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Ex-Post Evaluation Report on the Program to Enhance the Vocational Training Capacity of Bangladesh

한국국제협력단

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Ex-Post Evaluation Report on the Program to Enhance the Vocational Training Capacity of Bangladesh

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This evaluation study was written by the evaluation team led by Dr. Paek from Sangmyung university. The views expressed in this report do not necessarily reflect KOICA's position.

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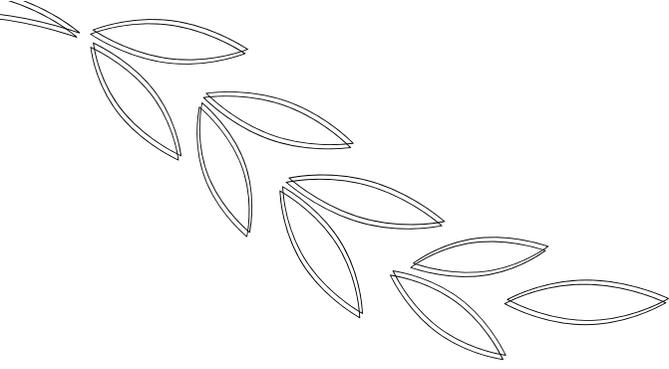
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List of Abbreviations

Abbreviation	Official name
ADB	Asian Development Bank
BIMT	Bangladesh Institute of Marine Technology
B-KTTC	Bangladesh-Korea Technical Training Center
BMET	Bureau of Manpower, Employment and Training
BTEB	Bangladesh Technical Education Board
CBT	Competency-based Training
DTE	Directorate of Technical Education
EC-ILO	European Commission and International Labor Organization
GDP	Gross Domestic Product
HDI	Human Development Index
HSC(Voc)	Higher Secondary Certificate (Vocational)
HSC(BM)	Higher Secondary Certificate (Business Management)
HSC(Tech)	Higher Secondary Certificate (Technical)
IMF	International Monetary Fund
ISC	Industry Skills Council
JICA	Japan International Cooperation Agency
KOICA	Korea International Cooperation Agency
MOE	Ministry of Education
NCSDT	National Council for Skills Development and Training
NPRS	National Poverty Reduction Strategy
NSC	National Skills Certificate
NSDP	National Skills Development Policy
NSS	National Skill Standard
NTVQF	National Technical and Vocational Qualification Framework
OECD	Organization for Economic Cooperation and Development
SSC(Voc)	Secondary School Certificate (Vocational)
TTC	Technical Training Center
TVET	Technical and Vocational Education and Training
UNESCO	United Nations Education, Science, and Cultural Organization
UNICEF	United Nations Children's Fund

Project Site





Summary



Summary



■ 1. Target Project for Ex-post Evaluation

- Project to Enhance the Vocational Training Capacity of Bangladesh



■ 2. Main Results of Evaluation

- This is an ex-post evaluation for the project to enhance the Bangladesh Mirpur Vocational Training Center by KOICA from 2007 to 2009. The purpose of this evaluation is to analyse the outcome and sustainable effect of the project based on the criteria from OECD/DAC including relevance, effectiveness, efficiency, impact and sustainability.
- The primary purpose of this evaluation is to analyze success-factors or failure-factors and to draw lessons for future similar projects. Also, to suggest improvements for project systems in terms of policy, and apply them to grant-type aid policy, and ultimately to contribute to the quality of aid. The main results of the evaluation are as follows.

□ Relevance

(1) Matching with KOICA Aid Policy & Country Aid Strategy

- The project has high relevance with the purpose of KOICA's aid policy for education sector, the 'establishment of a foundation for vocational training'.

(2) Matching with Recipient Country's Development Policy

- The project is timely and matching with Bangladesh's national development policy.

(3) Relevance of Selection of Target Training Center

- The selection of a target training center is appropriate since the center already has the conditions to become 'a model training center', which is the goal of this project.
- The selection of beneficiaries is appropriate considering the low employment rate of graduates of the existing school system at the 10th grade level, and the existence of technical professionals with only a medium level of skill.

(4) Relevance of the project's plan

- The implementing agency for this project, the Bureau of Manpower, Employment and Training (BMET) was not authorized to approve the training program, curriculum, or issuing of certificates, which are actually under the control of BTEB. Nevertheless, BMET and B-KTTC showed their willingness to run an advanced training course on its own. In fact, the operation of this advanced course was delayed for a while due to a

hold up in permission by BTEB, but this approval has now been granted. One of the limitations of the project was that there was not sufficient detailed examination of the recipient country's vocational training system.

- There was not enough discussion about this project with other donor countries or organizations, and as a result the project could not be effectively planned based on the whole vocational technical training policy in Bangladesh.
- The goal of this project was to cultivate skilled technicians. In order to achieve this goal, it was necessary to approach it from a long term perspective since this project would entail a change in a recipient country's vocational technical training system, including obtaining approval from BTEB.
- Due to an insufficient analysis of the labor market in setting up the training course, and due to limited employers' participation, the relationship between training courses and market demand was not closely related.

□ Effectiveness

(1) Evaluation of Output

- This project produced all the planned outputs, such as improvement in the training center's educational environment, development of a new curriculum and teaching materials, a career development program and a master plan for the training center, etc.
- The outputs were evaluated as appropriate for a recipient countries' industrial demand and for cultivating skilled manpower in terms of quality.

(2) Achievement of the Project's Effectiveness

- This project established the Bangladesh-Korea Technical Training Center (B-KTTC), offering a 2-year course of advanced training, but it operated only once and then closed. This limited the active use of the curriculum and teaching

materials developed during this project. Finally B-KTTC received the approval for the HSC program in November 2012, and it is expected to use the developed curriculum and materials from now on.

- Through various programs such as one-year certificate program, short modular courses, workshops for polytechnic teachers, and PPP training programs, the improved facilities and equipment are appropriately used.
- After the completion of the project in 2009, the goal of the project, which was to promote the B-KTTC as an advanced training center, was delayed because it involved a change in the Technical and Vocational Education and Training (TVET) system. Eventually B-KTTC received the approval for an advanced course in November 2012, so it is possible to run the HSC course.

□ Efficiency

(1) The Efficiency of Input Resources

- During the project, the scheduled resources such as time, budget and man-power were carried out well in most aspects.

(2) The Efficiency of the Allocation of Resources

- As a way to analyze the efficiency of the allocation of resources, the evaluation team compared the amount allocated for "expert consultation" for this project, with the case of ADB's Skills Development Project, and the result was, in this project, there was a higher number of engineering experts than policy experts.

□ Evaluation of Impact

(1) Quality and Usefulness of the Training

- The 2-year advanced training program was stopped after a one-time operation and it will resume in 2013. Since curriculum and qualification for students changed, it is difficult to measure the impact by comparing trained students before and after. Even though limited, B-KTTC graduates' employers evaluated skills provided by the training center as very useful.

(2) Economic Impact of the Project

- Since this project was to improve and consolidate the vocational training center, we compared the present costs and benefits and the change of costs and benefits. The result shows that the expected benefits from this project was very high compared to the invested costs, which means the economic feasibility is high.

□ Evaluation of Sustainability

(1) Exit Strategy

- It is evaluated that sustainability is secured because of KOICA's exit policies after the project such as a volunteer program, and appropriate investment of resources from Bangladesh, will ensure the continued operation of the training center.

(2) Project Effect and Sustainability

- B-KTTC submitted suggestions for advanced training course, 'HSC (Tech) course'

to BTEB and gained the approval in November 2012, which indicates legal sustainability.

- The National Skills Development Policy (NSDP) which the Bangladesh government recently adopted will have a positive influence on B-KTTC.
- From the financial standpoint, the Bangladesh government's financial support for B-KTTC will keep increasing, which elevates sustainability in terms of financial security.
- From the technical standpoint, teachers of B-KTTC learned how to use and maintain equipment, and currently KOICA volunteers are sent to train them. All these things will have a positive impact on technical sustainability for this project.

Gender

- It is hard to find evidence of females' participation in the engineering trade from the beginning of the project. This may be due to Bangladesh's social and cultural characteristics, and the fact that there is a separate TTC for women: Mirpur Mohila TTC.

Environment

- Environmental safety was considered and enough discussion on this issue was done during the project.



3. Recommendations

□ Enhancement of Feasibility Study

- For the effectiveness of a vocational training center project, the feasibility study's role becomes critical. In the feasibility study for this project, it did not show sufficient analysis of TVET. In future feasibility studies, it is necessary to analyze the main issues and problems of TVET in partner countries and suggestions should be made as to how these problems may be resolved. This approach is especially important where a shift of paradigm from project based support to program based support is being made. Therefore, a more effective feasibility study is strongly recommended.

□ Expansion of Experts Participation in the Vocational Training System

- In order to improve and enhance the recipient country's training system, experts' participation was crucial. Policy experts should actively participate in the project, besides trade experts.
- It is recommended that participation of policy experts in the vocational training system should be increased from the beginning stage of the project. These experts can analyse the recipient country's labor market and vocational training system and eventually they can make the project more effective by discussing policy with various interested parties.

□ Shift to Establishment of "Center of Excellence for TVET"

- It is recommended that future projects be more focused on the establishment of Centers of Excellence for TVET, in order to better enhance the development of the recipient country's vocational training system. Recently other advanced

- donor agencies are establishing a "Center of Excellence for TVET", rather than upgrading training center to high level institute, and it is used as a benchmark for other TVET centers. One of the characteristics is to provide high quality training related to employment and the demands of industry, and to do additional functions relating to cooperation with the existing TVET system.
- Provision of a high quality education should include the overall enhancement of the training center, such as the development of a curriculum which adequately reflects the labor market demands. Also, improvement of teacher capabilities, training facilities and equipment, and management abilities are important elements for the enhancement of the center's capacity. Additional functions should include workshops for teachers and managers, research programs and networking of vocational education training stakeholders. These additional functions can increase the impact of the project on the development of the recipient country's vocational training system.



Evaluation Overview



I

Evaluation Overview



A. Background

- Since education is the basis for socio-economic development, the importance of education has been emphasized in cooperative development, thus donor country's support for education has been consistently high. During the period from 2000 to 2010 the educational portion of the aid from OECD/DAC is 8.22% on average.
- After international society decided on a decrease in the level of poverty as the development goal, and the generalization of elementary education, big progress has been made in the generalization of elementary education. According to the report of the Asian Development Bank(ADB) 2008, many donor and recipient countries made great efforts in improving elementary education, so the enrollment rate of elementary schools was 88.8% in 2008 up from the rate of 79.9% in 1991.
- From 2007, the positive outcome of the generalization of elementary education has been visible, therefore there was a widespread demand for opportunities in higher education, and currently the support for vocational training is a growing trend.
- In Korean grant-type aid, the portion for education is very high. Among the total KOICA budget from 2001 to 2010, the educational support fund including

all kinds of aid (project, invitational training, dispatch of experts, dispatch of volunteers, NGO, material support, emergency assistance, etc) was fifty one billion nine hundred million won, or 22% of the total KOICA fund.

- KOICA was established in 1991 and supported a total of 340 million won for vocational training, and every year the aid has been increased to a total of over 10 billion won in 2000. From 2007, this support has been over 15 billion won, and increased to 19.5 billion won in 2010.
- As for the regional size of education, until 2003 half of the total aid was focused on Asia. Recently it shows a decreasing trend but it is still high (from 2001 to 2008 the aid for Asia was 36.9%).
- Up to now, Korea has evaluated that it made a contribution to the development of the recipient countries through technical manpower corresponding to the appropriate industrial field. However, the current aid trend has changed into program aid, and the advanced donor organizations' vocational training cooperative development is in the form of integrative TVET, so it is a suitable time for reevaluation of vocational training projects.
- 'The project to enhance the Mirpur vocational training center capacity of Bangladesh' was a pilot project. The results of this pilot project should be analyzed objectively, and the pros and cons from the results should be applied to planning and operating of future similar projects to make them more effective and successful.



B. Purpose of Evaluation

- This is for the ex-post evaluation for the project to enhance the vocational capacity of Bangladesh. The results and effects of this project will be evaluated based on relevance, efficiency, effectiveness, impact, and sustainability, which are criteria provided by OECD/DAC.
- This evaluation is to find out the ultimate contribution to the development of Bangladesh technical professionals. This will be through verifying the successful achievement of each stage compared to the scheduled goals for those stages (Performance Evaluation).
- Also, by analyzing each process involving planning and execution of the project, the evaluation team will grasp the role of the implementation system and its limitations, and determine if the project system influenced positively or negatively for the planned effects (Process Evaluation).
- From the performance and process evaluation, the evaluation team will analyze the cause of success or failure and draw lessons useful for future similar projects. In addition, it can provide suggestions to apply to the future KOICA grant-type aid policy, which will result in a contribution to an increase in quality of Korean ODA.



C. Target Project for Ex-post Evaluation

1) Overview of the Project

- (1) name of the project: Project to enhance the vocational training capacity of Bangladesh
- (2) period/scale: 2007-2009(3 years)/four hundred million dollars
- (3) target area: Mirpur, Dhaka Bangladesh Vocational Training Center
 - * Mirpur Vocational Training Center reopened as Bangladesh-Korea Technical Training Center (B-KTTC) after the completion of the project.

(4) beneficiaries

- B-KTTC managers, teachers, students
- Bangladesh Bureau of Manpower, Employment and Training (BMET)
- local enterprises

(5) purpose

- Improvement of the outdated Mirpur vocational training center and introduction of Korean vocational training techniques and fostering skilled workers.
- Revising the school system of the Mirpur vocational training center so that the model training center provides the highest quality of training and ultimately elevating the condition and quality of Bangladesh technical education.
- Introduction of the advanced Korean vocational training techniques by invitational training and the dispatch of experts.
- Intensifying manageability of Bangladesh vocational training program.

- Supporting the recipient government's policy by introducing projects complying with the Bangladesh government's Poverty Reduction Strategy Paper (PRSP).

(6) Background

- Since Bangladesh lacks natural resources but has abundant workforce, human resources development is emphasized but overall educational standard is low.
- The quality of Technical and Vocational Education and Training (TVET) is very low, which is caused by the lack of high quality TVET instructors, outdated training facilities and equipment following difficulty of practical training, low relationship with industries, and curriculum which does not meet the demand of industries.
- Through this project, the facilities, equipment and training environment should be improved, and the training ability should be reinforced so that they establish the basis for vocational training and cultivate skilled workers to contribute to the development of the local economy.

2) Process Details of the Project

- October, 2005 receipt of project proposal (11 vocational training centers / \$1,920,000)
- January, 2006 preliminary confirmation of the project
- June, 2006 receipt of revised project proposal (4 vocational training centers / \$2,980,000)
- August, 2006 feasibility study
- March, 2007 agreement for the project, R/D(2007.3.8)
- May, 2007 increase of the project budget(\$300 million->\$400 million)
- June, 2007 revision of R/D, exchange of agreement letters between governments

- August, 2007 selection of PMC agency
- August, 2007 dispatch of trade experts, 1 operation expert(3 months)
- September, 2007 selection of on-site building consulting agency
- October, 2007 selection of equipment provider
- November, 2007 inviting trainees (managers and teachers)
- December, 2007 start construction for improving facilities
- December, 2007 shipping of equipment
- February, 2008 dispatch chief expert (1 year)
- March, 2008 2nd dispatch of trade experts(6 months) (installations of equipment, consulting, development of teaching material, teacher training, etc)
- April, 2008 completion of facility improvement and installation of equipment
- July, 2008 interim evaluation
- July, 2009 reopening of B-KTTC
- December, 2009 completion of project
- October, 2010 end-of-project evaluation

3) Project Scope

<Table 1-1> Scope of the Project to Enhance the Vocational Capacity of Bangladesh

name of the project	Korean	방글라데시 국가 직업훈련 역량 강화사업
	English	Project to Enhance the Vocational Training Capacity of Bangladesh
division	content	
purpose	○ improvement of Mirpur vocational training center and cultivation of skilled manpower by introducing Korean vocational training techniques	
target area	○ Dhaka Bangladesh	
beneficiary	○ trainees, training teachers, managers, industry, etc	
period/scale	○ 2007~2009(3 years)/\$400 million	

<Table 1-1> continued

division	content		
categories	Korea	improvement of facilities (\$70 million)	<ul style="list-style-type: none"> ○ total floor area : approximately 7,500m - practice building ground-floor : 3,800 - lecture & admin building four-floor : 3,700 design, local consulting cost, etc
		dispatch of expert (\$89.5 million)	<ul style="list-style-type: none"> ○ 6 trade technical support and management total 7 people 45M/M - 1st dispatch :1person/3 months - 2nd dispatch <ul style="list-style-type: none"> • chief expert : 1 person/12 months • technical expert : 5 people/6 month
		equipment (\$200 million)	○ equipment for 6 trade and equipment for computer laboratory
		inviting trainee (\$30.5 million)	<ul style="list-style-type: none"> ○ manager course: 5 people/2 weeks ○ trainer course: 16 people/3 month(\$38.5 million)
		miscellaneous (\$10 million)	<ul style="list-style-type: none"> ○ feasibility study, implementation survey and miscellaneous allowances ○ development of curriculum & teaching material ○ equipment and materials, etc
	Bangladesh	<ul style="list-style-type: none"> ○ construction of basic infrastructure for vocational center ○ providing of information relating to the project ○ support admin. & auxiliary personnel 	
expected effect	Korea	○ enhancement of friendly relationship between both countries and technical cooperation	
	Bangladesh	<ul style="list-style-type: none"> ○ development of target area and related industry and economy ○ cultivation of skilled manpower and creation of jobs 	
implementing agency	Korea	○ Korea International Cooperation Agency(KOICA) / Korea University of Technology & Education(PMC)	
	Bangladesh	○ project coordination division : bureau of manpower, employment & training (BMET : Bureau of Manpower, Employment & Training)	



Evaluation Items & Method



II

Evaluation Items & Method



A. Evaluation Items

1) Evaluation Standard and Items

- Relevance is a standard of how the donor country's aid policy is considered to be beneficial to the recipient country's development demand, and the selection process and its relevance with project inputs.
- Efficiency is a standard by which input resources are used to maximize benefit.
- Effectiveness is a standard by which the project achieved its expected outcomes based on a logical framework.
- Impact is a standard to measure the impact created from this project, negatively or positively and intended or unintended. In a narrow term, it means how the outcomes of the project have impacted on the life of beneficiaries in all aspects, locally, socially, economically, environmentally and culturally.
- Sustainability means that, after the completion of the project, how long the positive impact is sustained. This is the standard to measure the consistency of changes and positive influences from the project.
- The issue of gender mainstreaming and environmental impact, should include whether or not these factors were considered during the entire project cycle of planning, implementation and evaluation.

<Table 2-1> Evaluation Items for the project to enhance the vocational capacity of Bangladesh

section	standard	evaluation items	remarks
evalua-tion	process		
	relevance	<ul style="list-style-type: none"> • related to Korea's aid policy? • related to the recipient country's development policy? • selection of target area and beneficiaries appropriate? • project plan appropriate? 	literature study & interview
	efficiency	<ul style="list-style-type: none"> • completed within the scheduled time and budget? • the materials and manpower timely and maximized in effect and with minimized cost? 	literature study & interview
	sustainabi-lity	<ul style="list-style-type: none"> • appropriate exit strategy? • any agreement with recipient country's budget and manpower input? 	literature study & interview
	consideration of gender	<ul style="list-style-type: none"> • any consideration on gender equality from the beginning of the project? • have gender-related data of the beneficiaries? 	literature study & interview
	consideration of environ-ment	<ul style="list-style-type: none"> • any anti-environmental problems during the process? • appropriate suggestions or corrective action? 	field study
evalua-tion	perform-ance		
	Outputs	<ul style="list-style-type: none"> • facilities and equipment appropriately purchased? • dispatch experts and invitational training are appropriately performed? • curriculum and materials developed appropriately for newly opened 6 trades? • completed the master plan for the operation of training center? 	field study
	Outcome	<ul style="list-style-type: none"> • accomplish the goal in terms of the number of trainee enrollments and graduates ? • use developed curriculum and teaching materials? • use center facilities and equipment? • teacher's ability intensified? 	field study
	Impact	<ul style="list-style-type: none"> • quality and usefulness provided by the center superior to other centers? • any economic impact? 	field survey
	Sustaina-bility	<ul style="list-style-type: none"> • on the part of beneficiary, manpower and budget secured after the completion of the project? • what could be the policy and technical factors to support sustainability? 	field study
	Gender	<ul style="list-style-type: none"> • any influence on gender or gender equality (intended or unintended)? 	field study
	Environ-ment	<ul style="list-style-type: none"> • any cause of anti- or friendly-environmental factors (intended or unintended)? 	field study



B. Evaluation Method

- The evaluation team makes use of the following qualitative methods such as literature study, in-depth interviews, focus group discussions, and quantitative methods such as surveys.

1) literature study

- Since a literature study can be the basis for interviews and surveys, we referred to and made use of various domestic and international materials to find out the context and evaluation items widely used internationally for a vocational training project.
- The target documents for literature study include not only feasibility study reports, reports on implementation surveys, reports from the PMC, reports on expert dispatch, training programs, interim evaluation reports, end-of-project evaluation reports and any documents related to the project and also Bangladesh national development policy, vocational training policy, various indices for economy and labor, and other reports provided by donor countries.

<Table 2-2> List of Literature study

related reports on the target project
<ul style="list-style-type: none">• Experts' report on the project to enhance the vocational training capacity of Bangladesh• Feasibility study on the project to enhance the vocational training capacity of Bangladesh• Implementation survey on the project to enhance the vocational training capacity of Bangladesh• presentation on the project to enhance the vocational training capacity of Bangladesh• Detailed plans for the project to enhance the vocational training capacity of Bangladesh• End-of-project evaluation report on the enhancement of Bangladesh Mirpur vocational training center• PMC's final report on the project to enhance the vocational training capacity of Bangladesh

<Table 2-2> continued

documents related to Bangladesh vocational training
<ul style="list-style-type: none"> • Bangladesh Economic Review, 2010 • Bangladesh Skills Development Policy, 2011 • Poverty Reduction Strategy Plan Report, 2005 • National Education Policy, 2010 • Request for Project Aid (Project Proposal (BMET) • Islam, Nural (2012). Skilled labour migration and international recognition of TVET qualifications: The case of Bangladesh, BMET, People's Republic of Bangladesh. • Maruque Ahmed, Technical and Vocational Education and Training-Curricula Reform Demand in Bangladesh
documents from other vocational training support agencies
<ul style="list-style-type: none"> • A National Technical and Vocational Qualification Framework for Bangladesh (EC-ILO, 2009) • Education for All Mid-decade Assessment 2007 (UNICEF, 2007) • Education for All in Bangladesh : Where Does Bangladesh Stand in Achieving the EFA Goals by 2015?(World Bank, 2008) • Ex Post Evaluation Report : High Level Technician Training Project at the Senegal-Japan Vocational training Center (JICA, 2007) • The Ex-post Evaluation Study for the Technical and Vocational Education and Training Improvement Project at Technical High Schools in Jamaica (JICA, 2005). • HDI Index 2011 (UNDP, 2011) • Learning for Job Opportunities : An Assessment of the Vocational Education and Training in Bangladesh (World Bank, 2007) • Skills Development Project in Bangladesh (ADB, 2008). • The Millenium Development Goals Bangladesh Progress Report (UNDP, 2011)
miscellaneous references
<ul style="list-style-type: none"> • websites of OECD, World Bank, ADB, UNESCO • websites of Ministry of Foreign Affairs, KOICA, export-import band • Ministry of Education Bangladesh • Technical Education Board Bangladesh • Bureau of Manpower, Employment and Training Bangladesh • National Statistics Office Bangladesh

2) Interview with Domestic Stakeholders

- Interviews with domestic parties concerned have been done in order to collect opinions from all walks of life related to this project, in Korea. The interviews mainly focused on the relationship of the project with Korea ODA policy, KOICA's achievement, and agreement process with interested parties, relationship

with previous projects, etc. Interviewees were people from KOICA, PMC, and experts of the dispatch and training project.

3) Interview with On-Site Stakeholders

- Interviews of on-site concerned parties have been done mainly to find out opinions on the part of Bangladesh and compared with the results of domestic concerned parties. Interviewees included project partners in Bangladesh.
- On-site concerned parties were not only BMET relating to B-KTTC but also Bangladesh Technical Education Board (BTEB), Bangladesh-German Technical Training Center (B-GTTC¹), so that we tried to analyze the project from various kinds of perspectives.

4) Interview with Other Donor Agencies

- From the interview with Lee Jung-geun, the team leader of the 'Skills Development Project' conducted by ADB in Bangladesh, we tried to find out the trend of the Bangladesh vocational training system, cooperation and adjustment with donor country's agency and issues and problems.

5) Survey of B-KTTC Teachers and Students

- The interviews were done to supplement surveys of teachers of B-KTTC (47 out of 63 teachers) and 187 students of short courses (96 in 6-month courses and 91 in 1-year courses)²) and the purpose of these interviews was to shed light on the effectiveness of the training.

1) B-GTTC, a vocational training center supported by Germany in Mirpur, run 2-year regular course like SSC and short course

2) The number of enrolled students for the 1-year course was 216, and for the 6-month course was 405 in September, 2012.

6) Focused Group of Graduates and Employers

- Graduates who graduated from the training center after the 2-year regular or short course during the execution of the project and had jobs, and their employers were interviewed. For graduates, the focus of the interviews was how effective the training center education was for employers, how was the recognition of B-KTTC and how was employers satisfaction about the process of hiring graduates from the training center.

<Table 2-3> Study items based on Evaluation Method

evaluation method		target	Study items
literature study		reports related to the project	overall trend of project
interview	Korea	PMC, KOICA in charge, end-of-project evaluation team	confirm planning process & input details understanding situation of B-KTTC when completing
	local	BMET, BTEB B-KTTC coordinator & teacher B-GTTC coordinator ADB Project team leader	evaluation of project strengths & weakness of B-KTTC trend of TVET system reformation
survey		B-KTTC students (187)	appropriateness of curriculum trainees' satisfaction
		B-KTTC teachers (47)	satisfaction of consolidation & center
focused group interview (FGI)		graduates (16)	effectiveness of B-KTTC on the working area
		employers (2)	satisfaction of B-KTTC graduates

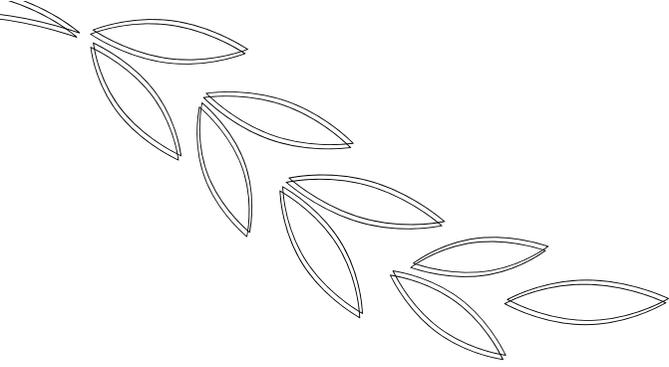


■ C. Limitations of Evaluation

- In order to analyze the effectiveness of the project, it was necessary to compare before and after B-KTTC for entering students, graduates, and job

situations. However, due to the shift from a secondary school course (SSC), which targets 8th-grade graduates, to a high school course (HSC) which targets 10th-grade students, it was difficult to make an appropriate comparison. In addition, there was only a one-time recruitment during 2009-2010.

- It might be better to compare this project with other vocational training centers for a horizontal comparison, but there does not exist a comparable curriculum and educational center in Bangladesh.
- In order to evaluate the quality of the training, it is necessary to analyze the usefulness for their actual jobs of B-KTTC graduates' knowledge and skills obtained during B-KTTC training. However, because of the difficulty in contacting and finding out information about all 61 graduates, it was hard to conduct survey on them. Instead, interviews with some of the graduates was done on the usefulness of the training in the B-KTTC.
- In order to evaluate if the graduates have capability which is needed by industry, employers' opinions were very important. However, because of the lack of management of graduates and limited relations between the center and the industry, it was hard to review a sample of employers, which resulted in an insufficient examination.]



Results of Ex-Post Evaluation



III

Results of Ex-Post Evaluation



A. Relevance

- Relevance evaluation is a process evaluation to determine if the project was based on the donor country's policy and the recipient country's development needs.
- In order to carry out a relevance evaluation, it is necessary to measure how this project met the recipient country's development policy considering related interested parties' environmental conditions and systems and to make sure that the project took into account the local context so that it produced maximum effective development cooperation.
- Accordingly, this evaluation started with a relevance evaluation of KOICA's aid policy and Bangladesh national development policy, and analyzed how much this project considered the local industry's environments and systems.

1) Relevance with KOICA Aid Policy

- In 「Foreign Aid Mid-Range Strategy (2008-2010)」, KOICA stipulated that the direction of education aid focuses on (1) manpower cultivation, facilities for manpower resources development, (2) basic education in Africa, vocational training in Asia and Latin America.

- A second goal of KOICA aid strategy for education is to establish a basis for vocational training, and to achieve this goal it provides detailed objects including development of high skilled manpower, supplying high quality training, and a certification system.

<Table 3-1> Trend of KOICA Project

[Goal 2] Basis Establishment of Vocational Training	
	<ul style="list-style-type: none"> • cultivating manpower needed for the development of local industry through vocational training. • individual employment promotion. • contribution to a decrease of poverty and an increase in income.
<Target 4> cultivating skilled manpower	<ul style="list-style-type: none"> • selection of prior training area • building training center based on students access • facility & equipment expansion appropriate for local situation to develop advanced skilled manpower • opportunity expansion for women & low-income vocational training
<Target 5> providing high quality training	<ul style="list-style-type: none"> • development of curriculum & teaching materials for effective education • establishment of basic management plan for training center • development of employment information system • guidance for career direction • establishment of teacher training institute • opportunity expansion for women & low-income vocational training
<Target 6> qualification system	<ul style="list-style-type: none"> • establishment of regulations for national qualifying exam • qualification system • establishment of job standard and smooth supply of human resources • practice of qualification system and systematic maintenance • development of item pool system and practice of qualifying exam based on CBT

- Project to enhance the vocational capacity of Bangladesh is to improve the outdated facilities of the center and introduce vocational training techniques so that the center raises superior skilled human resources to meet the demands of industry.
- The vocational training center improvement project has a high level of relationship with KOICA aid policy in that this project provides a high quality of training and skillful manpower.

2) Relevance with the recipient Country's National Development Policy

- Since Bangladesh has insufficient natural resources but abundant human resources, the development of human resources is a critical factor for their national development plan.
- In 2005 the Bangladesh government declared a “National Strategy for Accelerated Poverty Reduction” and set the goals of economic development for the poor, and development of human resources by 2015.
- PRSP suggests 4 main strategies, including employment promotion and educational investment for the development of human resources.
 - PRSP points out the high unemployment rate of Bangladesh and brings out the question that it is difficult to raise the employment rate under the current vocational training system since the current vocational training system focuses on the providers who do not take into consideration the demands of industries.
 - In order to decrease the high unemployment rate, it emphasizes an increase in the number of trainees and the importance of a high level of skilled manpower.
 - Recently the sudden increase in overseas employment, especially to Middle Eastern countries, can play an important role in Bangladesh economic development, so vocational training becomes one of the major government policies. Consequently PRSP plans to expand TVET students currently at 5% to 20% by 2015.
- Since Bangladesh has abundant human resources and lacks skilled manpower, and these factors hinder the national long-term development, KOICA's vocational training support meets Bangladesh development needs and it's National Poverty Reduction Strategy

3) Relevance of Selection of Target Area and Beneficiaries

- The selection of the target beneficiaries is to find out the most needy area and input the appropriate assistance.
- KOICA examined the requests from the Bangladesh government and decided to effectively support them to reach the project's goals.
- The Bangladesh government requested support to improve 4 training center's educational environments (Program for Effective Maintenance of Vocational Training Center in Bangladesh). The requested assistance included supplying necessary equipment, inviting trainees, expert dispatch, development of teaching materials and improvement of training centers.

<Table 3-2> Requests for Aid

	area	supporting division	budget(USD)
1	Mirpur Vocational Training Center: area : Dhaka	Auto CAD 2. Computer 3. Electronics 4. Refrigeration & Air-conditioning 5. Machine Tools Operation	750,000
2	Bangladesh-German Vocational Training Center area : Dhaka	1. Auto CAD 2. Computer 3. Electronics 4. Refrigeration & Air-conditioning 5. Machine Tools Operation	750,000
3	Chittagong Vocational Training Center area : Chittagong	1. Auto CAD 2. Computer 3. Electronics 4. Refrigeration & Air-conditioning 5. Machine Tools Operation	750,000
4	Bangladesh Institute of Marine Technology area : Narayanganj	Welding & Fabrication 2. Diesel Mechanics	743,000
cost			total:2,997,000

<Table 3-2> continued

area	supporting division	budget(USD)
division	support content	
remodelling facilities	4 centers each center 87,500	350,000
supply equipment	7 types, supply 4 center equipment	2,127,000
invitational training	10 manager 15days, 28 teachers (7different types 4people) 3months training	270,000
expert dispatch	7 people for 6 months	250,000

- Although the recipient country requested to support 4 training centers, during the pilot survey altogether 5 centers were examined and 1 center was selected as the 'model training center'. Mirpur training center was finally selected for the project.

<Table 3-3> Criteria for the Selection of Mirpur Center for the Project

1. high access since it is located near Dhaka, the capital city
2. the biggest size among Technical Training Centers (TTC)
3. facilities and conditions appropriate for various technical divisions
4. obtained budget from the Bangladesh government
5. many experienced teachers

Source: Feasibility study on the project to enhance the vocational training capacity of Bangladesh, p. 32.

- The selection for the project was appropriate since it was to run as a model training center with all the conditions.
- The first beneficiaries were students who were 10th grade graduates (SSC holders). Considering that 10th grade graduates (Secondary School Certificate, SSC) had low employment rates, and the demand for intermediate skilled manpower, the selection of beneficiaries was appropriate.

4) Relevance of Project Plan

(1) Participation and Role of Other Donor Countries

- Bangladesh TVET system has separate systems controlled by 11 departments and agencies and the ministry of education (BTEB) is in charge of the TVET system.
- BMET, Bangladesh implementing agency, was established by both the department of labor & employment and overseas employment and controls Bangladesh Institute of Marine Technology (BIMT) and 27 TTC³⁾.

<Table 3-4> BTEB & BMET's Role and Responsibility for TVET

Bangladesh Technical Education Board (BTEB)	<ul style="list-style-type: none"> ■ responsible for curriculum and related issues ■ criteria for entrance and conditions for transfer ■ development of teaching materials ■ award certificate to TVET completers ■ authority of accreditation for diploma and certificate program
Bureau of Manpower, Employment & Training (BMET)	<ul style="list-style-type: none"> ■ support vocational and technical training center ■ design & implement of human resources development program ■ operation of permanent, temporary position & special training course ■ supervising and control of manpower capacity

- This project is to establish an advanced technical training center as a pilot model. In other words, since the goal of this project is to upgrade this center by reorganizing the engineering department and cultivating skilled technicians, the role of BTEB is very important.
- BTEB approves and supervises educational institutes which develop and practice the vocational education curriculum. As a result, in order for Mirpur training center to qualify for the exam for the Higher Secondary Certificate Vocational(HSC, Voc), BTEB's approval is necessary.

3) In 2012 currently it operates BIMT which offer one diploma course and 39 Technical Training Centers (TTC).

- BMET's limited authority and responsibilities: BMET can not exercise TTC's curriculum autonomy, and it is very limited to authorize a training center and confer graduates certificates.

(2) Balance with Other Donor Countries

- Since development assistance agencies are very interested in TVET, aid channels are very active. For the harmony of aid, donor countries organized a donor coordination committee within local consultative groups. In 2007, the Committee included ADB, Australian Agency for International Development (AUSAID), Canada International Development Agency(CIDA), European Commission(EC), German International Cooperation(GIZ), International Labor Organization(ILO), World Bank, KOICA, Japan International Cooperation Agency(JICA), United States Agency for International Development(USAID), International Development Bank(IDB).⁴⁾
- Although KOICA participated in the Donor Coordinating Committee, due to the absence of a sector expert in the Bangladesh office, it is difficult to keep up with the working-level meetings resulting in limited harmonization in TVET aid.
- While this project was being prepared, international agencies such as ILO, ADB, and World Bank prepared the TVET project and tried to harmonize their support. For example World Bank's 'Skills and Training Enhancement Project' was designed to compensate for other projects.⁵⁾ In other words, they shared the basic framework for National Technical and Vocational Qualification Framework(NTVQF), but they supported a different technical division so that the support was not redundant.

4) ADB, Proposed Loan : People's Republic of Bangladesh: Skills Development Project, ADB Report and Recommendation of the president to the Board of Directors (May 2008). p.4.

5) *ibid.* p.4

- If information about Bangladesh TVET's main issues and problems were obtained and checked with other donor agencies, the project could have effectively contributed to the development of skilled technicians and increased the visibility of Korean assistance.
- In fact, during the interview with an expert from ADB's Skills Development Project, he pointed out that the weakest point of Korean aid was their independent aid system without participating in the sector working group.

(3) Relevance of Project Goals

- The purpose of this project was to improve the training center educational system into providing advanced vocational training as a 'model training center' in order to improve the quality of technical education and to cultivate skilled manpower (<Table 3-5>).⁶⁾
- The detailed purpose was to improve the Mirpur Training Center to develop skilled workers so that the center can become an advanced technical training center. They reorganized the trades from 11 to 6. The level of education was upgraded from a 9-10 grade course to a 11-12 grade course. The below <Table 3-6> shows the project's basic direction and characteristics of the changed program before and after.

<Table 3-5> Overview of Target for Evaluation

The project to enhance the vocational capacity of Bangladesh	purpose	to improve the educational system into providing advanced vocational training as a 'model training center' in order to improve the quality of technical education
	content	remodelling facilities, supply equipment, expert dispatch, inviting trainee, support \$400 million

6) PMC's final report on the project to enhance the vocational training capacity of Bangladesh, p.1

<Table 3-6> Basic Direction of the Project

	before	after
name	Mirpur Technical Training Center (TTC)	(Bangladesh- Korea Technical Training Center (B-KTTC)
mode	2-year vocational technical training center	2-year advanced technical training center (Advanced TTC)
level	semi-skilled worker National Skill Standard(NSS) Grade III	skilled worker National Skill Standard(NSS) Grade II
course	Grade 9-10 course	Grade 11-12 course
qualification for entrance	graduates from elementary school (8 grade)	diploma holder from secondary school course (SSC)
qualification	qualified for exam for SSC(Voc)	qualified for exam for HSC(Voc)
training division	regular program for 11 divisions (+short program for 7 division)	regular program for 6 divisions (+short program)

Source: Presentation on implementation survey of the project to enhance the vocational training capacity of Bangladesh(May 2007), p. 26.

- These types of goals were new in Bangladesh's TVET system.⁷⁾ BMET manages the TTC which offers SSC courses, and BIMT which offers TTC and SSC. Therefore, in order to establish a new advanced technical training center at the 11-12 grade level in BMET, a long term approach was needed because it required changes in the educational system, including a new "curriculum"⁸⁾.
- In the interview, BMET indicated they were willing to create a new curriculum and issue a Certificate of Competency on its own, and would do their best to get the approval from BTEB.⁹⁾

7) The project goal showed some differences from the results of the pilot survey. The pilot survey examined the TVET system in depth, and suggested to provide a short term special advanced course for SSC holders along with the improvement of the educational environment.

8) Higher Secondary Certificate (HSC, Vocational) controls Vocational Training Institute (VTI) which provides courses with 80% of regular subject and 20% of major subjects. The new curriculum the project suggests consists of lots of major subjects and practicum. Thus when they choose the new curriculum, it needs a huge compromise such as shift of teachers, etc.

9) Implementation survey on the project to enhance the vocational training capacity of Bangladesh(2007.3), p.6

- BMET has no authority about these issues while BTEB controls curriculum and certificate award. A more in-depth discussion on this issue with BMET would have been useful.
- Reforming of the training system such as upgrading SSC-level center to HSC-level center, which was necessary to fulfill the goal of the project, entailed a change in the recipient's TVET system. It would be difficult to achieve the project goal only through implementation activities included in this project, and It would take a longer time.

(4) Reflection of Beneficiaries' Needs

- The project reorganized the trades from 11 to 6, which included automobile, mechanics, construction, electricity, electronics and industrial facilities

<Table 3-7> Result of Reorganization of Division

	before	after	comment
1	Mechanical Drafting	Electricity(2classes)	reorganization of curriculum
2	Civil Drafting	Construction	intensifying computer application
3	Refrigeration & Air Conditioning	Industrial Facilities	adding special welding
4	Radio & Television	Electronics	compensate equipment repair for design
5	Automotive	Automobile	enhancement of maintenance capability
6	General Electrical Works	Electricity(2classes)	compensate equipment operation for design
7	General Mechanics		integrating with Electricity
8	Machine Tool Operation		integrating with Electricity
9	Welding Works		integrating with Industrial Facilities
10	Wood Working		not appropriate for the new center thus removed to other center
11	Civil Construction		integrating with Construction

Source: Detailed plans for the project to enhance the vocational training capacity of Bangladesh p. 16.

- It was necessary to find out what kind of skills and types the labor market and industry needed.

- The reorganization of 6 trades indicated that the labor market was not fully analyzed. For example, Industrial Facilities integrated refrigeration, air purification and welding, but there's no such Industrial Facilities in the Bangladesh labor market.¹⁰⁾ According to B-KTTC teachers, in the current Bangladesh job structure they should separate refrigeration and welding. In addition, for overseas employment there is no need for Industrial Facilities (result of interviews with B-KTTC teachers and employers).

- From the beginning of the project, we imagined that the multi-function technical personnel could get jobs in Korea.¹¹⁾ In fact, Korea imported unskilled workers from Bangladesh with Korean language ability and a basic movement test.

10) Among 14 trade departments of TTC controlled by BMET, the dept. of Air Cleaning/Refrigeration had the greatest number of students, which means this has a big market demand.

11) Detailed plans for the project to enhance the vocational training capacity of Bangladesh, p.5

<Table 3-8> Work Process Result Compared to Project Plan

element	work process result compared to project plan		achievement rate
	plan	result	
remodelling facilities	<ul style="list-style-type: none"> gross area 10,239m² <ul style="list-style-type: none"> - main building 4,489m² - training building 3,266m² - construction/electricity 975m² - auditorium 1,509m² 	<ul style="list-style-type: none"> completion of remodelling facilities 	100%
supply equipment	<ul style="list-style-type: none"> 6 dept. of trade 326 types 3,293 items 	<ul style="list-style-type: none"> equipment: 336 types 3,654 items application education 	100%
Invitational training	<ul style="list-style-type: none"> manager course (5people/2weeks) trainer course (16people/3months) 	<ul style="list-style-type: none"> manager course: 5 people/2weeks <ul style="list-style-type: none"> - period: '08.3.3~3.14 trainer course: 16 people/3months <ul style="list-style-type: none"> - period: '08.7.21~'09.1.19 	100%
dispatch expert	<ul style="list-style-type: none"> operating expert: 1person/3months chief expert: 1person/6months trade expert: 6people/6months 	<ul style="list-style-type: none"> operating expert: Lee Jung-gu (07.9.14~12.13) chief expert: Lee Jung-gu ('08.1.27~7.26) trade expert: Lee Jik-ryul & 5 others('08.7.21~'09.1.19) 	100%
development of curriculum & materials	<ul style="list-style-type: none"> 6 dept. of trade 1,2 years (11-12grade) development of curriculum & materials 	<ul style="list-style-type: none"> material development <ul style="list-style-type: none"> - 1 year(Grade 11) practicum 35 types - 2year(Grade 12) practicum 30 types 	100%
master plan	<ul style="list-style-type: none"> master plan for operating the center 	<ul style="list-style-type: none"> master plan for operating the center 	100%

Source: Korea University of Technology & Education (2009.11), PMC's final report on the project to enhance the vocational training capacity of Bangladesh, p. 19.

(1) remodelling Vocational Training Center's Facilities & Purchase of Equipment

- Mirpur training center was repaired, including the main building, training building, and auditorium, etc. All together they repaired a total of 10,239

square meters. The B-KTTC facility was determined to be the best in Bangladesh.

- The necessary equipment (33 types, 3,654 items) was provided to offer 6 advanced training courses including mechanics, construction, industrial facilities, etc. 6 trade experts were sent to Bangladesh to teach and demonstrate how to use the equipment for B-KTTC teachers.
- However, the evaluation team found out that some of the basic equipment for the architectural engineering trade, such as a cement-mixer was not provided. However, the evaluation team observed that most of the equipment was kept in good condition and well maintained except for some machines such as CNC machine.

(2) Development of Curriculum and Materials

- In order to introduce Korean technology to Bangladesh, experts were sent to B-KTTC including one operating expert (3 months), one chief expert (6 months), 6 trade experts (6 months). These experts provided advice for the operation of the center.
- Through this project, a 2-year higher secondary certificate (HSC) course was introduced and curricula for 6 trade dept. and 65 training materials (35 for 1 year students, 30 for 2 year students) were developed.

(3) Workshop Program for Manager and Teacher

- Workshop programs for B-KTTC managers and teachers were in Korea, focusing on knowledge and capacity related to vocational training.

- Workshop programs included theories and practice, teaching methods, development of teaching materials and use of computers.

(4) Master Plan for Operation of B-KTTC

- KOICA established an operational plan for B-KTTC including structure of the organization, teacher qualification, internship, vocational guidance, etc.

2) Achievement of Effectiveness

- For the purpose of the evaluation of effectiveness, the evaluation team analyzed the rate of enrollment, graduation, employment. Also, the utilization of curriculum, materials, remodelled facilities was analyzed.
- Since the main goal of the project was to make the center as an advanced training center, it was not appropriate to make a before and after comparison. Therefore, we made an absolute evaluation as much as possible.

(1) Number of Enrollment and Graduate Students

- When the B-KTTC opened at first in July 2009, the number of entering students was 133 and the fixed number for the 6 dept. was 240 so the recruiting rate was 55.4 %.
- 61 students out of 133 enrolled students completed the course so the completion rate was 45.9%. 50 students out 61 graduates got employed so the employment rate was 82 %.

<Table 3-9> B-KTTC 2-year Course Status Report

division	limit number	2009 (entrance)	2011 (graduation)	employment (2011)
automobile	30	22	9	7
construction	30	15	4	3
mechanics	60	21	9	7
electricity	60	31	16	14
electronics	30	14	8	7
refrigeration/ welding	30	30	15	12
total	240	133	61	50

- The advanced 2-year training program which is the result of the project recruited one time in 2009, and due to no applicants the program had not opened until the end of 2012.
- Those who had completed the B-KTTC course were not qualified to take exams for the higher secondary certificate (HSC, Voc) because their curriculum was not approved officially.¹²⁾
- In order to get approval for qualification to take the exam, reformed curriculum should satisfy the BTEB's criteria. In order to meet the criteria, the number of general subjects should be increased and the appropriate teachers for general subjects should be hired. However, B-KTTC did not accept it and instead of hiring new teachers the existing training teachers taught general subjects.¹³⁾

12) HSC(Voc) is a very important qualification in Bangladesh society. It allows a person to enter university in the educational system and is the same as NSC 4th level of skilled workers in the labor market.

13) B-KTTC suggested to BTEB to change to HSC(Tech) which has less regular subjects and more training subjects compared to a regular vocational training center and BTEB approved it as of November 2012, so it is possible to operate the HSC(Tech) system from 2013.

- B-KTTC has been operating a 1-year certificate course temporarily before getting approval for the 2-year course. This course is for SSC holders and students will get a Certificate from BTEB after completion of this 1-year course.¹⁴⁾
- 133 students entered for this 1-year course in 2010. In 2011 306 students entered and 71 completed the course, which shows 23.2% completion rate. In 2012, out of 301 entering students in January, 216 students are currently studying, so the dropout rate shows 28.2%.

<Table 3-10> B-KTTC One-Year Certificate Course Status Report

dept.	fixed number	2010 entrance	2011		2012 ¹⁵⁾		
			entrance	graduation	entrance in January	present June	entrance July*
automobile	60	33	62	20	69	41	47
construction	60	12	23	6	34	24	21
mechanics	60	11	45	3	49	36	22
electricity	60	34	64	20	63	46	50
electronics	60	14	45	9	44	34	30
refrigeration/ welding	60	30	43	13	42	35	33
total	360	133	306	71	301	216	203

- B-KTTC has been running a modular course. Up to now June 2012, the limit in the number of recruits for 14 courses is 520 and the applicants were 1372. Out of 888 entering students, 343 graduated (completion rate 38,6%) and out of 343 graduating students, 132 were employed (employment rate 38.5%).

14) 1-year courses in 6 departments at B-KTTC were operated under the TVET's formal system. 1-year courses for SSC, or the same qualification holders, included not only 6 trade fields but Certificate in Health Technologies (92 agencies) and Poultry Farming & Animal Health and Production (1 agency).

15) In order to enhance the usage rate of the facilities, B-KTTC recruited students for the 1-year course twice in January and July 2012.

<Table 3-11> B-KTTC Modular Course Status Report

	dept.	period	limit #	June 2012			
				apply	enter ¹⁶⁾	graduate	employment
automobile	Auto Mechanics (with driving)	June	60	400	102	21	9
	Auto electrician	June	30	60	44	25	10
construction	Civil Auto CAD (2D-3D)	June	30	150	147	52	20
	Tile Fixer/Mason/Rod Binder	Feb.	30	10	7	3	1
	Industrial Carpentry	March	30	5	3	2	1
mechanics	Mechanical Auto CAD (2D-3D)	June	30	45	40	38	
	Pipe Fitting	March	30	100	81	26	6
	Machine Tools Practice and CNC Machine Operator	June	30	120	99	15	4
electricity	Electrician	June	60	200	111	60	35
	Electrical Machine Maintenance	June	40	100	97	41	20
electronics	Consumer Electronics	March	30	12	10	5	0
refrigeration/welding	Refrigeration & Air Conditioning	June	60	120	104	25	12
	6-G Welding	March	30	45	40	28	10
	Tig & Mig Welding	March	30	5	3	2	2
total			520	1372	888	343	132

- Except for the 6 trade areas, there are several additional modular courses such as Garments, Computer, Korean language, Housekeeping. They offer shift classes.

- One of the reasons for the low employment rate for B-KTTC graduates is a lack of connection with industry. Cooperation between industry and the academy is not robust due to the lack of networking and cooperation. Also, the center does not provide an employment service, which shows that the links between the center and industry was not strengthened

16) B-KTTC recruited much more students than the limit considering high dropout rate.

through putting the master plan into practice. From the interview with teachers, the evaluation team noticed that the implementation of the cooperation in the master plan was not significant.

(2) Use of Developed 2-Year Course Curriculum and Materials

- The 2-year course curriculum and materials developed by this project were used only once for entering students in 2009 (graduated in 2011).¹⁷⁾
- B-KTTC developed a 1-year course curriculum based on the 2-year course curriculum and got the approval from BTEB. Also 6 trade departments and various modular courses use the new curriculum, so some of the developed curriculum and materials during this project are currently used for short programs.

(3) Use of Remodelled Facilities and Provided Equipment

- Provided equipment and remodelled facilities of B-KTTC are viewed as the best quality in Bangladesh. The satisfaction of students and teachers were very high (teacher 68%, students 90.8%)¹⁸⁾
- Remodelling and equipment were focused on the 2-year advanced courses. Since the 2-year course program was closed after recruiting students one time, the use of facilities after the project was limited.
- B-KTTC has provided a 1-year Certificate course and a modular course for

17) The 2-year course curriculum and materials will be expected to be used actively, as they can recruit students for the HSC(Tech) program from 2013.

18) Participants in the teacher survey were 47 teachers out of a total of 63 (about 75%), and survey participants enrolled in the 1-year course were 91 students out of 216 (about 42%) and 96 students for the 6-month course out of 405 (about 24%).

6 trade areas since 2010. Recently the number of student enrollment has been increasing, which means the use of facilities and equipment is very active.

- Also the facilities and equipment of B-KTTC are used for PPP and various customized training programs.
- Due to the recent support from the ADB's Skills Development Project, training was provided to the polytechnic teachers which led to the use of facilities and equipment. <Table 3-12> shows this information.

<Table 3-12> Record of Polytechnic Teacher training from B-KTTC
(2012. 9. 1-12)

trade dept.	number of trained teachers
Electricity	22 people
Plumbing & Pipe Fitting	22 people
Welding	22 people
total	66 people

- Since the educational environment has been improved due to the project, B-KTTC was appointed as an Assessment Center for the simulation of CBT exam. This means that the utilization of the facilities and equipment will be increased.

(4) Teacher Capacity Reinforcement

- It is shown that teacher capacity has been enhanced through this project. B-KTTC teachers reported their theoretical and technical knowledge has increased.

- Dispatched experts provided technical advice to the managers and teachers through several workshops. Teachers reported that their abilities relating to professional knowledge and material development skills and teaching method increased.

(5) Reorganization of Training Center Educational System

- The goal of this project included a plan to reorganize the Mirpur training center education system from a SSC course to a HSC course. In order for B-KTCC new curriculum to be adopted for the HSC course, they need to get the approval from BTEB, and finally they obtained this permission for the HSC(Tech) as of November 2012.
- KOICA expanded the period of the expert dispatch to get the approval from BTEB,¹⁹⁾ but the experts' activity was focused on the improvement of the educational environment instead of trying to get the approval.
- The reason for the delay of the project goal is that BMET was supposed to get the approval for HSC but they do not have authority for that. They did not create a consensus within B-KTTC and BMET (interviews with B-KTTC teachers & BMET authorities).²⁰⁾ This is because there is a gap between the B-KTTC curriculum and the HSC course.
- In summary, B-KTTC improved the educational condition for skilled manpower and consolidated the capacity and gained approval as an advanced training

19) According to implementation survey of the project to enhance the vocational training capacity of Bangladesh(2007.3.3–3.9), the period of expert dispatch will be longer than the duration that R/D proposed for the future official approval from BTEB.

20) As for the issue of the promotion of the HSC(Voc), it was not easy to find out about the agreement between BMET and B-KTTC because the HSC promotion would entail a change of curriculum (change of ratio of regular and training courses) on the part of BMET and there would be a shift among teachers on the part of B-KTTC.

center as of November 2012. The original curriculum B-KTTC proposed in 2009 consisted of a majority of training courses and a few regular courses. The recently accepted curriculum was revised so that it met the requirements of BTEB, with 8 regular courses and 6 training courses.



■ C. Efficiency

- Evaluation of efficiency is to measure how all the inputs produce the maximum of outputs and outcomes.
- The evaluation is to examine how appropriately time, budget and manpower are invested and yield appropriate effectiveness.

1) Actual Input Resources Compared to Plan

- From the input standpoint, the overall plan went smoothly in most aspects.
- The period of this project was from 2007 to 2009 and all the activities were done within the time frame and all the budget was used for the agreed activities.
- Since this project was the first TVET project by Korea in Bangladesh, there was no comparable previous projects. However the evaluation team assessed that the rule of procurement was well observed, and the budget was administered appropriately.

<Table 3-13> Implement of Input Items Compared to Plan

Input	detailed item	plan	implementation
time		2007~2009 (3 years)	2007~2009 (3 years)
budget	total	\$400 million	\$400 million
	remodelling center	\$70 million	\$70 million
	expert dispatch	\$89.5 million	\$89.5 million
	equipment supply	\$200 million	\$200 million
	inviting trainee	\$30.5 million	\$30.5 million
	etc.	\$10 million	\$30.5 million
manpower	expert dispatch	45MM	45MM

2) Efficiency of Input Allocation

- It was not easy to find out any similar project to assess the efficiency of the project. Thus, the evaluation team compared this project with input of "expert consultation" from the ADB's "Skills Development Project".
- There are two types of experts, one is operating experts and the other is trade experts. The ratio of trade experts occupied 80% of the total budget for experts. In the case of the ADB project, many different kinds of experts were included. For the full development of a vocational training center, technical support from various types of vocational training is needed. If this project had included not only engineering experts but also vocational training experts in the areas of TVET policy issues, TVET capability and teacher training, this project could have further helped the improvement of the vocational education system and the revitalization of the center.

<Table 3-14> Comparison of Expert Input

current project		ADB Skills Development Project					
expert		expert for different factor	over-seas	domes-tic	total		
operating expert	9	TVET policy, team leader	24	48	72		
trade expert	36	development of CBT curriculum, material, assessment tool	18	36	54		
		enhancement of TVET	12	20	32		
		TVET teacher training and plan	24	46	70		
		teacher training program	3	6	9		
		financial management for training	4	12	16		
		to be decided based on demand	12	12	24		
		analysis of training demand		12	12		
		issues of gender and aborigine		14	14		
		procurement		18	18		
		financial management		12	12		
		analysis of outside financial		12	12		
		evaluation of outside performance		12	12		
			45	total	97	260	357

(unit : Person/Months)

- It is estimated that this project invested planned resources such as time, budget, manpower as planned and produced scheduled outputs.
- It is necessary to include not only engineering experts but also other experts who are knowledgeable about the vocational education system to achieve the improvement of the recipient country's vocational educational system.



D. Impact

- Evaluation of impact is a part of performance evaluation and it is to measure the long-term influence of this project.
- It is limited to assess the impact of the project since the program was closed after only one time operation of 2-year courses.

1) Quality and Usefulness of the Training

- For the evaluation of impact, it is important to find out how employed graduates' knowledge and skills meet the demand of the labor market. For this, the evaluation team should analyze the center graduates and their employers.
- As the number of 2-year advanced course graduates are so limited, the evaluation team could not conduct a survey, instead interviews with both groups were conducted.
- One of the main purposes of the interviews with graduates was to find out their opinions on the quality and usefulness of training. The result revealed that center graduates and their employers believe their training was useful and appropriate for their job. More research should be done on this matter so that we can obtain higher reliability.
- B-KTTC graduates answered that theories and practical knowledge they received during the training course was very useful for their job.

2) Analysis of Economic Impact

- We decided to analyze the differences between costs and benefits.
- For the analysis we use the following methods:① benefit/cost ratio, ② net present value method, ③ internal rate of return (IRR)
- The result showed that expected benefits is relatively high compared to the costs, so the economic feasibility is very high (refer to Appendix 1).



E. Sustainability

- This is to assess the ability of the project to maintain in the future and how long the impact would last.
- We analysed if there was any exit strategy and how long the project impact would last.

1) Exit Strategy

- In the case of this project, an exit strategy should be introduced to make sure that the training center will be operated efficiently even after the completion of the project. This means an exit strategy such as the analysis of the problems of the training center and their possible solution needs to be prepared in advance.
- KOICA and PMC agreed that they would support the dispatch of experts or volunteers. After the completion of the project, KOICA sent the experts or volunteers to B-KTTC to teach them how to maintain and operate the center. So through the dispatch of the experts or volunteers, KOICA could monitor

the operation of the center.

- KOICA supported B-KTTC's capacity by having a "follow-up workshop to support the training center". During this workshop, the principal of B-KTTC and BMET managers were invited to educate them about how to operate the budget, academic affairs and partnership with the community. So, this follow-up should contribute to the sustainability of the project.

2) Sustainability of Effect and Impact

- This can be analyzed from the policy, financial and technical perspectives.

(1) Standpoint of Domestic Policy

- B-KTTC submitted a proposal to BTEB to operate an advanced course, HSC(Tech), for more effective training and acquired the permission as of November 2012. The curriculum proposed by B-KTTC is shown in <Table 3-15>. The approved curriculum is a compromise, with more regular courses and less training courses compared to the proposed HSC(Voc) curriculum in 2009.

<Table 3-15> 2-Year Advanced Courses by B-KTTC

s/n	subjects for 11 grade	subjects for 12 grad
01	Bangla-1	Bangla-2
02	English-1	English-2
03	Trade-1(**11)	Trade-1(**21)
04	Trade-2(**12)	Trade-2(**22)
05	Trade-3(**13)	Trade-3(**23)
06	Computer	Physics/ Chemistry
07 selective (1 subject)	Math-1	Math-2
	Economics-1	Economics-2
	Social Science-1	Social Science-2

- Recently the Bangladesh government adopted the National Skills Development Policy (NSDP) and it influenced B-KTTC positively. NSDP would develop short programs to meet the demand of the labor market and National Skills Certificate system. When the labor market demands certificates, B-KTTC short programs would be active (refer to <Table 3-16>).

<Table 3-16> National Technical & Vocational Qualification Framework (NTVQF)

NTVQF	Education Type			Current Qualification Structure	Job Classification
	Pre-vocational education	Vocational Education	Technical Education		
NTVQF 6			Diploma in engineering or equivalent	4-year Diploma	Middle Level Manager (Sub Assistant Engr, etc)
NTVQF 5		NSC V		NSS Master	Highly Skilled Worker /Supervisor
NTVQF 4		NSC IV		NSS1/HSC(Voc) Year 11/12	Skilled Worker
NTVQF 3		NSC III		NSS2/SSC(Voc) Year 10	Semi-Skilled Worker
NTVQF 2		NSC II		NSS3/SSC(Voc) Year 9	Basic-Skilled Worker
NTVQF 1		NSC I		NSS Basic/Basic Trade Course	Basic Worker
Pre-Voc 2	NPVC II			None	Pre-vocation Trainee
Pre-Voc 1	NPVC I			None	Pre-vocation Trainee

*NPVC - National Pre- Vocation Certificate

**NSC - National Skill Certificate

***NSS - National Skill Standard

Source : EU-ILO(2009). A National Technical and Vocational Qualification Framework, MOE, Bangladesh Skills Development Policy, Short Form Proposal, p.3.

- Competency-based Training (CBT) emphasizes the enhancement of practical ability. Since the focus of the B-KTTC curriculum is on practical education, B-KTTC will adapt to the new system quite easily.

- Also, for CBT the teachers' ability is very important. In the case of B-KTTC the teachers' ability improved greatly through this project, which is very encouraging for the new system.
- Since B-KTTC got approval for the HSC (Tech) from BTEB, legal sustainability is secured.

(2) Financial Aspect

- This focused on analysis of the financial situation and whether there was sufficient budget to continue the project.
- The budget for B-KTTC came directly from the government (2011/2012, 99%). The government subsidiary has increased since 2007/8 and the financial status was stable (<Table 3-17>).

<Table 3-17> Yearly Budget for B-KTTC (unit : BDT)

	2007/8	2008/9	2009/10	2010/11	1011/2
government budget	19,783,000	23,716,000	24,567,000	27,135,000	30,502,000
self-income	437,508	-	742,950	21,060	97,664
total budget	20,210,508	23,716,000	25,319,950	27,156,060	30,599,664
spending	20,549,809	20,243,207	22,573,715	27,027,182	30,083,243
Balance	-	3,472,793	2,746,235	107,827	516,421

(3) Technical Aspect

- This was done based on maintenance and repairing of equipment. B-KTTC staff learned how to operate, use and maintain equipment from the expert dispatch or invitational training. Currently KOICA experts or volunteers

are sent to Bangladesh to educate them. Accordingly, 3 years after the project has finished the equipment condition is very good and well used, which means the sustainability is very positive.

- When they can not find some parts for expensive machines (e.g. CNC), those machines are not operated. In a future project, the matter should be taken into account.



■ F. Cross Cutting Issues

1) Gender

- Traditionally Bangladesh women's roles were limited in their home, school and society. Recently they have initiated gender mainstreaming where they attempt to develop their ability and increase their employment rate.
- Bangladesh women are employed in special jobs only for women, not in electronics or construction fields. Thus, women hesitate to take education in these fields because it is very hard for them to get jobs. Employers also prefer women for sewing or housekeeping jobs.
- The training center programs are typically reserved for men, so in January, 2012 in the 1-year certificate course the number of enrolled students is 306, among them only 4 women (1.3%) registered for the electricity dept.
- KOICA an/or PMC did not seriously think about women's participation from the beginning of this project. One of the reasons was because there is a special training center for women called the Mirpur Mohilla TTC.

2) Environment

- The project included the activity of remodelling or expanding the existing buildings. Thus, it did not have a negative influence on the environment. Also, as the training center is located in a city, there was no problem with power and trash disposal.
- Also, for the remodelling and the establishment of workshops (classrooms for practice), an environmental safety system was needed and this issue was addressed during the project. One committee member from each trade department was selected. They finally created a "remodelling committee"²¹⁾ and this committee made sure about safety.

21) Lee jung-gu, report of delegated expert for the project to enhance the vocational training capacity of Bangladesh2007. 9. 14-12. 13). p.10



Conclusion and Recommendations



IV

Conclusion and Recommendations



A. Evaluation Results and Lessons Learned

1) Main Evaluation Results

- The purpose of this project was to cultivate skilled manpower to meet the demand of the labor market. In order to do this, it was necessary to upgrade the existing training center to an advanced level. This was done by reorganizing the trade departments from 11 to 6 departments. New curricula and teaching materials were developed; facilities were remodelled; equipment was supplied; management and staff were educated; and a master plan for the training center was established. This project was done within time and budget as was planned and the intended outcome was achieved. Also, the B-KTTC will be opened for a new program.
- The reason that most of the planned outputs were produced was that during the project period all the different experts were dispatched to establish the program and make sure to encourage the local managers and teachers. They kept giving advice until the completion of the project.
- The remodelled B-KTTC facilities are estimated to be the best in Bangladesh. Teachers ability also increased in terms of their knowledge and teaching skills, especially in the development of teaching materials.

- However, the 2-year advanced course had only a one-time recruitment in July, 2009 and then closed down due to no applicants. The approval to become an advanced course training center was obtained as of November 2012, so operation of the advanced course will resume from 2013.
- While the 2-year course was delayed, B-KTTC developed a 1-year certificate program for the students with SSC with the approval from BTEB and various modular courses, which means the curriculum and materials are used restrictively. Facilities and equipment are used for other programs appropriately.
- In spite of successful outputs, the reason for the low outcome achievement rate and the delay of project goals was that it entailed the change of the TVET system and it took a long time.
- BMET was supposed to get the permission on its own from BTEB for the new 2-year program, but the process was delayed for a long time. Even though the complicated characteristics of the TVET system, especially the governance issue, were examined during feasibility study, the results of feasibility study was not reflected appropriately during implementation survey.
- The permission for the 2-year HSC(Tech) course was obtained due to the following reasons. The recipient country realized the need for upgraded courses rather than the existing HSC(Voc) system and KOICA's follow-up efforts.

2) Lessons Learned from Each Stage

(1) Planning Stage

- (participation of working group of each sector) In underdeveloped countries including Bangladesh, working groups of each sector are very active and

various aid policies and programs are shared by these sector groups. Thus it is necessary to establish a system whereby sector experts are stationed in a KOICA regional office to determine the type of need required by the recipient country. Also, while experts conduct a feasibility study, they are able to comprehend the recipient country's TVET's main issues and problems through interviews with educational working groups and other donor countries' experts, and reflect them in their project.

- (application of the results of feasibility study) Before the project, the feasibility study for the TVET system was carefully done, but during the implementation process the result of the feasibility study was not fully used. The TVET system did not contain an Advanced Technical Training Center of HSC level so it was difficult to get the permission for it.
- (analysis of industry demand) For the development of a new training program, employers' opinions should be reflected because they know best about what they need for the industry.
- (establishment of criteria for target institutions) It would have been more effective if an appropriate name for the center had been selected from the beginning stage. In Bangladesh they use the term 'Institute' for HSC level program instead of 'Training Center'. People might misunderstand B-KTTC as being on the same level of a TTC.
- (participants' consensus about TVET) Even experts in TVET had different concepts about the TVET, some experts believe that HSC graduates represent skilled workers, and other experts believe they are only medium level skilled workers. Thus, a general consensus or agreement needs to be reached on this issue before TVET project or during TVET project.

- (recognition of educational result) The certificate of the training center should be connected to the higher education institute. Recent vocational training systems emphasize learners' career pathways. For the future similar projects, the certification requirements should be determined ahead of time and coordinated with the appropriate organizations.
- (relation of project factors and goals) As the goal of the project included upgrading the existing training center to a higher education center, it was necessary to cooperate with government agencies responsible for TVET. However, the project focused on improvement of the training center's infrastructure and capacity of teachers in B-KTTC. There should be a strong relationship between project components and its goals from the planning stage.

(2) Implementation Stage

- (use of tools for performance management) During the progress of the project, it was required to use tools for performance management in order to get maximized outcomes. The logical framework should have been revised as the project was implemented, based on the possible changes in goals and outputs of the project. In this way, maximized outputs should be yielded ultimately. In the case of this project, PDM which was created at the beginning of the project was not updated as the project was implemented.
- (committee for curriculum & material development) It is reported that after the completion of the project teachers' ability to develop materials was enormously enhanced. However if there had been a committee between the training center and industry for curriculum and teaching material development, it could have been more productive and could

have resulted in more market friendly outputs, and the curriculum could have been constantly revised to keep up with the market demand.

- (cooperation between industry and educational organizations) Programs for cooperation between industry and educational organizations existed, but they were not put into operation and there was not enough networking done during the project. Even though the 'master plan' emphasized cooperation between industry and educational organizations, it seemed that the programs for cooperation with industry were not into practice fully. Thus, in future similar projects, educational programs that include cooperation with industry, and training related to employment should be provided.



■ B. Recommendations

1) Enhancement of Feasibility Study

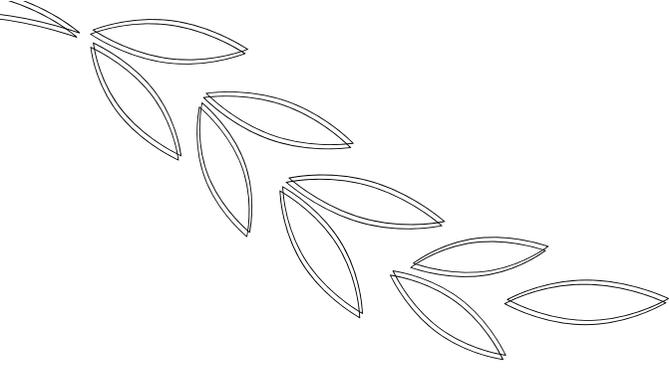
- For the effectiveness of a vocational training center project, the feasibility study's role becomes critical. In the existing feasibility study, it did not show sufficient analysis of TVET. For future feasibility studies, it is necessary to analyse the vocational training center's main issues and problems and suggestions should be made as to how these problems may be resolved. This approach is necessary when a change is to be made from project support to program support. Therefore, a more effective feasibility study is strongly recommended.

2) Expansion of Experts Participation in the Vocational Training System

- In order to think about improvement and enhancement of the recipient country's training system, experts participation was needed. Different experts should actively participate in the project, especially legal or policy experts.
- It is recommended that participation of experts in the vocational training system should be increased from the beginning stage of the project. These experts can analyse the recipient country's labor market and vocational training system and eventually they can make the project more effective by discussing policy with various interested parties.

3) Shift to Establishment of "Center of Excellence for TVET"

- It is recommended that future projects be more focused on the establishment of Centers of Excellence for TVET, in order to better enhance the development of the recipient country's vocational training system. Recently other advanced donor agencies are establishing a "Center of Excellence for TVET" and it is used as a benchmark for other TVET centers. One of the characteristics is to provide high quality training related to employment and the demands of industry, and to do additional functions relating to cooperating with the existing TVET system.
- Provision of a high quality education should include the overall enhancement of the training center, such as the development of a curriculum which adequately reflects the labor market demands. Also, improvement of teacher capabilities, training facilities and equipment, and management abilities are important elements for the enhancement of the center's capacity. Additional functions should include workshops for teachers and managers, research programs and vocational education training networking, etc. These additional function can increase the impact of the project on the development of the beneficiary country's vocational training system.



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<http://www.oecd.org>

OECD Development Assistance Committee

<http://www.oecd.org/dac>

United Nations Development Programme

<http://www.undp.org>

United Nations Educational, Scientific and Cultural Organization

<http://www.unesco.org>

Bangladesh Technical Education Board

<http://www.bteb.gov.bd>

World Bank

<http://www.worldbank.org>

Asian Development Bank

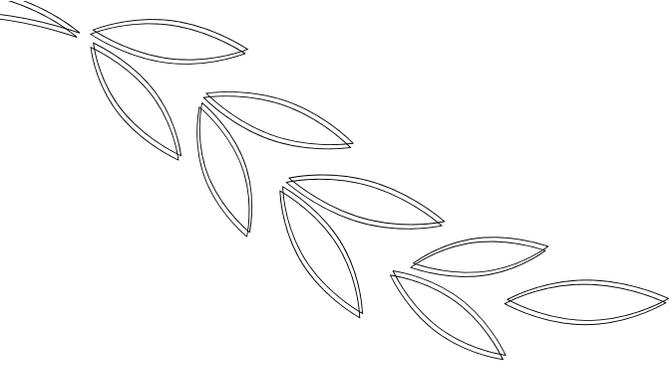
<http://www.adb.org>

Ministry of Foreign Affairs and Trade

<http://www.mofat.go.kr>

Korea International Development Agency

<http://www.koica.go.kr>



Appendix



Appendix



■ Appendix 1. Analysis of Economic Impact

Projects for vocational training center can involve various types of cost and benefits. Among benefits, some can be measured by a monetary unit and some cannot.

(1) Costs

Costs for the project are as follows:

- ① KOICA support fund.
- ② The difference of administration costs(personnel expenses, maintenance fee, utility expenditures) between before and after the project.
- ③ The difference of trainees' school fee between before and after the project.
- ④ The difference of trainees' implicit wage(opportunity cost) between before and after the project

(2) Benefits

Benefits from the project are as follows:

- ① Income increase by the graduates' employment within the country
- ② Improvement of balance of payment from graduates' overseas employment
- ③ Improvement of productivity and spill-over effect by highly skilled workers

(3) Hypotheses and Estimation Methods for Analysis of Economic Feasibility

- ① Currency exchange: 1USD = 81.414 BDT, 1 BDT = 0.0122 USD
(As of September, 25th, 2012)
- ② Conversion of the number of students: conversed student numbers based on 6-month course. For example 1 student for 2-year program is the same as 4 students for 6-months program.
- ③ Life of the training equipment is 10 years and the approximated period in which the trainees are benefited by the project is 20 years.

[Items for cost]

- ④ Cost for maintenance and operation: Excluded the trades that are not related to the KOICA project. Yearly maintenance and operation costs are deflated to the 2008 currency value.
- ⑤ Trainee's tuition: tuition per student was in accordance with the below criteria.

course		2007	2009	2010	2011	2012
1 year and 2 years	yearly	356 BDT (USD4.373)	500 BDT (USD6.141)	456 BDT (USD5.601)	456 BDT	456 BDT
short courses	monthly	112 BDT (USD1.375)	112 BDT	112 BDT	112 BDT	112 BDT

*For 1 & 2-year courses, the government subsidized, and as a result tuition was lower than short program.

- ⑥ We applied unskilled worker's wage for implicit wage or opportunity cost.

[Items for Benefits]

- ⑦ We estimated the wage differences between after completion of the center and before the center. There were three types of employment, overseas employment, domestic employment and self-employment.
- ⑧ B-KTTC employment rate was the data from the instructors of each department during 2010 and 2011.
- ⑨ Domestic and overseas employees' annual salaries were calculated based on their estimates.
- ⑩ It was hard to get the data about increase of productivity and expansion of skills, so we did not include them.

(4) Analysis of Economy Feasibility

① Estimation of Benefit/Cost Rate

[Estimated present value of cost and benefit]

* Bangladesh Bank' interest rate from January to July, 2012 was used for discount rate 'r'. Commercial banks' interest rate (about 8% a year) and call money market's loan interest rate (about 15% a year) were used.

$$\text{present value of benefit (PVB)} = \sum_{t=1}^{t=20} \frac{B_t}{(1+r)^t}$$

$$\text{present value of cost (PVC)} = \sum_{t=1}^{t=20} \frac{C_t}{(1+r)^t}$$

(USD)	Benefit			Cost		
	Current	PV(8%)	PV(15%)	Current	PV(8%)	PV(15%)
Total	108,809,915	46,497,742	25,832,825	52,725,265	23,477,199	14,218,819

In this case of r=8%, the present value ratio of cost and benefit:

$$\left[\frac{\text{(total of present value of benefit)}}{\text{(total of present value of cost)}} \right]$$

$$\text{USD } 46,497,742 / \text{USD } 23,477,199 = 1.98$$

In this case of $r=15\%$, the present value ratio of cost and benefit:

$$[(\text{total of present value of benefit})/(\text{total of present value of cost})]$$

$$\text{USD } 25,832,825 / \text{USD } 14,218,819 = 1.82$$

*evaluation criteria: bigger than one means higher economic feasibility

(benefit/cost \geq 1: economic feasibility exists)

- ◆ Result of evaluation - in case of social discount rate $r=8\%$, [present value ratio of benefit/present ratio of cost] is 1.98, which means a high level of economic feasibility. in the case of social discount rate $r=15\%$, the ratio is 1.82, which also shows high economic feasibility.

② Estimation of Net Present Value (NPV)

$$\text{NPV} = \sum_{t=1}^{t=20} \frac{B_t - C_t}{(1+r)^t}$$

In case of $r=8\%$, NPV is as follows:

$$\text{USD } 46,497,742 - \text{USD } 23,477,199 = \text{USD } 23,020,543$$

In case of $r=15\%$, NPV is as follows:

$$\text{USD } 25,832,825 - \text{USD } 14,218,819 = \text{USD } 11,614,006$$

*estimation criteria: $\text{NPV} > 0$: economic feasibility exists

- ◆ Result of evaluation - in case of social discount rate $r=8\%$, NPV is USD 23,020,543, and in case of social discount rate $r=15\%$, NPV is USD 11,614,006, which shows high economic feasibility

③ Estimation of Internal Rate of Return (IRR)

When $\sum_{t=1}^{t=20} \frac{B_t - C_t}{(1 + IRR)^t} = 0$, we get IRR.

$$IRR = 42.64\%$$

*estimation criteria: $IRR \geq$ interest rate: economic feasibility exist

- ◆ Result of evaluation – Bangladesh interest rate is much lower than 40% per year and it means very high economic feasibility

Based on ①, ②, ③, ④, the economic feasibility of this project is very high.

⑤ Improvement of International Balance of Trade

Based on the 10 years of equipment durability and overseas employment, it is estimated that yearly revenue received on foreign currency will be \$150 million.

- ◆ Total Assessment of Analysis of Economic Feasibility:

This project has high level of economic feasibility and will bring the improvement in international balance of trade to Bangladesh which has had a chronic trade deficit.



Appendix 2. Questionnaire for B-KTTC Teachers

Questionnaire B-KTTC Teachers

Code Nr |_|_|_|

Date:

Personal Data and Sociological Background		
1. Gender:	1) Male	2) Female
2. Trade :		
1) Mechanics	2) Automobile	3) Civil Construction
4) Electricity	5) Welding/ Refrigerator	6) Electronics
Educational Backgrounds		
3. Educational level		
1) TTC graduate	2) Higher secondary graduate	3) Politech
4) College		
4. Did you participate in training/education program in Korea ?		
1) Yes	2) No	
Skill level (evaluate your skill level)		
5. Theoretical technical skills		
1) competent	2) not competent	
6. Practical technical skills		
1) competent	2) not competent	
7. Theoretical teaching skills		
1) competent	2) not competent	
8. Practical teaching skills		
1) competent	2) not competent	
KOICA Project		
To what extent do you agree with the following statements ?		
9. Through the Project, have your theoretical competences been improved?		
1) Yes	2) No	
10. Through the Project, have your practical competences been improved?		
1) Yes	2) No	
11. The project is adequate for the needs of the local community		
1) Strongly disagree	2) Somewhat disagree	3) Moderate
4) Somewhat agree	5) Strongly agree	

12. Training programs (trades) are selected properly to meet the local demands 1) Strongly disagree 2) Somewhat disagree 3) Moderate 4) Somewhat agree 5) Strongly agree	
13. Training programs (trades) are selected properly to meet the overseas demands 1) Strongly disagree 2) Somewhat disagree 3) Moderate 4) Somewhat agree 5) Strongly agree	
14. The project is consistent with the country's development plans 1) Strongly disagree 2) Somewhat disagree 3) Moderate 4) Somewhat agree 5) Strongly agree	
15. The project is well known to local residents 1) Strongly disagree 2) Somewhat disagree 3) Moderate 4) Somewhat agree 5) Strongly agree	
16. The training facilities in general are satisfied 1) Strongly disagree 2) Somewhat disagree 3) Moderate 4) Somewhat agree 5) Strongly agree	
17. What do you think of the technical level of training equipment? 1) Too advanced 2) Suitable to local needs 3) Outdated 4) Others (specify:)	
18. How do you evaluate the theoretical knowledge of Korean experts worked at B-KTTC? 1) Competent 2) Not competent	
19. What do you think is the strength of the B-KTTC? 1) Modern training facilities and equipment 2) High quality teachers 3) Low training expense 4) Others (specify:)	
20. Considering current training programs providing short courses, Are equipments and machinery adequately utilized? 1) Yes 2) No	
21. Do you know that the Bangladesh government plans to introduce the Competence-based training (CBT) into TTCs. 1) Yes 2) No	
21. What are you trying to do to adapt new CBT system?	
Free comments by the respondent	
Do you have any comments or suggestions ?	
.....	
.....	
.....	
.....	
.....	



Appendix 3. Questionnaire for B-KTTC Students

Questionnaire B-KTTC Students

Code Nr | | | |

Date:

Personal Data and Sociological Background	
1. Age :	
2. Trade :	
1) Electricity	2) Refrigerator/welding
4) Mechanics	5) Automotive
	3) Construction
	6) Electronics
3. Educational Background :	
1) Junior secondary graduate (8 grade)	
2) Secondary graduate (10 grade)	
3) TTC graduate	
4. Training program :	
1) 3-month program	2) 6-months program
	3) 12 month program
Motivation of Training and Satisfaction	
5. How did you select this Center?	
1) Parents/family	2) Own choice
4) Relatives	5) Others (specify:.....)
	3) Friends
6. How did you select the trade you are studying	
1) Parents/family	2) Own choice
4) Relatives	5) Others (specify:.....)
	3) Friends
7. What is your main purpose of taking the training program?	
1) To get employment	2) To obtain diploma or certificate
3) To upgrade knowledge and skills	4) Other (specify:)
8. What is your future plan?	
1) Continue to study at higher level	2) Work in a company
3) Open own business	4) Others (specify :)
9. At what level, are you satisfied with B-KTTC?	
1) Not at all satisfied	2) Not very satisfied
4) Very satisfied	5) Extremely satisfied
	3) Moderate
Training Program at B-KTTC	
To what extent do you agree with the following statements ?	
10. Training facilities and equipments are adequately utilized for training	
1) Strongly disagree	2) Somewhat disagree
4) Somewhat agree	5) Strongly agree
	3) Moderate

11. Training is provided based on students' individual competency	
1) Strongly disagree 2) Somewhat disagree 3) Moderate 4) Somewhat agree 5) Strongly agree	
12. B-KTTC provides career guidance and job placement for students	
1) Strongly disagree 2) Somewhat disagree 3) Moderate 4) Somewhat agree 5) Strongly agree	
13. Students have an opportunity to take practical training in the enterprises	
1) Strongly disagree 2) Somewhat disagree 3) Moderate 4) Somewhat agree 5) Strongly agree	
14. Do you think the B-KTTC is well known in the community?	
1) Not at all known 2) Not very well known 3) Well known 4) Very well known	
15. Considering your knowledge and skills, the level of curriculum is	
1) Too high 2) Appropriate 3) Too low 4) Others (specify_____)	
16. What do you think is the strength of the B-KTTC?	
1) Modern training facilities and equipment 2) High quality teachers 3) Location 4) Curriculum and training materials 5) Others (specify:)	
Free comments by the respondent	
Do you have any comments or suggestions?	

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