM. Any subsequent change to the PAM shall become effective only after approval of such change by the Recipient and ADB. In the event of any discrepancy between the PAM and this Grant Agreement, the provisions of this Grant Agreement shall prevail.	Schedule 4, para.1	<p>Complied with.</p> <p>The project was implemented in accordance with the arrangements indicated in the PAM. The MOES request for any changes were discussed and agreed during project review missions. Thereafter official requests are coursed through MOF to ADB for approval.</p>
Counterpart Funds			
8.	The Recipient shall ensure that (a) adequate counterpart funds required during Project implementation period are provided on a timely basis; (b) annual budgetary appropriation requests are submitted in a timely manner; and (c) appropriated funds are disbursed promptly when needed for Project implementation purposes.	Schedule 4, para.2	<p>Complied with delay.</p> <p>Provision of counterpart fund was adequate, but often delayed. Annual budgets were prepared and timely submitted by end of May of each year. Disbursement of counterpart funds was often delayed.</p>

No.	Covenant	Reference in Grant Agreement	Status of Compliance
Trade Working Group			
9.	Within four months of the Effective Date, the Recipient through the MOES shall have created trade working groups for each of the priority skill areas that shall facilitate partnership between TVET institutions and the private sector.	Schedule 4, para.3	Complied with. Four TWGs in each of the priority trade areas were established in 2011. TWGs actively participated in developing skills standards and curricula for 17 jobs in the four priority trade areas.
Voucher Program			
10.	The Recipient shall ensure that the beneficiaries of the voucher program fulfill the following criteria: (a) enrolled in certificate and diploma programs in the priority skill areas at one of the public TVET institutions or private TVET institutions; (b) aged at least 16 years; and (c) have attended elementary school or have recent employment experience.	Schedule 4, para. 4	Complied with. Voucher beneficiaries met the following criteria: (a) enrolled in certificate III program (95%), diploma program (5%); (b) all recipients were between 16-20 years old; and are graduates of primary and lower secondary schools.
11.	The Recipient shall establish, within 4 months of the Effective Date, a committee with representatives from the NTC, the MOES, and other relevant stakeholders to oversee the operations of the voucher program. The committee shall ensure that the beneficiaries fulfill the selection criteria mentioned in the above paragraph. Upon completion of the selection process, the selection committee shall disclose the voucher allocation process, the names of the beneficiaries and the institutions that the beneficiaries will attend.	Schedule 4, para.5	Complied with delay. The voucher scheme committee was established in 2011, which was delayed almost one year due to more time needed for the executing agency to understand and finalize the implementation procedures for the scheme.
12.	The Recipient shall ensure that all contracts financed by ADB in connection with the Project shall include provisions specifying the right of ADB to audit and examine the records and accounts of the MOES as well as all contractors, suppliers, consultants, and other service providers as they relate to the Project.	Schedule 4, para.13	Complied with. ADB was satisfied with the contract provisions and the right of ADB to audit and examine project-related records and accounts of the MOES as well as all contractors, suppliers, consultants and service providers.
Labor Market Information System			
13.	Within 6 months of the Effective Date, the Recipient through MLSW, shall have commenced the establishment of a labor market information system (LMIS) that shall provide information on labor market indicators, such as skills shortages and salary levels for TVET-trained workers.	Schedule 4, para.6	Partly complied with. The EA established LMIS through Ministerial Decision No. 0659 dated 25 Feb 2011 on appointment of LMIS staff. The Project supported an assessment of existing LMIS, equipment facility and capacity. Subsequently, the project provided equipment with consultants to upgrade the LMIS, and relevant training programs. However, the LMIS was not fully functional due to lack of labor market information and employment statistics.
Education Market Information System			
14.	Within 6 months of the Effective Date, the Recipient through the MOES, shall have commenced the establishment of the TVET education management information system that shall provide a wide range of information on the TVET sector and shall link financial and non-financial data on the TVET sector.	Schedule 4, para.7	Complied with delay. The EA established EMIS in 2012, later than originally envisaged, which included student and teacher statistics, teacher qualifications and profile, TVET policy, plan and promotion tools, and information on career guidance and counselling.

No.	Covenant	Reference in Grant Agreement	Status of Compliance
Donor Support			
15.	The Recipient acknowledges and agrees that ADB may, in consultation with the Recipient, reduce the scope of its assistance to any of the Project Institutions that receive funding from other multilateral development partners deemed substantial by ADB and, as a result thereof, reallocate the proceeds of the Grant to support other Project Institutions or activities under the Project.	Schedule, 4, para8.	Complied with. None of the project TVET institutions received major support in terms of facilities and equipment from any multilateral organization during project fact finding and implementation.
Land Acquisition and Involuntary Resettlement			
16.	The Recipient through the MOES shall ensure that any construction activities under the Project, including for the construction of the dormitory facilities and workshops, shall be done on existing sites, which are located on Recipient-owned land-plots and are free from lien or any other form of encumbrances.	Schedule 4, para.9	Complied with. Land acquisition and resettlement were not required for the project. Nine dormitories were constructed in the existing sites, including two new dormitories on the new TVET institute campus in Savannakhet.
Environment			
17.	The Recipient through the MOES shall ensure that the site selection, design, construction, replacement work and operation of the dormitory facilities shall be implemented in accordance with the relevant regulations of the Recipient and the environmental requirements set out in the Safeguard Policy Statement (2009). The Recipient through the MOES shall also (a) prepare and implement an environmental management plan to ensure proper disposal of hazardous waste, and (b) ensure that the dormitories constructed under the Project shall have a proper waste management system for bathroom and kitchen waste.	Schedule 4, para.10	Complied with. The project was categorized C for environmental impacts and bid documents were equipped with a checklist on environmental requirements. The EA appointed staff to monitor civil works and ensured safeguard requirements complied with. All 11 dormitory buildings included proper waste management system for bathroom and kitchen waste.
Gender Action Plan and the Ethnic Groups Development Plan			
18.	<p>The Recipient through the MOES shall ensure that the agreed Gender Action Plan and the Ethnic Groups Development Plan are fully implemented and budgeted for and that all Project activities are designed and implemented in accordance with ADB's Policy on Gender and Development (1998) and the Safeguard Policy Statement (2009). In particular, the Recipient through the MOES shall ensure that:</p> <ul style="list-style-type: none"> (i) the female enrollment in Project Institutions shall be (i) 20% in the Priority Skill Areas with low female representation, namely construction and building trades, mechanical and machinery maintenance and repair, and furniture-making, and (ii) 40% in basic business; (ii) ensure that at least 25% of the voucher beneficiaries provided under the Project and 50% of the dormitory rooms constructed under the Project shall be reserved for female students; (iii) at least 20% of the teachers and at least 40% of the students to be trained by private firms through the specialist training program under the Project shall be female; (iv) at least 50% of the students to be trained by privately owned TVET institutions through the 	Schedule 4, para.11	<p>Partly complied with.</p> <ul style="list-style-type: none"> (i) Female enrollment was: (i) 3% in the priority skill areas with low female representation; and (ii) 47% in basic business. (ii) Out of 5,040 voucher recipients, 1,677 (33%) were females. 64% of dormitory beds were reserved for females. (iii) 61% of teachers and 24% of students in the priority skill areas receiving training from the private firms were female. (iv) 38% of trainees trained in 10 skill areas by private TVET institutions under the skills-contracting program were female.

No.	Covenant	Reference in Grant Agreement	Status of Compliance
	general training program under the Project shall be female; (v) the ethnic groups enrollment in Project institutions at the certificate and diploma levels in the priority skill areas shall be at least 20%; and (vi) all monitoring and evaluation data are disaggregated by sex and ethnicity.		(v) 35% of students enrolled in the certificate and diploma programs were from ethnic groups. (vi) The management information system contained gender and ethnicity disaggregated data.
Anticorruption			
19.	The Recipient shall comply with ADB's Anticorruption Policy (1998, as amended to date). The Recipient (i) acknowledges ADB's right to investigate, directly or through its agents, any alleged corrupt, fraudulent, collusive or coercive practices relating to the Project; and (ii) agrees to cooperate fully with such investigation and to extend all necessary assistance, including providing access to all relevant books, records, as may be necessary for the satisfactory completion of any such investigation.	Schedule 4, para.12	Complied with (i) The MOES and the project team acknowledged ADB's right and provided full support if any investigation would be conducted. (ii) The MOES and the project team agreed to cooperate with such investigation.
20.	The Recipient shall ensure that all contracts financed by ADB in connection with the Project shall include provisions specifying the right of ADB to audit and examine the records and accounts of the MOES as well as all contractors, suppliers, consultants, and other service providers as they relate to the Project.	Schedule 4, para. 13	Complied with. All bidding documents included a provision specifying the right of ADB to audit and examine records and accounts of the MOES as well as all contractors, suppliers, consultants, and other service providers.
21.	The Recipient, through the MOES, shall also: (i) carry out periodic inspections of the Project contractor's activities related to fund withdrawals and settlements; (ii) ensure that relevant provisions of ADB's Anticorruption Policy (1998), as amended to date, are included in all bidding documents for the Project; (iii) establish a Project website to disclose information about various project-related issues, including procurement and other contracts awarded under the Project; and (iv) establish, within 4 months of the Effective Date, a grievance redress task force to receive and resolve complaints/grievances or act upon reports from stakeholders on possible misuse of funds and other irregularities under the Project.	Schedule 4, para.14	Complied with. (i) The MOES established a procurement committee to oversee and monitor the procurement of works, goods and services. An inspection and monitoring department was established to function as an internal audit and grievance mechanism to handle any complaints on project-related activities. (ii) ADB's anticorruption policy included in all bidding documents prepared under the project. (iii) A website was established (http://www.stvetlao.org/), containing project information, e.g., components, and summaries of the main tasks and progress, including disclosure of procurement of goods and services and related services. (iv) Grievance mechanism unit was integrated under the inspection department which is assigned to handle all complaints regarding procurement and any conflict.

Note: ADB=Asian Development Bank; EA=executing agency; EMIS=education management information system; GAP=gender action plan; IA=imprest account; LMIS=labor market information system; MOES=Ministry of Education and Sports; MOF=Ministry of Finance; PIU=project implementation unit; PMU=project management unit; SAO=state audit organization; SOE=statement of expenditures; TVET=technical and vocational training and education; TWG=technical working group

ECONOMIC REEVALUATION

1. **Background.** The Strengthening Technical and Vocational Education and Training Project was designed to support the MOES of the Lao People's Democratic Republic to produce graduates with technical and vocational skills in response to labor market demand of a rapidly growing economy. ADB approved \$23.0 million and the government committed \$1.8 million to finance the project. The project envisaged five outputs comprising (i) Output 1: improved quality of TVET (\$9.0 million), (ii) Output 2: increased and more equitable access to TVET (\$8.5 million), (iii) Output 3: increased private sector involvement in TVET strategy and delivery (\$3.6 million), (iv) Output 4: strengthen management and governance of the TVET strategy and delivery (\$0.9 million), and (v) Output 5: effective project management and implementation (\$0.6 million). It also had a provision of \$2.2 million in physical and price contingencies.

2. **Macroeconomic performance.** The Lao PDR's gross national income per capita¹ increased by more than 40% from \$1,620 in 2013 to \$2,270 in 2017.² During the 2013-2017, the annual gross domestic product growth rate averaged 7.4% and demonstrated a somewhat declining trend from 8.0% in 2013 to 6.9% in 2017. It is expected to retain 6.6% or higher annual growth during 2018-2019.³ However, current macroeconomic performance shows that since the fiscal year 2013-2014 the fiscal deficit has widened markedly because of a large increase in public sector wages and benefits leading to slower growth in public spending in the medium term.⁴ The overall budget deficit increased from \$622 million in 2013 to \$904 million in 2017.⁵ The government would have to maintain macroeconomic stability by reducing fiscal deficit, strengthening public debt management, and addressing the weakness in the financial sector.⁶

3. The Lao PDR experienced a sharp decline in poverty headcount from 46% in 1992 to 23% in 2012.⁷ This is largely attributable to rapid economic growth. However, 28.8% still live below the international poverty line of \$1.25/day in purchasing power parity and poverty appears to be closely linked to the level of education (footnote 4). Nevertheless, the government is strongly committed to the 2030 Agenda on sustainable development goals (SDGs) and it has been working towards achieving graduation from the list of least developed countries in line with the National Socio-Economic Development Plan which is fully aligned with SDGs. However, the Lao PDR continues to face key challenges including rising inequality. Over the last two decades, the distribution of private household expenditure has become more unequal with the Gini coefficient rising from 0.311 to 0.364 and the increase is statistically significant.⁸ A high degree of geographical heterogeneity was also reported in another study.⁹

4. **Employer demand for TVET graduates.** The availability of a skilled workforce, among other factors, is considered a necessity for any growing economy and the labor supply need to

¹ Based on Atlas Method (current US\$).

² World Bank Group. 2018. World Development Indicator: Size of Economy Table, <https://data.worldbank.org/indicator/NY.GNP.PCAP.CD?locations=LA> (retrieved on 28 December 2018).

³ ADB. 2018. Asian Development Outlook, Manila.

⁴ ADB. 2016. *Report and Recommendation of the President for the Second Strengthening Technical and Vocational Education and Training, Appendix on financial and economic analysis*, Manila.

⁵ Fiscal Policy Department, 2019. Ministry of Finance.

⁶ World Bank Group. 2014. *Lao PDR Investment Climate Assessment: Policy uncertainty in the midst of a natural resources boom*. Vientiane.

⁷ World Bank. 2014. *Poverty Profile in Lao PDR: Poverty Report for the Lao Consumption and Expenditure Survey, 2012–2013*. Vientiane.

⁸ Peter Warr, Sitthiroth Rasphone, and Jayant Menon. 2015. *Two Decades of Rising Inequality in Lao People's Democratic Republic, ADB Economics Working Paper Series No. 461*. Manila

⁹ Ministry of Planning and Investment, Lao PDR. 2016. *Where are the poor? Lao PDR Census Based Poverty Map: Province and District Level Results*. Vientiane.

keep pace with demand for labor, both in terms of quality and numbers. In 2017, the Lao PDR occupied the 141st position in a list of 190 countries surveyed in terms of ease of doing business. The ranking declined further to 154th position in 2018.¹⁰ For the first time, the Lao PDR conducted a labor force survey in 2017 and the report identified that mismatch between labor demand and labor supply had led to labor underutilization.¹¹ The rate of underutilization was estimated to be 25.8% in 2017 and it varied by gender and location (28.3% for men vs. 22.7% for females; 33.0% for rural and 14.2% for urban areas). It was much higher for the youth labor (43.2%). The government has realized the need to align labor supply based on market demand and it is committed to strengthening the TVET sector. While there are no tracer studies covering TVET graduates, based on key informant interviews and discussions with former graduates, ADB understands that the sector requires further strengthening with particular focus on improvements in training delivery methods by more engagement of trainees in trade-related practical experience, use of trade relevant improved tools and machinery, improvement in the skills of teaching staff, and close linkages with private sector industries. The industry linkages are already taking place in selected trades such as automotive mechanics and furniture-making. Better trained and skill-equipped graduates have been readily able to find employment in respective trade areas prior to or soon after their graduation.

5. **Social demand for TVET education and training.** The importance of TVET education and training has gained significant interest in upper secondary and post-secondary students who for one or another reason are unable to attend the university level higher education. The demand for education and training particularly in auto mechanics, construction, and computing have been strong. The TVET institutions have taken steps to disseminate the value of TVET education by launching awareness-raising events for the secondary students and their parents, organizing job fairs, and using former TVET graduates as their ambassadors. Efforts have done into demonstrating income from employment with TVET education is competitive with other post-secondary education, including university-level education. In the ASEAN region, Lao PDR's net enrollment in secondary education in 2016 was the second lowest at 58.9%, higher than Cambodia (37.1%) and Myanmar (56.2%) but lower than other countries – Singapore (99.5%), Brunei-Darussalam (83.2%), Viet Nam (82.1%), Indonesia (76.8%), Thailand (77.3%), Philippines (74.2%), and Malaysia (68.5%).¹² Based on information during the key informant interviews with the management staff at the selected TVET institutions suggest that the demand for TVET remains strong. The government plans to increase the enrollment of students in TVET institutions from 37,005 in 2017 to over 50,000 in 2021.¹³ TVET institutions have focussed on addressing the demand from the manufacturing, hospitality, and other service sectors.

6. **Empirical evidence.** Access to university education in the Lao PDR for secondary school graduates is limited and only about one-fifth of graduates are able to enter the public universities. The rest are left with the choice of seeking education at technical/vocational schools or private higher education institutions. Only a small number of them are able to seek education overseas due to limited English language skills or much higher costs involved. TVET provides an obvious option both for secondary graduates and upper secondary school students who are not able to complete their secondary education. In 2014/2015 school year, 26,300 students (10,400 female) enrolled in 23 public and 36,000 students in 40 private had enrolled in public and private TVET

¹⁰ The World Bank. 2019. Doing Business 2019: Training for Reform, International Bank for Reconstruction and Development, Washington, D.C.

¹¹ Labor Statistics Bureau. 2018. Lao PDR Labor Force Survey 2017: Survey Findings Report, Vientiane.

¹² ASEAN Secretariat. 2018. ASEAN Key Figures 2018, Jakarta.

¹³ Data provided by the Technical and Vocational Education and Training Department. 2017. The importance of TVET and its contribution to sustainable development, AIP Conference Proceedings 1887, available at <https://aip.scitation.org/doi/pdf/10.1063/1.5003559>

institutions, respectively.¹⁴ This is a substantial increase in the TVET enrollment from about 9,000 students in 2009 but the access still remains limited particularly for the secondary students from rural areas and those that do not complete grade 9. The quality of TVET offering also varies significantly across the provinces and are dependent on funding from the provincial governments, level of a proactive management system, and ability to derive cost-efficiency. Additional factors such as the provision of dormitories particularly for female, rural, and ethnic students as well as access to financial support through scholarships or grants govern students' enrollment and completion of education and training. The recent labor force survey report highlights significant gaps in labor market demand and supply.

7. **Economic analysis.** The project's economic analysis conducted at project completion shows estimated efficiency of utilization of resources (project funds). It computes the economic internal rate of return (EIRR) at completion and compares with the one estimated at project appraisal. The analysis follows the Asian Development Bank' *Guidelines for Economic Analysis of Project*, as amended from time to time.

8. The analysis assumptions included: (i) recurrent expenditure at 5% per annum after the project completion year 2016, (ii) distortionary costs of government counterpart finance of 1.39%, (iii) deadweight loss of 20%, (iv) a discount rate of 12% as applied for ADB financed projects, and (v) a 25-year economic life of the project. Economic costs and benefits are estimated using the work price numeraire method by applying a standard conversion factor (SCF) of 0.9 on non-labor, nontradable costs and a shadow wage rate factors (SWRF) of 0.8 that is consistent with the SCF and SWRF applied in a recent ADB project for the Lao PDR (footnote 16). The EIRR value above 12% suggests that the project investment continues to remain economically viable at the time of project completion. The economic costs are computed at 2016 constant prices.

9. **Estimation of economic benefits.** The project focus has been on the improvement of TVET quality and increased coverage. The TVET graduates from the project-supported institutions have demonstrated their comparative advantage over those without such education or training in the local labor market. The proportion of female students in TVET schools has consistently remained higher in business services related to trade, while male students dominate the auto-mechanic, construction, and furniture trades. Almost all TVET students are encouraged to complete their training/education and hence the completion rate is around 98%.¹⁵ The provision of student dormitories with decent facilities has contributed to attracting ethnic and female students particularly from the geographically disadvantaged areas. The TVET graduates are employed in both the public and private sectors. The TVET institutions have been able to attract some female students even in nontraditional trade areas and these graduates serve as the brand ambassadors in raising the profile of female employment particularly in auto-mechanic and construction fields.

10. According to a 2017 labor force survey,¹⁶ a total of 366,000 individuals had attended TVET, of which female and rural individuals accounted for 44% and 40%, respectively. Urban areas had a much higher percentage of working-age population with TVET qualification (14.6%) compared to rural areas (4.5%) thereby suggesting that the outreach of TVET institutions is largely concentrated in urban areas. The data suggests that 13.5% of Lao PDR's labor force had vocational qualifications (12.5% for the female labor force, and 20.1% of urban and 8.8% rural

¹⁴ ADB. 2016. *Report and Recommendation of the President to the Board of Directors, Proposed Grant to the Lao People's Democratic Republic for the Second Strengthening Technical and Vocational Education and Training Project*. Appendix on financial and economic analysis, Manila.

¹⁵ Based on key informant interviews conducted by the PCR mission during field visits at major TVET institutions in Pakse, Savannakhet, and Vientiane.

¹⁶ Laos Statistics Bureau. 2018. *Lao PDR Labor Force Survey (LFS 2017): Survey Findings Report*, Vientiane.

labor force). Overall, the labor force participation rate of individuals with vocational education attainment was much higher (69% to 74%) compared to the national average (41%). Of the 366,000 individuals who attained vocational education, 249,000 were employed (68%).

11. Wage employment remained the dominant (76%) for the vocational education graduates followed by 19% employed in the informal sector and the 5% in the households.¹⁷ The Labor Force Survey (2017) also suggests that there exists a wage differential between men and women and between urban and rural areas. Women earned less than men (20% less for those with vocational first, 8% less for those with the vocational middle, and 26% for those with vocational high). Similarly, in urban areas, women with vocational first, middle and high earned 27%, 15% and 34%, respectively. The wage differential was far less in rural areas. For example, rural women with vocational first earned 16% less than rural men but those with vocational middle and high earned 4% and 6% more than their male counterparts. Data also suggests that overall monthly income for an individual with vocational qualification in 2017 was 80% of the individuals with university qualifications. On the other hand, the monthly income of vocational graduates remained 26% higher than secondary education graduates. While the labor force survey data suggests wage differential between men and women and between rural and urban areas, the key informants during the field mission confirmed that for a project supported TVET graduates, the differential did not exist and hence a uniform wage rate has been applied in project benefits estimation. Table A9.1 shows the enrollment of students in TVET institutions supported by the project. The private TVET institutions appear to have marginally benefitted from the project in terms of access to improved curriculum and some capacity development support. Since data from these institutions are not available, the marginal benefit has been assessed negligible.

Table A9.1: Enrollment in TVET Institutions Under the STVET Project

TVET Institution	2013	2014	2015	2016	2017
Pakpasak	5,130	5,858	5,082	5,981	6,428
Vientiane	2,119	2,323	2,827	2,390	2,759
Champasak	2,023	2,368	2,979	3,223	3,105
Vocational Development Institute	139	147	136	187	272
Lao-German	791	937	1,195	1,318	1,622
Dongkhamxang	767	968	1,167	849	839
Luang Prabang	1,353	1,692	2,024	2,288	2,297
Savannakhet	1,099	1,316	1,342	1,594	2,817
Saysombath	433	316	486	231	367*
Vientiane Phatthana	42	83	62*	62*	62*
Total Project Support	13,896	16,008	17,300	18,123	20,568*
Total (all private VTECs)	23,247	26,264	30,221	33,114	37,005

Source: MOES, 2018.

Note: * denotes average figure of the available data. Actual enrollment numbers were not available.

12. **Estimation of economic costs.** The economic costs in the analysis have been derived from the actual costs and recurrent costs computed based on 5% on civil works, 10% on furniture,

¹⁷ The employment rate in 2017 stood at 67.3% for the individuals with the vocational first, 75.3% for the vocational middle, and 85.0% for vocational high qualifications.

and 20% on equipment and vehicles. The incremental recurrent cost is based on the incremental number of TVET students at the participating institutions accruing to the project each year, multiplied by the recurrent cost per student as estimated by TVED. The estimated opportunity cost of an upper secondary school student not attending higher education is estimated at 80% of the TVET income. Table A9.2 provides actual project costs by cost category incurred during the project.

Table A.9.2: Project Cost by Category

Cost Category	Total Cost
Consulting Services	4.49
Civil Works	4.95
Studies	0.30
Goods	4.36
Materials	0.58
Contracted Training	2.54
Staff Development	1.25
Management	0.31
Voucher Program	4.00
Unallocated	0.00
Salaries	0.92
Office Space	1.58
Operation and Maintenance	1.21
Taxes and Duties	0.83
Total Project Cost	27.32
Use of Grand Funds for Project Activities	22.78

Source: Asian Development Bank
Figures in \$

13. **Results of economic re-evaluation.** The improvement in the quality of TVET delivery and modest growth of enrollment of students in the project supported TVET public institutions are likely to support employability of TVET graduates and these are likely to continue during the 25 years economic life of the project. The overall economic internal rate of return (EIRR) at the project completion is estimated to be 12.5% which is somewhat lower than estimates of 15.2% at appraisal but still above the 12% threshold applied to the ADB investment projects (Table A9.3). The lower EIRR value is associated with relatively slower growth in the wages and relatively conservative growth in enrollment of students at the public TVET institutions.

Table A9.3: Project Cost and Benefit Analysis
(\$)

Project year	Project costs	Benefits	Net benefits
1	\$4,830,000	\$0	-\$4,830,000.00
2	\$6,210,000	\$0	-\$6,210,000.00
3	\$2,360,000	\$750,420	-\$1,609,580
4	\$2,210,000	\$803,099	-\$1,406,901
5	\$4,260,000	\$1,326,816	-\$2,933,184
6	\$2,020,000	\$1,489,017	-\$530,983
7	\$1,413,000	\$1,954,335	\$541,335
8	\$1,413,000	\$2,172,760	\$759,760
9	\$1,413,000	\$2,737,678	\$1,324,678
10	\$1,413,000	\$2,395,468	\$982,468
11	\$1,413,000	\$3,018,290	\$1,605,290
12	\$1,413,000	\$3,961,505	\$2,548,505
13	\$1,413,000	\$5,414,057	\$4,001,057
14	\$1,413,000	\$5,549,409	\$4,136,409
15	\$1,413,000	\$5,688,144	\$4,275,144
16	\$1,413,000	\$7,287,935	\$5,874,935
17	\$1,413,000	\$7,470,133	\$6,057,133
18	\$1,413,000	\$9,188,264	\$7,775,264
19	\$1,413,000	\$9,417,970	\$8,004,970
20	\$1,413,000	\$11,262,323	\$9,849,323
21	\$1,413,000	\$11,543,881	\$10,130,881
22	\$1,413,000	\$11,832,478	\$10,419,478
23	\$1,413,000	\$13,860,902	\$12,447,902
24	\$1,413,000	\$14,207,425	\$12,794,425
25	\$1,413,000	\$14,562,611	\$13,149,611
Totals	\$48,737,000	\$147,894,918	\$99,157,918
Discounted totals	\$23,588,253	\$24,602,234	\$1,013,981
EIRR			12.50%

Source: Asian Development Bank.

Note: EIRR = economic internal rate of return.

14. **Sensitivity analysis.** The sensitivity analysis suggests that EIRR estimates are reasonably robust and exceeds the threshold of 12% at the project level. However, EIRR is somewhat sensitive to increase/decrease in benefits. While it is unlikely that the government's support for TVET in the Lao PDR will weaken, there is still some possibility that macroeconomic fundamentals may change and lead to lower economic growth and impose a fiscal strain on the treasury. Similarly, costs may also rise during the economic life of the project due to the demand for higher wage rates and an increase in recurrent costs post project completion. Likewise, project benefits are subject to continued demand for TVET graduates and improvement in the quality of graduates. There is still a mismatch between the labor market demand and supply requiring private businesses to provide further hands-on training or internships which adds extra costs to the businesses. The situation may revert to a favourable labor market conditions if the TVET institutions find ways to bridge the skill gaps through rigorous education and training by aligning

delivery with industries' requirements. The 2017 labor force survey of the Lao PDR indicates that the employability of TVET graduates remains high at 76% on average and at 100% in some trade areas such as auto mechanics. Table A9.4 provides results of sensitivity analysis.

Table A9.4: Sensitivity Analysis Due to Increase in Costs and Decrease in Benefits

Scenario	EIRR (%)
Scenario 1: At project completion	12.50
Scenario 2: 20% higher recurrent costs	11.92
Scenario 3: 20% higher benefits from year 6 onwards	14.34
Scenario 4: 20% fewer benefits	9.42
Scenario 5: 20% higher costs and 20% fewer benefits	8.73

Source: ADB computations.

15. **Opportunity and challenges ahead.** The project has contributed to lifting the status and reputation of public TVET institutions and introduced an active mechanism to engage with private sector enterprises, both for providing skill sets to their students and enhancing opportunities for the employability of the graduates. The project has demonstrated that with proactive leadership, TVET institutions can flourish. There is abundant scope for growth opportunities, particularly in infrastructure related trade areas. There is renewed assurance with the support of scholarships and providing safe, clean and comfortable student dormitories, it is possible to attract women and ethnic students in line with Lao PDR's socioeconomic development plan. There are, however, significant challenges. First and the foremost, there is a need for a proper and robust analysis of labor market demand and supply which can contribute to a national human resource development plan. TVET will have a significant role to play. Second, trade area of business services will continue to face a challenge from the private sector providers particularly in urban areas and the public TVET institutions could benefit from identifying specific niche areas within the trade that they can capitalize on. Third, the need for substantial investment in human resource development through higher education and training has become paramount to keep up with the technological development. The Lao PDR can further strengthen its commitment by allocating financial resources from internal sources well beyond support available from ADB and other development partners.