

Ex-post Evaluation Report 2011-2-2

National Cambodia-Korea Vocational Training School Project

Loan Agreement No.: KHM-2

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Country: Cambodia

The Export-Import Bank of Korea
(Government Agency for the EDCF)

EDCF Evaluation Team
(Evaluated by Korea University of Technology and Education)

CONTENTS

Executive Summary

I. Introduction

- A. Project Background
- B. Project Objective
- C. Project Scope
- D. Evaluation Approach and Methodology

II. Assessment for Each Evaluation Criterion

- A. Relevance
- B. Efficiency
- C. Effectiveness
- D. Impact
- E. Sustainability

III. Lessons Learned and Recommendations

- A. Lessons Learned
- B. Recommendations

Executive Summary

Background

In Cambodia, Technical and Vocational Education and Training (TVET) sector is very important in establishing social infrastructure and the amount of ODA provided to TVET sector has been continuously increased. Although the number of vocational schools supposedly supply skilled workers to industries has been increased along with Government's industrialization policy, the quality of equipment and facilities for practice in those vocational schools was not good enough for the trainees to meet the demand from industries.

At the time when this project was planned, employment rate of graduates from public vocational training schools was decreasing and accordingly the number of freshman enrolment and TVET programs of those vocational schools were diminishing due to the reasons stated above. So this project was aimed to contribute to the development of Cambodian economy and industry by establishing and operating a quality vocational training school to supply skilled work forces to meet the country's industrialization needs.

The National Cambodia-Korea Vocational Training School Project was implemented from 2002 to 2005 with the financial support from EDCF (Economic Development Cooperation Fund) and the established school by the project is currently called National Polytechnic Institute of Cambodia (NPIC). The project has contributed to meet the need for skilled workforces from industries concentrated in Phnom Penh, the capital of Cambodia, and to improve the quality of TVET with positive impact on the economic development of Cambodia.

Performance Assessment

Considering that project was planned and implemented according to the national development plan and education policy of Cambodia and donor's partnership strategy and the objectives and design of the project is appropriate, the project is rated 'highly relevant'. Since the project was completed within the estimated budget although the project period was slightly extended, efficiency of the project is rated as 'efficient' in general. To assess the effectiveness of the project, performance indicators and targets were set and it is analyzed that the project achieved almost all of the targets, so the project is rated 'highly effective' in achieving its intended objectives. The project is estimated to deliver 'highly positive' impact to Cambodia, in the aspect of economic and social development and technology improvement. Considering the status of

freshmen recruitment, number of enrolled students, quality of education program, capacity of faculty, operation and maintenance (O&M) structure, and fiscal status, the project is rated ‘most likely’ sustainable.

Evaluation result by each criterion for the project is presented below and the overall assessment is ‘highly successful.’

Overall Assessment Result

Evaluation Criteria	Weight	Score	Assessment
Relevance	20%	3.75	highly relevant
Efficiency	20%	3.20	efficient
Effectiveness	20%	3.86	highly effective
Impact	20%	4.00	highly positive
Sustainability	20%	3.86	most likely
Overall		3.73	highly successful

Lessons Learned and Recommendations

Lessons Learned

To stabilizing operation of a TVET institute in early stage, government’s strong will to support budget and operation is needed. Also, it is highly required for Project Executing Agency (PEA) to put self-sustaining efforts in establishing a concrete operation plan, acquiring operating knowhow from advanced education institutes etc.

In order to improve the sustainability of a TVET institute, it is important for PEA to secure the adequate capability of operation and maintenance (O&M) of equipment and facilities. For sustainable O&M, it is essential for PEA to establish a systematic O&M plan, to secure the budget, and to keep adequate personnel. For a similar project in the future, it is necessary to exchange sufficient opinions with PEA at the design stage so that it can recognize the importance of O&M and establish organized O&M system by itself.

Regarding development of textbooks for newly established TVET institute, it is important to customize them to fit to local educational environment and the level of students. In order to maximize the use of textbooks to be developed, it is required to closely cooperate with faculty and stakeholders of the partner country in such a way as conducting collaborative research.

Recommendations

Since newly established TVET institute requires continuous investment in terms of human resource and financial support for smooth operation after opening, it is important to set long-term plan including O&M and necessary actions after completion at the design stage. In order to set a comprehensive long-term plan, it can be considered that linking EDCF loan project with grant aid so that the O&M of the project can be continuously supported by grant aid.

In order to strengthen the capacity of NPIC faculty, it is recommended for NPIC to support its instructors to get academic degrees (master and Ph.D.) by utilizing related ODA projects such as Global Korea Scholarship.

For the future TVET school project, it is recommended to design an institute with the concept of university-industry cooperation to have significant synergy effect regarding recruitment of students and faculty, improvement of employment rate, and sharing research facility and human resources.

I. INTRODUCTION

A. PROJECT BACKGROUND

In Cambodia, Technical and Vocational Education and Training (TVET) sector is very important in establishing social infrastructure and the amount of ODA provided to TVET sector has been continuously increased. Although the number of vocational schools supposedly supply skilled workers to industries has been increased along with Government's industrialization policy, the quality of equipment and facilities for practice in those vocational schools was not good enough for the trainees to meet the demand from industries.

Especially for the field of mechanical, electric and electronic engineering, practical training is essential, but quality vocational training was not possible due to lack of equipment which requires huge financial investment. Most schools supplied low level skilled workers with six-month or one-year training, which has barely contributed to industrial development.

At the time when this project was planned, employment rate of graduates from public vocational training schools was decreasing and accordingly the number of freshman enrolment and TVET programs of those vocational schools were diminishing due to the reasons stated above. So this project was aimed to contribute to the development of Cambodian economy and industry by establishing and operating a quality vocational training school to supply skilled work forces to meet the country's industrialization needs.

The National Cambodia-Korea Vocational Training School Project was implemented from 2002 to 2005 with the financial support from EDCF (Economic Development Cooperation Fund) and the established school by the project is currently called National Polytechnic Institute of Cambodia (NPIC). The project has contributed to meet the need for skilled workforces from industries concentrated in Phnom Penh, the capital of Cambodia, and to improve the quality of TVET with positive impact on the economic development of Cambodia.

B. PROJECT OBJECTIVE

The objective of this project was to establish a new vocational training school equipped with quality education facility and equipment (i) to develop human resources through various skills training and career development programs; (ii) to assist in the industry-related needs of companies in Cambodia.

C. PROJECT SCOPE

The main scope of this project includes construction of school buildings, provision of training equipment and facilities, expert dispatch and training, and consulting services.

<Table 1-1> Project Scope

Scopes	Details
1. Construction	<ul style="list-style-type: none">● Construction of main building, lab and dormitory buildings, a cafeteria, and an auditorium
2. Provision of equipment and facilities	<ul style="list-style-type: none">● Training equipment● Building equipment: furniture, office and kitchen equipment, health center, athletic facilities, etc.● Operation facilities: air conditioners, electric facilities, language lab, generator, communication facilities, etc.
3. Expert dispatch and training	<ul style="list-style-type: none">● Expert dispatch: consulting, developing curriculum and teaching materials● Training: Overseas and local training for instructors and staffs
4. Consulting services	<ul style="list-style-type: none">● Supervision of design and construction● Supervision of project implementation, management, etc.
5. Others	<ul style="list-style-type: none">● Establishment of infrastructure and auxiliary facilities in the site

D. EVALUATION APPROACH AND METHODOLOGY

OBJECTIVE OF EVALUATION

The objective of the ex-post evaluation of the project is to attain lessons learned and recommendations from the project for similar EDCF projects to be implemented in the future by assessing the achievement of project compared to planned short-, mid- and long-term goals in view of evaluation criteria (relevance, efficiency, effectiveness, impact and sustainability) at a certain time after the completion of the project.

APPROACH AND METHODOLOGY OF EVALUATION

The evaluation was performed through documentation review, survey, and stakeholder interviews. Reference materials for documentation review are as follows:

- ① Feasibility Study on Establishment of the National CAMBODIA-KOREA Vocational Training School (2001. 08)
- ② Project Appraisal Report (2001. 10)
- ③ Project Completion Report prepared by PEA (2007. 10)
- ④ Project Completion Evaluation (2009. 12)

Evaluation questionnaires were prepared for each beneficiary such as NPIC president, faculty and students, etc. And the questionnaires were sent to the beneficiaries in the preparation period for site survey and their responses were reviewed and utilized for additional inquiries during the site investigation. Site visit was made to identify the output of the project, to collect additional information which was not available from documentation reviews and responses to the questionnaire, and to update related data.

This evaluation was carried out as a collaborative partnership between EDCF and partner country and became the first case of joint evaluation in EDCF. In order to share evaluation results and reflect the opinions of key stakeholders of partner country, EDCF Evaluation Workshop was held on September 22, 2011 at Phnom Penh with 50 delegates from Korea and Cambodia.

II. ASSESSMENT FOR EACH EVALUATION CRITERION

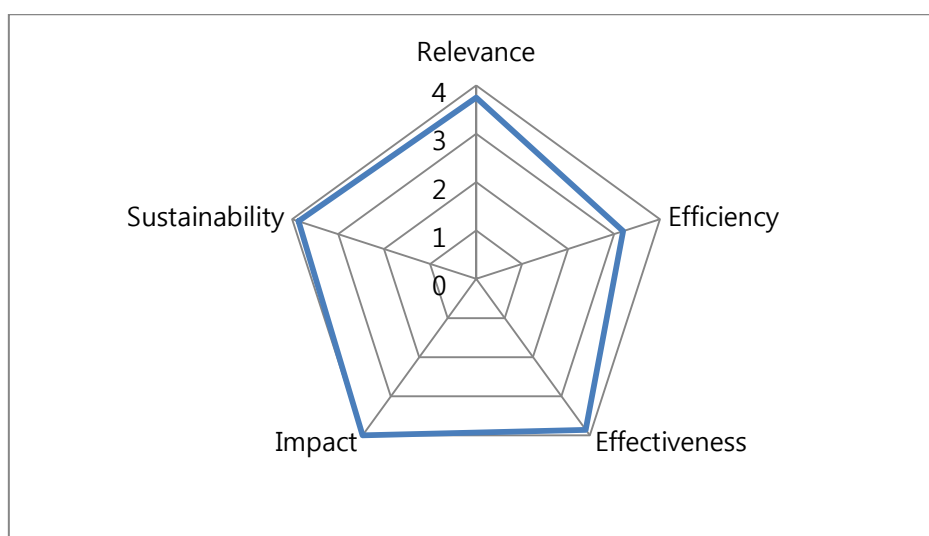
Evaluation of the project summarized in the table below and an overall assessment grade is ‘highly successful.’

<Table 2-1> Overall Assessment¹⁾

Criteria	Results	Descriptions
Relevance	highly relevant (3.75/4.0)	- The project is relevant to the national economic development plan of Cambodia
Efficiency	efficient (3.20/4.0)	- Disbursement was made within the project budget - Implementation took 6 months more than the scheduled period
Effectiveness	highly effective (3.86/4.0)	- The project is estimated to achieve most of planned output, outcome and mid- and long-term objectives.
Impact	highly positive (4.0/4.0)	- The project makes positive impact on development of industry, human resource and community through strengthening higher and TVET education in Cambodia
Sustainability	most likely (3.86/4.0)	- Considering the status of freshmen recruitment, number of enrolled students, quality of education program, capacity of faculty, operation and maintenance (O&M) structure, and fiscal status, the project is rated ‘most likely’ sustainable.
Overall Score	highly successful (3.73/4.0)	

¹⁾ Overall assessment is a weighted average of grades of five evaluation criteria (20% each). The overall assessment grade is judged to be ‘highly successful’ for a score greater than or equal to 3.6, ‘successful’ for less than 3.6 and greater than or equal to 2.6, ‘partly successful’ for less than 2.6 and greater than or equal to 1.6, and ‘unsuccessful’ for less than 1.6.

<Figure 2-1> Distribution map of Overall Assessment grade



A. RELEVANCE

Considering that project was planned and implemented according to the national development plan and education policy of Cambodia and donor's partnership strategy and the objectives and design of the project is appropriate, the project is rated 'highly relevant'.

In order to achieve its Millennium Development Goals (MDGs), Cambodia is executing National Strategic Development Plan (NSDP) to develop its economic development, and the Department of Education is executing Education Strategic Plan (ESP) to realize improvement of quality of education defined in NSDP. In accordance with NSDP, the Department of Labor and Vocational Training is deploying a Strategic Plan, which includes job creation, improvement of working environment, and expansion of social security system and TVET.

According to industry development plan supported by higher education and vocational training, the portion of manufacturing industry of GDP is continuously increasing. After the recent financial crisis manufacturing industry occupies 15% of GDP, which is higher than that of 1990s and it employs 8.5% of total employee.

The demand for skilled work force keeps increasing along with the change in industrial structure of Cambodia. This project is estimated to be consistent with the NSDP, ESP, and the Strategic Plan of Ministry of Labor and Vocational Training in terms of supplying skilled work force.

The components of the project including construction of school buildings, provision of training equipment and facility, expert dispatch and training, and consulting services are estimated to be appropriately designed.

EDCF support mainly focuses on building economic infrastructure, which contributes to economic development of developing countries, such as roads, electricity and communication as well as on building social infrastructure such as health, education and environment to fulfill basic human needs. This project is related to developing social infrastructure by improving education sector, which is consistent with EDCF policy.

B. EFFICIENCY

This project is rated as 'efficient' based on the evaluation of 'project period' and 'project cost.'

The project period (from the date of loan effectiveness to project completion) was planned to be 18 months for construction of school buildings and 24 months for provision of educational equipment and facilities. It actually took 23 months for the former and 30 months for the latter.

The delay has been caused by the construction start-up delay due to the rainy season (from the middle of May to early October) and the shortage of raw material supply and rise of material price resulted from the construction boom of Cambodia (2003) and China (2004) which coincided with the project period. And design changes have been made in educational equipment and facilities in September 2003, which required higher level of power supply. Accordingly construction was delayed by 5 months, negatively affecting the delivery of educational equipment and facilities and other accompanying services to be delayed.

For the project cost, comparison between planned and actual disbursement for each project component shows that total amount disbursed was within the originally planned budget (99.9% of the budget). Since the project was completed within the estimated budget although the project period was slightly extended, efficiency of the project is rated as 'efficient' in general.

C. EFFECTIVENESS

To assess the effectiveness of the project, performance indicators and targets were set and it is analyzed that the project achieved almost all of the targets, so the project is rated 'highly effective' in achieving its intended objectives.

Since its establishment, NPIC has accumulated 769 students (267 technicians and 502 engineers) graduated, and the employment rate of those graduates is currently 87%. Considering the average employment rate of 67.4% (for 2007) in Phnom Penh area, this is significantly high rate. And the satisfaction survey of NPIC faculty and students on school facility, curriculum and educational equipment and facilities shows that the beneficiaries' satisfaction is 85%, which is considered as high.

For the enrolment rate, the number of freshmen enrolled was merely 230 out of enrolment capacity of 690 in the first year of opening and remained below the capacity until 2008 but recently it reached 100%. The shortage of freshmen seemed to have been caused by inconvenient transportation and this problem has been resolved by providing shuttle bus service. 65% of students are from out of Phnom Penh area.

Regarding the number of students, NPIC was originally designed as a two-year college with a capacity of 690 students per grade (1,380 students in total) and it is currently providing both 2-year and 4-year programs. Since its opening in 2005, the number of students kept increasing to reach 1,099 students in the academic year 2010/2011, which is 79% of its capacity.

Operating budget of NPIC in 2011 is 6.7 billion Riel (1,639,745 USD) funded by tuition fee, government subsidy, and profit generating businesses of its own, among which government subsidy occupies 40% of total budget. Although sufficient budget is not secured, the school is striving to raise the budget per student through the operation of various profit generating businesses. A case of major profit generating business includes collection of various registration fees and administration fees for Korean language and Computer tests since NPIC was selected as a local worker sending agency for Employment Permit System (EPS) operated by Human Resources Development Service for Korea.

Cambodia is strengthening higher education to supply high-quality human resources needed for industrial development, especially emphasizing on the provision of TVET opportunities. NPIC, established through this project, has significantly expanded youth's accessibility to high education in Phnom Penh in the field of vocational training. NPIC currently (2010/11) has 1,099 students attending and has been directly contributing to industrial development of local community by supplying well trained workforce.

The objective of this project was to establish a new vocational training school needed for industrial development of Cambodia. This project helped to operate a sound vocational training curriculum by strengthening the capacity of local faculty through

utilizing the Korea's experience accumulated during Korean economic development and by improving the quality of training with the provision of educational equipment and facilities. This project has contributed to improve the quality of higher education of Cambodia and thereby images of Korea. This project is considered that it had contributed to improve friendly relationship between two countries.

D. IMPACT

The project is estimated to deliver 'highly positive' impact to Cambodia, in the aspect of economic and social development and technology improvement.

The project was planned for economic and industrial development through human resource development and is expected to make some indirect economic impact via supplying quality workforce needed for industry development in Phnom Penh area. Economic benefits of the project includes wage increase of NPIC graduates, community development due to the presence of the school, and increase of value added in major industries of Cambodia such as manufacturing and tourism through the supply of professional human resources joining these industries.

Many NPIC graduates are employed by foreign companies in Cambodia such as KTC Cable, Minibea, etc. and their monthly salaries range from 250 to 400 dollars, which is much higher than those of average workers in Cambodia (100 to 150 dollars per month). This shows that the skills and knowledge acquired from NPIC education deliver highly positive impact on economic development.

By establishing NPIC under the harsh environment of low quality vocational training services and infrastructure of Cambodia, it became possible to provide high-quality vocational training in a well-equipped school. 65% of NPIC students are from provinces outside Phnom Penh, so it fulfills demand for higher education in other provinces as well as Phnom Penh. By offering opportunities of education for women, it contributes to nurturing female workforces.

Through training programs held in Korea, the faculty of NPIC was able to acquire relevant knowledge in each subject, teaching method, and capability of operating equipment and facilities provided in the project. Based on modern educational equipment and teaching method, NPIC has been contributed to provide high tech skills to electrical, electronic, mechanical engineering and construction industries. Since NPIC became recognized as a role model of vocational training school, its training methodology and operating knowhow were transferred to other vocational training schools in Cambodia.

The project is estimated to give positive impact on industrial and human resource development of Phnom Penh area through strengthening higher education and to contribute to the local community development. Therefore, the project to establish NPIC, as a model of vocational training school, is considered that it makes strong development impact to Cambodia.

E. SUSTAINABILITY

In the perspective of software such as recruitment of freshmen and registration status of students, quality of curriculum, and effort to build capacity of faculty, the project is rated 'most likely' sustainable. Also, from the perspective of hardware, the supplement and maintenance of educational equipment requiring financial support has been appropriately carried out. Therefore, the project is rated 'most likely' sustainable.

It is important to secure superior faculty for sustainable operation of vocational training institutes. For the academic year of 2009/2010, NPIC had 87 faculties including professors, visiting professors dispatched from Korea, and instructors while there are 938 students in the school. The number of student per professor being entitled 10.8 is appropriate.

NPIC offers 4 year Degree Programs, 2 year Diploma Programs, and 1 year Short Programs and 1,020 class hours are offered annually for Degree and Diploma programs. Its curriculum includes all basic subjects necessary for manufacturing industry of Cambodia and they accord with NPIC characteristics. Class hours including practice are properly designed. Therefore, the project is considered to achieve sustainable educational effect.

Demand for 4 year college education is expected to grow as the number of high school graduates increases due to education policy in Cambodia. Considering preference to 4-year college graduates by local companies in their recruitment, the number of students who wish to attend 4 year colleges such as NPIC is expected to increase so that NPIC seems to have no difficulty in securing sufficient number of freshmen. It was found that there are almost no dropouts among currently registered students, seemingly due to high satisfaction with the quality of facilities and educational services of NPIC.

Operating budget of NPIC for 2011 is 6.7 billion Riels (1,639,745 USD), funded by tuition, government subsidy, and the school's revenue-making businesses. The government subsidy is 2.7 billion Riels (40% of total budget) while annual tuition revenue covers around 400 to 500 thousand dollars (about 30% of total budget)

summing collections of 500 hundred dollars per 4-year program student and of 350 dollars per 2-year program student.

Remaining 30% of the budget is covered by various revenue businesses and scholarship fund raising, etc. A representative case of such businesses is collecting registration and administration fees from Korean language and Computer tests, since NPIC was selected as a local worker sending agency for Employment Permit System (EPS) operated by Human Resources Development Service for Korea. Examples of scholarship support are Prime Minister Hun Sen Scholarship and scholarships funded by neighboring companies such as KTC Cable. Such an entrepreneurial policy of NPIC enhances its financial sustainability.

III. LESSONS LEARNED AND RECOMMENDATIONS

A. LESSONS LEARNED

1. Importance of Stabilizing Operation at the Early Stage

In Cambodia, there have been only a limited number of experts with the knowhow of operating vocational training school, since higher education and vocational training was not very active in the country. Despite this difficult situation, NPIC managed to stabilize the operation from the early stage by inviting faculty and experts with experience through strengthening cooperative networks with domestic and foreign colleges and aid agencies based on active support from the Cambodian government. This shows that, to stabilizing operation of a TVET institute in early stage, government's strong will to support budget and operation is needed. Also, it is highly required for Project Executing Agency (PEA) to put self-sustaining efforts in establishing a concrete operation plan, acquiring operating knowhow from advanced education institutes etc.

2. Need to Establish O&M System by the Partner Country's PEA

In order to improve the sustainability of a TVET institute, it is important for PEA to secure the adequate capability of operation and maintenance (O&M) of equipment and facilities. For sustainable O&M, it is essential for PEA to establish a systematic O&M plan, to secure the budget, and to keep adequate personnel. For a similar project in the future, it is necessary to exchange sufficient opinions with PEA at the design stage so that it can recognize the importance of O&M and establish organized O&M system by itself.

3. Need to Develop Textbooks in Collaboration with the Partner Country

In the most projects of establishing new TVET institutes, development of textbooks applied to the curriculum to be offered is included in the project scopes. While it is not difficult to secure contents from excellent textbooks widely adopted globally, it is important to customize them to fit to local educational environment and the level of students. In order to maximize the use of textbooks to be developed, it is required to cooperate closely with faculty and stakeholders of the partner country in such a way as conducting collaborative research.

B. RECOMMENDATIONS

1. Enhancing Sustainability through Linkage with Grant Aids

While newly established TVET institute requires continuous investment in terms of human resource and financial support for smooth operation after the opening, most developing countries suffer from lack of operation and maintenance capacity and budget. It can be recommended, therefore, to develop and execute a long-term plan spanning from the stage of construction of infrastructure to the stage of O&M. In order to set a comprehensive long-term plan, it can be considered that linking EDCF loan project with grant aid so that the O&M of the project can be continuously supported by grant aid.

2. Strengthening Capacity of Faculty

Securing superior faculty is a necessary condition for the improvement of a TVET institute. As NPIC is aware of that, it is making continuous efforts to strengthen faculty competency as one of seven pillars of strategic development goals to improve the quality of vocational training. In order to strengthen the capacity of NPIC faculty, it is recommended for NPIC to support its instructors to get academic degrees (master and Ph.D.) by utilizing related ODA projects such as Global Korea Scholarship²⁾.

3. Strengthening University-Industry Cooperation

For the future TVET school project, it is recommended to design an institute with the concept of university-industry cooperation to have significant synergy effect regarding recruitment of students and faculty, improvement of employment rate, and sharing research facility and human resources. Through university-industry cooperation, it becomes possible to offer practical training by developing curriculum reflecting industry requirements and thereby enhance the graduates' employment rate. Also it is easier to secure qualified instructors by utilizing academic degree holders working in the companies as instructors. And additional students can be easily secured by offering short-term courses for employees of the companies.

NPIC is located in Phnom Penh Special Economic Zone (PPSEZ) and the location would help NPIC to achieve high employment rate and contribute to local industry development through collaboration with its neighboring companies. Also, in order to strengthen university-industry cooperation, it is recommended to identify the needs for new vocational training from industry and offer and vitalize short-term courses.

²⁾ Global Korea Scholarship: a government-invitation program operated by National Institute for International Education of Korea to provide foreign students with the opportunities to study in Korean undergraduate and graduate schools (numbers of invitation: 100 students for undergraduate and 300 students for graduate programs).