

# National Cambodia-Korea Vocational Training School Project

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

EDCF Operations Evaluation Team  
(Evaluated by Korea Institute for Industrial Economics & Trade)

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## Summary

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### 1. Project overview

Since the implementation of industrialization policy enforced by Cambodian government in 2000, it is presumable that skilled labor force is necessary in certain sectors such as power, electronics, automobile assembly, civil engineering and tourism sectors.

Cambodian government failed to construct appropriate Technical and Vocational Education and Training (TVET) System during these years. Most of vocational training had poor quality and was in the form of short-term training courses. Main reasons for the poor quality of the vocational training include lack/deterioration of facility, inappropriate courses and teaching materials, and incapacity of training instructors;

In case of long-term vocational training program in public institution, majority of courses were focused in law, economics, and accounting whereas only few institutions provided courses in mechanics, electronics, air-conditioner, and construction etc.

Following the Cambodian government's effort to enforce industrialization policies, there has been increasing demand for skilled workers but they have failed to implement effective vocational training program. As a result, graduates of these vocational schools have been suffering from unemployment and therefore enrollment rate in these vocational schools has been decreasing further.

With the conditions mentioned above, Cambodian government and Economic Development Cooperation Fund (EDCF) established National Polytechnic Institute of Cambodia (NPIC) to produce skilled labor in growing industries. Vocational training centers currently provide 2-year community college course and 4-year Bachelor degree courses in mechanics, power, electronics, construction, CAD/CAM.

This project successfully achieved its initial objective of satisfying demand for skilled labor in Cambodia’s industrialization process and formal enlargement of TVET policy. Therefore it had positive impact on decreasing poverty and overall economic development in Cambodia.

## 2. Methods for evaluating Influence of NPIC

### 2.1. Evaluation criteria

5 major criteria recommended by OECD-DAC are relevance, efficiency, effectiveness, impact and sustainability. The table below shows the evaluation criteria used in this project which emphasizes on effectiveness and level of influence.

Criterion	Measuring aspect	Detailed questions	Indicators
effectiveness	training skilled labor	<ul style="list-style-type: none"> <li>■ Has NPIC achieved objective number of enrolled students?</li> </ul>	<NPIC data>
	constructing education environment and capability	<ul style="list-style-type: none"> <li>■ How effectively equipment are used?</li> <li>■ How adequate are the courses and materials? Do they meet the need of labor market?</li> <li>■ Were they able to strengthen their ability?</li> <li>■ How are the satisfaction level of professors/students?</li> </ul>	<Survey and Interview> Professors and students of NPIC
Impact	employment	<ul style="list-style-type: none"> <li>■ What is the employment rate of NPIC graduates?</li> <li>■ Are they employed in the field related to vocational training?</li> </ul>	<NPIC data> <Survey> Graduates
	income	<ul style="list-style-type: none"> <li>■ What is the wage level of graduates?</li> <li>■ How is the income effect in terms of program? / Occupational types?</li> </ul>	<Survey> Graduates
	satisfaction of employer	<ul style="list-style-type: none"> <li>■ Whether employers satisfied with the capability of NPIC graduates?</li> </ul>	<Survey> employer

	Influence level on policy and institutions	■ What are the effects of NPIC's policies?	<Interview> MOLVT manager
	skill instruction	■ Was there skill instruction through professors?	<Survey> Professors
Sustainability	self-reliance	■ Is it a sustainable project? (institutional, administrative, financial, technical sustainability)	<Interview & Survey> Professors and students

## 2.2. Evaluation method

### 1) Literature investigation research

Literature investigation research is based on the interview and survey. Therefore by referring to various domestic/international materials, it will be able to define special context of this project as well as internationally applicable evaluation aspects.

#### A. Analysis on ADB's TVET performance model in Cambodia

We have analyzed TVET supporting project carried by ADB named 'Strengthening Technical and Vocational Education and Training.' This project includes monitoring and evaluation components to construct necessary database needed for evaluation as well as continuous survey on labor and the satisfactory level of employers.

#### B. Analysis of influence level evaluation report on TVET program

There are 2 types of evaluating influence level of TVET program by literature investigation research method. The first type of evaluation is on short-term vocational training courses which includes measuring influence level and evaluation on regular vocational training. The other type focuses on the employment status and performance of currently enrolled student and graduates.

### 2) Meetings with domestic parties

Before site investigation, we have arranged meetings with experts and EDCF parties who were engaged in post evaluation of TVET program in 2011. In this meeting, we have discussed macroscopic aspect such as the performance and results of projects in Cambodia, current trends of labor market, international trends on vocational training in Cambodia, main points and consideration points of evaluation etc.

### **3) Meetings with local parties**

We have visited NPIC and MOLVT to gather information and discussed about main issues of NPIC that were founded through the survey and literature investigation research and its future plan.

### **4) Survey (Professors, enrolled students, graduates of NPIC, employers)**

First, we have conducted a survey of 56 NPIC professors on educational environment, adequacy and applicability of courses and materials in the market, opinions on training program, sharing knowledge and technology with other institutions or co-workers, sustainability of NPIC.

Second, we have conducted a survey of 179 enrolled student in NPIC about purpose of applying to NPIC, satisfactory level of the program (courses, facility, course materials and teaching staffs, plans after graduation, NPIC's level of awareness in community).

Third, we have conducted a follow-up survey of 63 graduates of NPIC to gather information on income, income level of co-workers (high school graduates, graduates from other educational institutions), whether vocational training matches with their current job, whether knowledge and technology they have learned in NPIC is useful in their job, NPIC's level of awareness in the community.

Finally, we have conducted a survey of 21 employers (who employed NPIC graduates) on whether they are satisfied with the ability of NPIC graduates (comparing with other institutions), and awareness of NPIC.

### **5) Interviews on NPIC Professors, students, graduates, employers**

We have conducted an interview with 10 professors who participated in the survey. This group was divided into two groups, professors who participated in the training program organized by Korea and professors who did not participate

We have selected 15 sophomore students from different departments. Interview questions were based on the survey and their plans after graduation.

Also, we have visited various workplaces to conduct interview on NPIC graduates and employers to investigate the ability and income level of NPIC graduates.

## **3. Result**

Evaluation on level of influence covers effectiveness, influence level and sustainability and achievement of medium and long-term projects.

### **3.1. Effectiveness**

In order to measure the effectiveness of this project, we have set enrollment rate, utilization of new courses and materials, utilization of facilities, ability of faculty, and satisfaction level of the institution as an indicator. The result shows that most of indicators have achieved target value therefore the outcome of this project can be assessed as very effective.

#### **1) Student Enrollment**

Currently (2013) there are total 1,628 students enrolled in NPIC (143 female students). Majority of students are enrolled in bachelor degree courses (1,292 students in 9 departments) and 336 students are enrolled in community college level courses. Considering the fact that initial enrollment target was 1,380, current enrollment rate is about 118%. Since its foundation in 2005, the number of enrolled students in NPIC has been continuously increasing and it has already increased by 6.6 times in last 7 years.

## 2) Adequacy and Utilization of vocational facilities and equipment

Equipment provided to NPIC can be said top-level equipment in Cambodia with new technology. However some equipment are not adequate for college level courses and local industrial demand. According to the survey on the utilization of the equipment, 73.2% of faculty, 71.8% of students showed positive response.

## 3) Utilization of courses and course materials and its suitability/applicability in the market

The result of interviews with faculty shows that provided courses and course materials was not suitable for bachelor degree level courses. Therefore most of the courses and course materials were revised after the project. Initially, they have planned 2-year community college level courses but they have additionally established 4 year courses after completion of the project. According to the result of the survey, 64.3% had positive opinion on courses, 53.6% had positive opinion on course materials.

## 4) Strengthening ability of faculty

We have conducted survey with 17 professors who have participated in EDCF program to investigate whether this project has helped to strengthen the ability of the faculty member. 89.5% of them said it was helpful; therefore training program was very effective.

The education level of faculty member has improved greatly. In 2005, faculty member with master's degree or higher degree was only 1.3%, it has increased to 17.4% in 2013.

## 5) Satisfaction rate of faculty and student on NPIC

According to the result of the survey, 90.2% of faculties were satisfied with NPIC, 88.1% of students were satisfied with NPIC. Considering the result that all faculty members are willing to work for NPIC shows positive future of NPIC development.

### **3.2. Impact**

We have measured income, employment rate, satisfaction rate of employers, policy and institutional influence, skill instruction effect to evaluate the influence level of the project. The final result shows that the influence level of this project is very strong.

#### 1) Effect on employment

In 2012/2013, the employment rate of NPIC bachelor degree graduates was 80.58%, community college graduates was 67.13%. Comparing with the other high education TVET graduates, NPIC ranked the second highest employment rate.

It is noteworthy that 81.8% of surveyed graduates were able to find a job which matched with the field of study they were trained. Generally the target employment rate for which related/trained filed is 25% ~ 30%.

#### 2) Effect on wage

The average income of NPIC bachelor degree graduates is \$316.76, community college degree graduates is \$172.76 per month. There is no adequate data to compare income level, but compare to the monthly average income in 2007(Bachelor degree graduates: \$141.74, community college graduates \$115.55) it can be considered very high.

There is greater income effect in 4-year bachelor degree graduates than 2-year community college graduates and income effect also exists in different types of vocational training

In case of electronic engineering, automobile engineering and repairing vocational training showed relatively high income level without considering its special characteristics such as size of the business, industry.

### 3) Satisfaction rate of employers

We have investigated the ability (knowledge, technique, and attitude) of NPIC graduates and their satisfaction rate to the employers. Majority of the employers showed positive response, it rated 3.81 on 5 scales. And 76.2% employers answered that they prefer NPIC graduates than other TVET graduates.

### 4) Political and institutional effect

NPIC's high enrollment rate (118%) contributed to Cambodian government's policy to expand high level education for advanced economy. Considering the fact that only small percentage of student enroll in technical and engineering department, it has high contribution rate.

NPIC has contributed to expansion of formal TVET policy (Which Cambodian government has been emphasizing since 2008 as part of NTDP) by operating bachelor degree courses and community college courses managed by Ministry of Labor, Vocational Training & Youth Rehabilitation

### 5) Skill instruction effect

46.4% (faculty who participated in training program in Korea: 57.9%) said that they have already known about the skills taught in this program in other vocational training institutions or companies. The content of skill instruction was mostly theoretical knowledge (69.2%), practical skills (53.8%), and teaching skills (23.1%)

Skill instruction effect is directly related to strengthening the ability of faculty/teaching staff therefore it is very important task to consider.

#### **4. Lessons and Recommendations**

##### **4.1. Lessons**

##### 1) Success factors of NPIC

###### A. TVET management

With active and strong support of Cambodian government, NPIC project was able to construct cooperative systems with domestic/international universities and organizations. It is also supported by the professors and experts with wide experiences of managing vocational and education training. This project shows the importance of managerial capacities. Cambodian government strongly supported this project in terms of providing practical support like budget spending, labor allocation and their effort to develop their institution by building external relations with other institutions

###### B. Maintaining sustainability by linking with NGO, grant giving institutions

After the termination of EDCF project, NPIC has successfully constructed link with Korean NGO, grant giving institutions and other companies to subsidize weaknesses and limits of local teaching staffs and improve the quality of vocational training.

##### 2) Suggestions for future projects

###### A. Development and localization of educational courses and materials

Vocational institutions must develop educational courses that are suitable for the local industry to meet its demand. Therefore participation of local faculty members and experts from local industries, in the process of planning courses and materials is crucial.

#### B. Importance of Location of the training institution

Training institutions must be located where it is easier for the student/trainees to access. Which means it needs to be located in downtown areas or locations with convenient transportation. Accessibility is very crucial especially for short-term courses.

#### C. Need for performance management of TVET institution

In order to improve quality of NPIC's vocational training, there must be systematic performance management system. Currently, NPIC has been measuring its performance level through student enrollment rate, number of graduates; however it is necessary to pay more attention on NPIC graduates through follow-up survey and employer's satisfaction rate to improve quality of vocational training.

### **4.2. Recommendations**

#### 1) Constructing cooperation system between participating institutions

In order to operate vocational training program, first, they decide the field of study and standard of the trainees, second they develop suitable course plan for the targeted labor and lastly they decide necessary facility, equipment, materials and the content of the subject. Therefore, participating institutions must build cooperational relationship with each other for mutual understanding and development of vocational training management system.

#### 2) Establishment of Center for Excellent TVET

It is necessary for EDCF to transform this model by establishing Center of Excellence of TVET to improve the level of contribution of cooperative countries. The characteristics of Center for Excellent TVET are first; it provides high quality of education that is related to employment, second, training program for faculty and administrators, sharing information on vocational training and resource centers. This type of project model will provide successful example for other TVET institutions to benchmark and it will also create ripple effect of improving vocational training system in cooperative countries

### 3) Strengthening cooperation between training institution and industries

In order to strengthen the relationship between training institution and industries, training institutions must build networks with local industries and operate industry-university collaboration program based on this network. The industry-university collaboration conducted by training institutions consists of education program, research and development project, exchange of human resources and sharing information. The industry-university collaboration programs include various commissioned education, field education, internships and target education.

### 4) Connecting with grant and private organization

Vocational training support projects needs continuous support for providing training materials, maintaining and repairing facilities and equipment even after termination of the project. Therefore, in the early process of planning the vocational training support program, from facility establishment to following up management, they must carefully establish long-term plans and sharing its responsibility with grant giving organizations and private organization will improve effectiveness of the project.