

Country Name	Project for Improving TVET Quality to Meet the Needs of Industries
Kingdom of Cambodia	

I. Project Outline

Background	Cambodia achieved rapid economic growth, with a GDP growth of 7.3% in 2012, and was projected to exceed 7% in 2014. Furthermore, to maintain economic growth ahead of ASEAN integration in 2015, there was an urgent need to diversify the industrial structure through the development of industries that substitute for imports and supporting industries by expanding domestic demand and creating and fostering high value-added industries that are globally competitive. However, there was a lack of domestic industrial human resources that could respond to the diversification of the industrial structure and high value-added industries.														
Objectives of the Project	<p>Through the development of the Standard Training Package for the higher diploma in electricity, capacity building of the instructors for the pilot institutions of Technical and Vocational Education and Training (TVET), introduction of the dissemination system of the package and the strengthening of the partnership among pilot TVET institutions, the project aims at improving quality of training for the higher diploma in electricity in pilot TVET institutions, thereby contributing to improving the quality of training for the higher diploma in electricity in TVET institutions under MLVT nationwide.</p> <ol style="list-style-type: none"> Overall Goal: Quality of training for the higher diploma in electricity in the TVET institutions under the Ministry of Labour and Vocational Training (MLVT) (nationwide) is strengthened. Project Purpose: Quality of training for the higher diploma in electricity in TVET institutions under MLVT (pilot institutions) is strengthened. 														
Activities of the Project	<ol style="list-style-type: none"> Project Site: Phnom Penh. Main Activities: Development of the Standard Training Package for the higher diploma in electricity, development and implementation of the Capacity Development Plan for instructors' development of technical aspects of the pre-service teacher training in the area of electricity, facilitation of the introduction of the Standard Training Package to non-pilot TVET institutions, etc. Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Japanese Side</td> <td style="width: 50%;">Cambodia Side</td> </tr> <tr> <td>1) Experts: 11 persons</td> <td>1) Staff allocated: 4 persons</td> </tr> <tr> <td>2) Trainees received in Japan: 27 persons</td> <td>2) Facility: Office space</td> </tr> <tr> <td>3) Trainees received in Malaysia: 8 persons</td> <td>3) Local cost: cost for electricity and water, etc.</td> </tr> <tr> <td>4) Equipment: photocopiers, LCD projectors, training equipment designed by electrical specialists, etc.</td> <td></td> </tr> <tr> <td>5) Local cost: activity operational expenditures.</td> <td></td> </tr> </table> 			Japanese Side	Cambodia Side	1) Experts: 11 persons	1) Staff allocated: 4 persons	2) Trainees received in Japan: 27 persons	2) Facility: Office space	3) Trainees received in Malaysia: 8 persons	3) Local cost: cost for electricity and water, etc.	4) Equipment: photocopiers, LCD projectors, training equipment designed by electrical specialists, etc.		5) Local cost: activity operational expenditures.	
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Project Period	(ex-ante) September 2015 to March 2020 (54 months) (actual) September 28, 2015 to March 31, 2021 (67 months)	Project Cost (Japanese side only)	(ex-ante) 399 million yen, (actual) 466 million yen												
Implementing Agency	Ministry of Labour and Vocational Training (MLVT), National Polytechnic Institute of Cambodia (NPIC), National Technical Training Institute (NTTI), and Preah Kossamak Polytechnic Institute (PPI).														
Cooperation Agency in Japan	None.														

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

- Data of 2019 was used for verification of the achievement of the Project Purpose at the time of project completion, because the pilot institutions were closed due to the COVID-19 pandemic, and it was difficult to get data after 2020.

1 Relevance/Coherence
<p>[Relevance]</p> <p><Consistency with the Development Policy of Cambodia at the Time of Ex-Ante Evaluation></p> <p>In the "Rectangular Strategy Phase 3" (2013), one of the priority issues related to the human resource development in the industrial sector was training of engineers, technicians, and workers with appropriate skills to meet market demands through the reforms in higher education and technical vocational training and promotion of active collaboration between the public and private sectors. In the "National Strategic Development Plan" (2014-2018), one of the measures to be implemented by MLVT was stated as follows: guaranteeing fair access to vocational training, providing training at certificate and diploma levels, promoting public-private partnerships, and so on. The project was consistent with the development policy of Cambodia at the time of ex-ante evaluation.</p> <p><Consistency with the Development Needs of Cambodia at the Time of Ex-Ante Evaluation></p> <p>In Cambodia, there was a lack of domestic industrial human resources who could respond to the diversification of the industrial structure and high-value-added industries. In particular, there was a shortage of line manager-level personnel (technicians) to manage manufacturing lines, and companies expanding into Cambodia were bringing such personnel from other Asian countries. The project was consistent with the development needs of Cambodia at the time of ex-ante evaluation.</p> <p><Appropriateness of Project Design/Approach></p> <p>The project design/approach was appropriate. No problem attributed to the project design/approach was confirmed.</p> <p><Evaluation Result></p>

In light of the above, the relevance of the project is ③¹.

[Coherence]

<Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation>

The “Country Assistance Policy for Cambodia” (2012) identified “strengthening of the economic infrastructure” as one of the priority areas. It positioned the “program for human resource development in the industrial sector” under the “strengthening of the private sector.” The project was consistent with the Japan’s ODA policy to Cambodia at the time of ex-post evaluation.

<Collaboration/Coordination with JICA’s Other Interventions>

The collaboration/coordination between the project and JICA technical training courses was planned at the time of ex-ante evaluation and was implemented, the positive effects expected were confirmed at the time of ex-post evaluation. A total of 45 trainees were recommended by the project and sent to the courses including “Practical HRD in Electricity and Electronics Engineering-Aiming at Elimination of Technology Gap between Education-Field Site” and “Industrial Technology Education.”

<Cooperation with other institutions/ Coordination with International Framework>

The cooperation/coordination with the Asian Development Bank (ADB) was planned at the time of ex-ante evaluation and implemented as planned, and the positive effect was confirmed at the time of ex-post evaluation. The list of the training equipment developed by the project was shared with ADB, with the equipment specifications. The equipment has been available for the "Skills for Competitiveness Project" (2019-2026) of ADB.

<Evaluation Result>

In light of the above, the coherence of the project is ③.

[Evaluation Result of Relevance/Coherence]

In the light above, the relevance/coherence of the project is ③.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the Time of Project Completion>

At the time of project completion, the Project Purpose was achieved as planned. 74.6% of the students successfully passed the final practice examination in 2019 (Indicator 1), slightly not reaching the target. To achieve the Project Purpose, the capacity development of the Technical Working Group among the pilot institutions was conducted by planning, implementing, and improving the Final Practice Examination, not just focusing on the result. In 2019, 72.3% of the students were employed or offered jobs by companies through internships (Indicator 2). In the same year, the satisfaction rates of graduates and students of the higher diploma with practical skills also exceeded the target, reaching 4.25 (out of 5) (Indicator 3).

<Continuation Status of Project Effects at the Time of Ex-Post Evaluation>

By the time of the ex-post evaluation, it can be judged that the project effects have been mostly continued from the following reasons. After the project completion, the percentage of students who passed the final practice examination increased from 74.6% in 2019 to 94.7%, 78.5%, and 95.9% in 2021 at NPIC, NTTI, and PPI, respectively. Then, the percentage remained mostly the same at NPIC and PPI until 2024, although the percentage decreased at NTTI because there were students who dropped out and did not take the final practice examination. Some students stopped studying to work, and other students could not afford the tuition fees and daily expenses. The percentage of students who were employed or offered a job at companies through the internship increased in 2021, but after 2022, it was on a decreasing trend at three institutes. After the project completion, the satisfaction rates of graduates/students with training for the higher diploma slightly decreased in 2021 compared to the project completion year and then remained mostly stable in NTTI and PPI. The data from NPIC were not available because the survey was not carried out due to the COVID-19 pandemic.

The Standard Training Package has been recognized as the approved training package by MLVT, based on which the instructors of NPIC, NTTI, and PPI have continued to provide training for the higher diploma in electricity. NTTI has continuously implemented the pre-service teacher training curriculum following the content of the Occupational Safety and Health. Collaborative activities with industries have continued, such as job fairs, internships, study tours, and seminars. Promotion activities targeting companies’ employment have continued by NPIC, NTTI, and PPI.

<Status of Achievement of the Overall Goal at the Time of Ex-Post Evaluation>

At the time of ex-post evaluation, the Overall Goal has been partially achieved. By 2022, the percentage of graduates of the higher diploma in electricity of the three pilot TVET institutions who were employed or self-employed reached more than 95%, but the percentage decreased in NPIC and PPI in 2023 (Indicator 1). The percentage of NPIC decreased in 2023, because some students continued studying without getting employed. The NTTI data for 2023 was not available. Employer satisfaction with graduates of pilot TVET institutions could not be confirmed in the ex-post evaluation (Indicator 2). None of NPIC, NTTI, or PPI has conducted the satisfaction survey, because of the COVID-19 pandemic, TVET institutions postponed some activities, including the satisfaction survey. The national standard curriculum has been introduced to five regional training centers, not reaching the target (Indicator 3), through the training of trainers (ToT) conducted by the project with the collaboration of the Department of Quality Assurance of the Directorate General of Technical and Vocational Education and Training (DGTVET). In addition, MLVT has stored all the documents on the website of DGTVET on MLVT and distributed the handbook of the Standard Training Package to all TVET institutions under the leadership of MLVT.

<Other Impacts at the Time of Ex-Post Evaluation>

It has direct impacts on not only target institutions but also other 34 TVET schools under MLVT through improving the capacity of instructors, facilities workshops equipped with practical equipment, improving the capacity of the students, and it has indirect impacts to the private companies because they could select the qualified students to work for their companies.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is ③

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results	Source
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¹ ④ : very high, ③ : high, ② : moderately low, ① : low

(Project Purpose) Quality of training for the higher diploma in electricity in TVET institutions under MLVT (pilot institutions) is strengthened.	Indicator 1 80% or more participated students successfully pass the final practice examination.	Status of the Achievement (Status of the Continuation): mostly achieved as planned (continued) (Project Completion) <ul style="list-style-type: none"> 74.6% of the students successfully passed the final practice examination in 2019. (Ex-Post Evaluation) <ul style="list-style-type: none"> In 2024, more than 80% of students successfully passed the final practice examination in NPIC, NTTI, PPI, although the percentage was decreasing until 2023 in NTTI. <table border="1"> <thead> <tr> <th></th> <th>2021</th> <th>2022</th> <th>2023</th> <th>2024</th> </tr> </thead> <tbody> <tr> <td>NPIC</td> <td>94.7%</td> <td>93.7%</td> <td>96.9%</td> <td>94.0%</td> </tr> <tr> <td>NTTI</td> <td>78.5%</td> <td>64.9%</td> <td>59.5%</td> <td>100%</td> </tr> <tr> <td>PPI</td> <td>95.9%</td> <td>97.6%</td> <td>94.1%</td> <td>95.3%</td> </tr> </tbody> </table>		2021	2022	2023	2024	NPIC	94.7%	93.7%	96.9%	94.0%	NTTI	78.5%	64.9%	59.5%	100%	PPI	95.9%	97.6%	94.1%	95.3%	Project Completion Report (PCR), NPIC, NTTI, PPI.
		2021	2022	2023	2024																		
	NPIC	94.7%	93.7%	96.9%	94.0%																		
NTTI	78.5%	64.9%	59.5%	100%																			
PPI	95.9%	97.6%	94.1%	95.3%																			
Indicator 2 Percentage of students who were employed or offered a job at companies through the internship is increased from 39% to 50%.	Status of the Achievement (Status of the Continuation): achieved beyond the plan (not continued) (Project Completion) <ul style="list-style-type: none"> 72.3% of the students were employed or offered a job at companies through the internship in 2019. (Ex-Post Evaluation) <ul style="list-style-type: none"> After the project completion, the percentage of students who were employed or offered a job at companies through the internship was on a decreasing trend. <table border="1"> <thead> <tr> <th></th> <th>2021</th> <th>2022</th> <th>2023</th> <th>2024</th> </tr> </thead> <tbody> <tr> <td>NPIC</td> <td>n.a.</td> <td>n.a.</td> <td>n.a.</td> <td>36.0%</td> </tr> <tr> <td>NTTI</td> <td>80.0%</td> <td>77.3%</td> <td>68.4%</td> <td>n.a.</td> </tr> <tr> <td>PPI</td> <td>52.1%</td> <td>55.8%</td> <td>46.7%</td> <td>51.2%</td> </tr> </tbody> </table> Note: Data from 2021 to 2023 were not available from NPIC because it did not make the survey due to the COVID-19 pandemic.		2021	2022	2023	2024	NPIC	n.a.	n.a.	n.a.	36.0%	NTTI	80.0%	77.3%	68.4%	n.a.	PPI	52.1%	55.8%	46.7%	51.2%	PCR, NPIC, NTTI, PPI.	
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Indicator 3 Satisfaction rates of graduates/students with training for the higher diploma in pilot TVET institutions increase from 3.66 to 4.00 (Out of 5) or higher in practical skills.	Status of the Achievement (Status of the Continuation): achieved beyond the plan (partially continued) (Project Completion) <ul style="list-style-type: none"> The satisfaction rate of graduates/students with training for the higher diploma in pilot TVET institutions was 4.25 in 2019. (Ex-Post Evaluation) <ul style="list-style-type: none"> After the project completion, the satisfaction rates slightly decreased and kept stable in NTTI and PPI. <table border="1"> <thead> <tr> <th></th> <th>2021</th> <th>2022</th> <th>2023</th> <th>2024</th> </tr> </thead> <tbody> <tr> <td>NPIC</td> <td>n.a.</td> <td>n.a.</td> <td>n.a.</td> <td>n.a.</td> </tr> <tr> <td>NTTI</td> <td>4.0</td> <td>4.0</td> <td>4.0</td> <td>4.0</td> </tr> <tr> <td>PPI</td> <td>3.7</td> <td>3.8</td> <td>3.7</td> <td>3.7</td> </tr> </tbody> </table> Note: Data from 2021 to 2024 were not available from NPIC because it did not make the survey due to the COVID-19 pandemic.		2021	2022	2023	2024	NPIC	n.a.	n.a.	n.a.	n.a.	NTTI	4.0	4.0	4.0	4.0	PPI	3.7	3.8	3.7	3.7	PCR, NPIC, NTTI, PPI.	
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NPIC	n.a.	n.a.	n.a.	n.a.																			
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(Overall Goal) Quality of training for the higher diploma in electricity in the TVET institutions under MLVT (nation-wide) is strengthened.	Indicator 1 Percentage of graduates of the higher diploma in electricity of the pilot TVET institutions who are employed/self-employed increases from 84% in 2015 to 95% by 2023.	Status of the Achievement: mostly achieved. (Ex-Post Evaluation) <table border="1"> <thead> <tr> <th></th> <th>2020</th> <th>2021</th> <th>2022</th> <th>2023</th> </tr> </thead> <tbody> <tr> <td>NPIC</td> <td>100%</td> <td>100%</td> <td>100%</td> <td>73.0%</td> </tr> <tr> <td>NTTI</td> <td>94.7%</td> <td>91.6%</td> <td>95.5%</td> <td>n.a.</td> </tr> <tr> <td>PPI</td> <td>89.0%</td> <td>95.0%</td> <td>98.0%</td> <td>94.0%</td> </tr> </tbody> </table>		2020	2021	2022	2023	NPIC	100%	100%	100%	73.0%	NTTI	94.7%	91.6%	95.5%	n.a.	PPI	89.0%	95.0%	98.0%	94.0%	NPIC, NTTI, PPI
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Indicator 2 Satisfaction rates of employers with the graduates of the higher diploma in electricity of the pilot TVET institutions increases from 3.27 in 2016 to 3.60 (Out of 5) or higher in technical skills by 2023.	Status of the Achievement: not verifiable. (Ex-Post Evaluation) <ul style="list-style-type: none"> No data was available, because satisfaction surveys have not been carried out by MLVT or pilot institutions. 	MLVT, NPIC, NTTI, PPI																					
Indicator 3 Number of TVET institutions introducing the national standard curriculum reaches 8 or more by 2023.	Status of the Achievement: partially achieved. (Ex-Post Evaluation) <ul style="list-style-type: none"> The national standard curriculum has been introduced to the five regional training centers: Regional Polytechnic Institute Techo Sen of Battambang, Takeo, Svay Rieng, Siem Reap, and Kampot. 	NPIC, NTTI, PPI																					

3 Efficiency

Both the project cost and the project period slightly exceeded the plan (ratio against the plan: 117% and 124%, respectively). The project cost exceeded the plan due to the combined factors. In addition, the project period exceeded the plan because some activities were delayed due to the temporary budget cuts in JICA headquarters. Another cause of the delay was the COVID-19 pandemic.

	Project Cost (Japanese side only, yen)	Project Period (months)
Plan (ex-ante)	399 million yen	54 months
Actual	466 million yen	67 months

Ratio (%)	117%	124%
Outputs were produced as planned. In the light above, the efficiency of the project is ③.		
4 Sustainability		
<Policy Aspect> Improvement of TVET quality has been prioritized as described in the “Five-Year Master Plan for the Development of Technical and Vocational Education Institutions” (2021-2025) of MLVT.		
<Institutional/Organizational Aspect> MLVT and the pilot TVET institutions have sustained the organizational setting, though there have been some minor changes, to promote the Standard Training Package for the higher diploma in electricity. NPIC, NTTI, and PPI have had 20, 17, and 18 technical instructors, respectively. The Technical Working Group, which was established by the project for promoting the Standard Training Package has been regularly conducted, mainly led by technical instructors. The Industrial Advisory Group, which consists of local companies and industry associations related to the electricity sector, has been upgraded to the Sector Skills Council as a platform for the private sector, MLVT, the Ministry of Education, Youth and Sport, and the Ministry of Economy and Finance, in order to discuss the labor market needs and training packages.		
<Technical Aspect> It can be presumed that the pilot TVET institutions have sustained sufficient techniques to sustain quality training for the higher diploma in electricity, since they have continuously provided training for the higher diploma in electricity based on the Standard Training Package, and have been annually trained as per the up-skilling program.		
<Financial Aspect> NPIC answered in the ex-post evaluation that the financial resource would be likely to be continuously sustained for the standard training package because it is an autonomous institute that can collect tuition from students. Also, NTTI confirmed that it has secured sufficient budget for the standard training package, and they answered that they have given importance to the operation and maintenance of the training equipment. Although the budget data related to the training for the higher diploma in electricity could not be confirmed with PPI and MLVT, considering the status of the training continuity, it can be presumed that PPI has secured budgets to a certain extent to provide the standard training package. On the other hand, MLVT’s budgets have not been sufficient to further conduct ToT for TVET institutions and therefore it has substituted relevant information on the website.		
<Environmental and Social Aspect> No issue on environmental and social aspect has been observed, and it has not been necessary to take any countermeasures.		
<Evaluation Result> In light of the above, slight problems have been observed in terms of the financial aspect of the implementing agency. Therefore, the sustainability of the project effects is ③.		
5 Summary of the Evaluation		
The project achieved the Project Purpose as planned, which was to strengthen the quality of training for the higher diploma in electricity in TVET institutions under MLVT as pilot institutions. As a result of efforts for expansion, the quality of training for the higher diploma in electricity in other TVET institutions in the country has been strengthened, as the national curriculum standards have been diffused to the other five institutions (Overall Goal). Considering all of the above points, this project is evaluated to be highly satisfactory.		

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- It is recommended that MLVT should strengthen collaboration among focal officials of DGTVE and TVET institutions to establish a mechanism to strengthen the relationship between TVET institutions and private companies for the purpose of developing and updating the curriculum and materials to meet the industrial needs. In addition, through this mechanism, it can be expected that TVET institutions can gain knowledge and skills from the private companies, as well as funds for training-related research and development activities.

Lessons Learned for JICA:

- The project promoted the implementing agencies' initiatives through hands-on activities to foster their autonomy and the effects' continuity. Specifically, pilot institutions gained confidence by implementing final practical exams and job fairs through trial and error, and have continued these efforts beyond the project period. Additionally, co-developing training equipment tailored to local needs, together with the instructors, effectively enhanced their instructional capacity. Another notable example is the delivery of paid technical seminars for company employees at the TVET institutions, which helped build mutual understanding between the institutions and the industry sector. These practical and collaborative approaches strengthened both instructional capacity and stakeholder relationships, which can be replicable models for future TVET development.



Practical Exit Examination of Students at NTTI on Feb 2025



ToT at NTTI on July 2025