

Ex-Post Monitoring of Japanese ODA Loan Project

Jordan

Second Human Resources Development Sector Investment

External Monitoring Consultant: Eiko Nakamoto, Nakamoto&Associates Co., Ltd.

1. Project Description



Project Location
(the entire country)



Sewing Class at Vocational Training Center (VTC)
(Amman)

1.1 Project Objective

The objective of this project is to expand education opportunity, including basic, secondary and vocational education, and to assure its quality, all across Jordan through construction and expansion of school facilities and provision of equipment and furniture targeting (i) comprehensive schools (academic and vocational education), (ii) community colleges (two-year junior colleges), and (iii) vocational training centers (VTCs); thereby contributing to Jordan’s industrial development.

1.2 Outline of the Loan Agreement

Approved Amount / Disbursed Amount	7,123 million yen / 6,027 million yen
Loan Agreement Signing Date / Final Disbursement Date	July 1997 / November 2005
Ex-post Evaluation	2007-2008
Executing Agencies	National Center for Human Resources Development (NCHRD)(in charge of overall coordination), Ministry of Education (MOE), Al-Balqa Applied University (BAU), Vocational Training Corporation
Main Contractor	-

Main Consultant	-
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1.3 Background of Ex-post Monitoring

Since the availability of a highly skilled labor force is what attracts direct investments to Jordan, which is otherwise poor in natural resources, provision of high-quality education is unalterably a challenge of national importance to Jordan. In the National Conference on Education Development, which the Government of Jordan held in 1987, “improving the quality of education” was selected as one of the national agenda, and the government of Jordan had been striving to upgrade and expand academic and vocational education. Under these circumstances, this project has implemented the construction and the expansion of school facilities and the provision of equipment and furniture targeting (i) comprehensive schools (academic and vocational education), (ii) community colleges (two-year junior colleges), and (iii) VTCs.

At the time of ex-post evaluation in 2007, the project goals had been partially attained. However, since the demand for vocational education did not increase throughout Jordan as expected, a decreasing tendency could be seen in the number of students in comprehensive schools' vocational education program. The number of enrolled students for VTC was also level, and the filling rate, graduation rate, and employment rate were showing a downward trend. In this context, it was concluded that the effectiveness of this project was limited. In addition, the operation rate of school facilities and equipment implemented by this project remained lower than expected, and some of the equipment provided by this project remained unused. Therefore, the sustainability of this project was rated as “moderate”.

Under these circumstances, the ex-post evaluation made a recommendation to the Jordanian government to vigorously promote measures that will expand the demand for vocational education/training.

In this context, this project was selected for ex-post monitoring and was reviewed through the findings from the field survey and other research activities. Its final conclusion was drawn based on all these findings concerned.

2. Outline of the Monitoring Study

2.1 External Monitoring Consultants

Eiko Nakamoto (Nakamoto & Associates Co., Ltd.)

2.2 Duration of Monitoring Study

Duration of the Study: September 2012 – June 2013

Duration of the Field Study: November 18, 2012 – November 26, 2012

3. Monitoring Results

3.1 Effectiveness

Since the users and curriculum differ with each school, effectiveness will be analyzed separately for (1) comprehensive schools, (2) VTCs, and (3) community colleges.

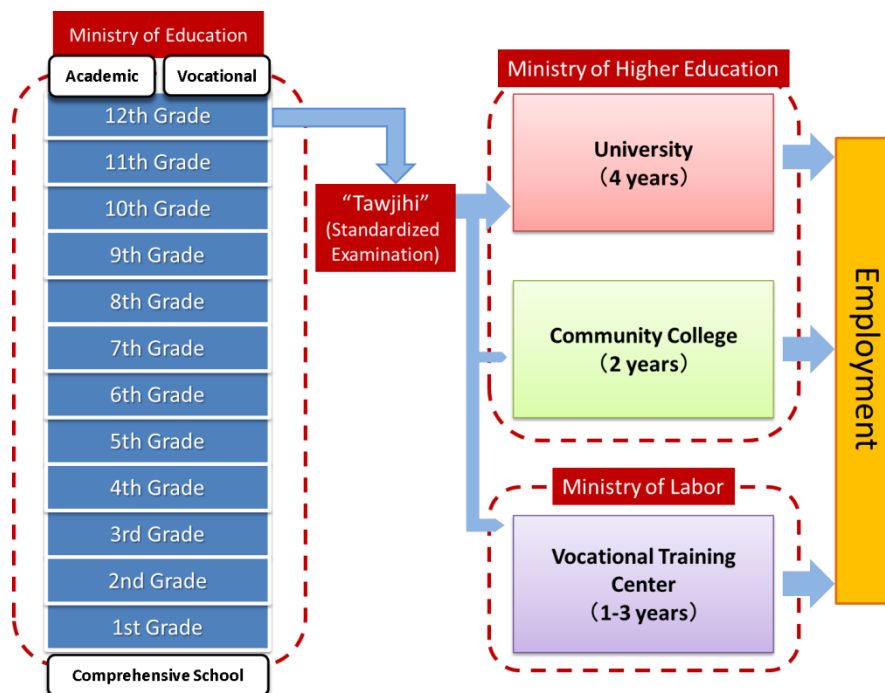
3.1.1 Quantitative Effects

3.1.1.1 Operation and Effect Indicators

3.1.1.1.1 Comprehensive School

(1) Trends in Enrollment of Comprehensive Schools

In 2008, the government of Jordan implemented the Education Reform for Knowledge Economy Project (ERfKE1), and changed the school curriculum. In this context, some of the vocational education programs were incorporated into the academic education. As a result, there are significant changes in the school programs since the time when the ex-post evaluation was conducted, and a simple comparison of the findings from this monitoring with those of the ex-post evaluation became difficult. The diagram below shows the education programs and their responsible ministries (Figure 1).



Source: Ministry of Education, Ministry of Higher Education, Ministry of Labor

Figure 1 Education Programs and Responsible Ministries



Woodwork Workshop at Community College
(Al Husn)



Chemistry Lab at Comprehensive School
(Al Mujoor)

Since the enrollment in comprehensive schools has been, on average, increasing (Table 1: Grades 11 and 12 were selected as representing values for calculation), and has already exceeded the expected level set at the time of project appraisal, it can be said that the overall effect of this project continues to be produced from the time of ex-post evaluation. Increase of enrollment in comprehensive schools overall is due to the rise in the youth population, and the rise in proportion of students pursuing higher education.

Table 1. Changes in the Enrollment at Comprehensive School
(Unit: students)

	Academic	Vocational	Total
2007/2008	139,921	22,804	162,725
	86%	14%	100%
2008/2009	142,866	23,491	166,357
	86%	14%	100%
2009/2010	144,393	22,848	167,241
	86%	14%	100%
2010/2011	152,696	24,621	177,317
	86%	14%	100%

Source: MOE

On the other hand, the enrollment in the vocational education program has remained level at 15% for the past six years. This is due to the Jordanian people's general inclination to aim for higher education, and most of the students at comprehensive school have a tendency to desire education at four-year universities. In other words, vocational education is relatively unpopular compared to academic education. In addition, nearly 100% of students in vocational education go on to a four-year university. In order to raise the enrollment rate in vocational education, MOE, which is the responsible ministry, has taken the following actions: 1) conducting of campaigns toward the tenth

grade students who have not decided the course to pursue, 2) introduction of vocational education at the 8th grade career counseling, 3) introduction of the latest technologies into the vocational education workshops, 4) reviewing of programs on a regular basis to provide a curriculum that meets the needs of the labor market.

(2) Filling Rate

According to the MOE and the comprehensive school of Al Mujoor, one of the sites visited during the survey, there are not much fluctuations in the filling rate; the filling rate for vocational education continues to be under 50%. That of comprehensive school is generally near 100% and in some cases exceeds 100%. On the other hand, vocational education's filling rate, with the exception of popular programs, is often below 50%. This can also be considered as a result of the impact of Jordanian inclination to aim for higher education in general. Statistical data for the filling rate for vocational education was not available since the data is not gathered at the MOE or in the sites that were visited.

At the time of ex-post evaluation, there was a concern over the insufficient capacities of schools resulting from declining number of youths. In this regard, in an interview, MOE stated that it “is planning the capacity of schools taking into account the increase in population and the number of students entering the 1st grade as well as those graduating the class.”.

(3) Graduation Rate and Career Options after Graduation

Graduation rates for academic education and vocational education are both 100%. The graduation rate for vocational education has shown improvement from 55%, the figure confirmed at the time of ex-post evaluation. This can be surmised to be the influence of inclination among Jordanian citizens to aim for higher education. While the majority of graduates will go on to four-year universities, unemployment rate of the graduates from four-year universities is rising every year. On the other hand, there is rising demand for the students with skills obtained from vocational education, and National Center for Human Resources Development (NCHRD) is showing concern over the imbalance in supply and demand of the graduates and the labor market.

For student's course after graduation, jurisdiction is under Ministry of Higher Education, which is in charge of the career of four-year university students after graduation. Therefore, the MOE has no knowledge over the students' course after graduating from university. In an interview with the MOE, their understanding is that collecting information on employment is not the role of comprehensive schools. The response was the same in an interview with Al-Mujoor comprehensive school personnel during the site visit. For this reason, the employment rate data of graduates could not be obtained.

The rise in the unemployment rate among four-year university graduates can be conjectured to be caused by the gap between the demand of the labor market and the curriculum. In conferring the

MOE about this issue, the MOE stated that it is reviewing its programs on a regular basis in order to provide curricula that meet the needs of the labor market. However, on the other hand, there is a contradiction in this explanation since, as stated above, the comprehensive schools are supposedly unaware of the students' courses after graduation, and employment data is gathered after the students' graduation from universities. The MOE is aware of this point, and also of the necessity to cooperate with the Ministry of Higher Education, which is the overseeing agency for universities. This issue will be addressed in the future in the national agenda, Education Reform for Knowledge Economy Project II (ERfKE2) (See 3.4 Others (1) Follow-up of the Ex-post Evaluation Recommendation). Therefore, the gap between the labor market demand and the curriculum cannot be judged only from the data obtained from comprehensive schools. In order to draw a conclusion on this matter, it is necessary to analyze the data on how the curricula of comprehensive schools are contributing to the labor market needs after graduating from four-year universities, the most standard career course for the students from comprehensive schools.

(4) Sustainability of Effectiveness

The number of enrollment has already exceeded the expected number at the time of appraisal (143,125 students), and the schools are filled to their capacities. It can be concluded that the project continues to produce effect. However, in comprehensive schools, although the effectiveness of the support to academic education is high, filling rate for vocational education remains low. This is due to the young people's inclination to aim for higher education.

In the sense that this project provided an opportunity for vocational education, and widened the choice of students after graduation, the effectiveness of this project can be said to be high.

3.1.1.1.2 VTC

(1) Trends in the Enrollment of VTC

The number of students enrolled in VTCs has decreased compared to that during the time of the ex-post evaluation. Although the number has fluctuated since then, it has been stable within a certain range. (Table 2, Table 3) Many students drop out of VTC, and the graduation rate is not 100%.

Table 2. Changes in the Entering and Graduating Students of all VTCs and Five Schools Supported by this Project

(Unit: students)

	VTC overall		Five Schools Supported by this Project	
	Number of Entering Students	Number of Graduating Students	Number of Entering Students	Number of Graduating Students
07/08*	8,790	5,878	1,703	705
08/09	10,456	7,460	2,660	1,106
09/10	10,833	5,768	2,573	907
10/11	10,087	6,462	1,406	970

Source: Vocational Training Corporation Head Office

*value from ex-post evaluation

Table 3. Changes in the Number of Entering and Graduating Students of Five Schools Supported by this Project by School

(Unit: students)

		07/08	08/09	09/10	10/11
Yajouz	Number of Entering Students	655	1,210	1,436	595
	Number of Graduating Students	337	400	207	387
Zarqa	Number of Entering Students	282	386	245	154
	Number of Graduating Students	120	205	177	149
Middle Ghor	Number of Entering Students	291	402	413	255
	Number of Graduating Students	110	110	257	190
Madaba	Number of Entering Students	190	356	165	139
	Number of Graduating Students	59	128	58	84
Abu Nusair	Number of Entering Students	285	306	314	263
	Number of Graduating Students	79	263	208	160

Source: Vocational Training Corporation Head Office

(2) Number of Students by Program

The intention was to obtain by-program information for comparison through this study, but the names of the programs differ by school, and each school offers different programs every academic year. Also, VTC does not collect such statistical data. Therefore, the aggregation of data by the approximative contents and academic level of program contents was performed. (Table 4)

Table 4. Changes in the Number of Entering and Graduating Students of Five Schools Supported by this Project by Level

(Unit: students)

		2009	2010	2011
Continuous Training	Number of Entering Students	230	739	269
	Number of Graduating Students	178	573	243
Continuous Training / First Level	Number of Entering Students	0	67	0
	Number of Graduating Students	0	0	0
Craftsman	Number of Entering Students	127	184	108
	Number of Graduating Students	42	65	104
First Level	Number of Entering Students	261	0	92
	Number of Graduating Students	457	46	52
Semi-Skilled	Number of Entering Students	317	228	178
	Number of Graduating Students	189	157	154
Skilled	Number of Entering Students	879	779	720
	Number of Graduating Students	414	138	430
Technical Diploma	Number of Entering Students	0	0	26
	Number of Graduating Students	0	0	0

Source: Vocational Training Corporation Annual Report, 2011

(3) Filling Rate

The filling Rate of 5 supported schools has improved from 43.7%-169%, at the time of ex-post evaluation, to 176%-300%. (Table 5)

Table 5. Changes in the Filling Rate of Five Schools Supported by this Project

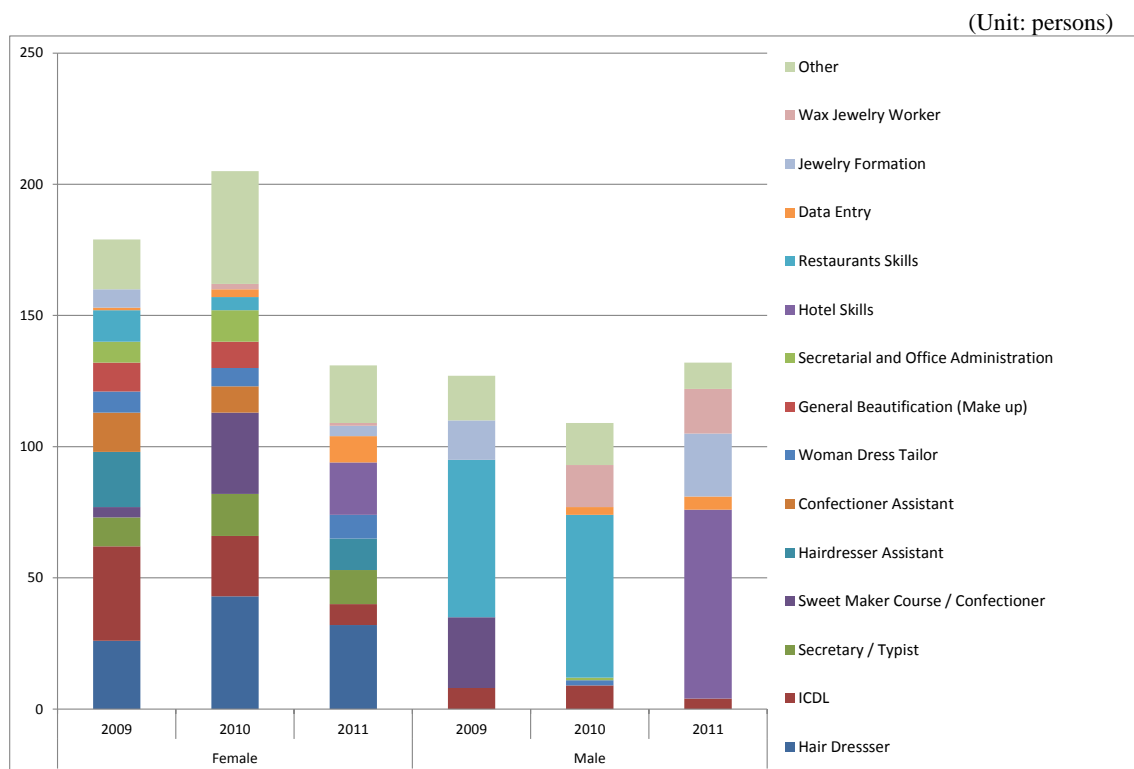
(Unit: students)

		07/08	08/09	09/10	10/11
Yajouz	Number of Male Students	933	1,116	1,337	1,440
	Number of Female Students	123	94	99	54
	Total Number of Students	1,056	1,210	1,436	1,494
	School Capacity	337	450	450	386
	Filling Rate	313%	269%	319%	387%
Zarqa	Number of Male Students	10	0	6	7
	Number of Female Students	524	386	322	257
	Total Number of Students	534	386	328	264
	School Capacity	213	200	200	105
	Filling Rate	251%	193%	164%	251%
Middle Ghor	Number of Male Students	171	132	163	165
	Number of Female Students	120	270	343	191
	Total Number of Students	291	402	506	356
	School Capacity	102	100	100	143
	Filling Rate	285%	402%	506%	249%
Madaba	Number of Male Students	156	305	320	172
	Number of Female Students	34	51	11	39
	Total Number of Students	190	356	331	211
	School Capacity	184	200	200	120
	Filling Rate	103%	178%	166%	176%
Abu Nusair	Number of Male Students	170	196	189	208
	Number of Female Students	331	299	326	203
	Total Number of Students	501	495	515	411
	School Capacity	161	200	200	161
	Filling Rate	311%	248%	258%	255%
Total VTC	Capacity	7,423	10,044	9,660	8,838
	Filling Rate	120%	104%	112%	114%

Source: Vocational Training Corporation Head Office

Filling rate, for the most part, is over 100%. This is due to the revisions in the course capacity resulting from discontinuation of unpopular courses, and switching to popular courses, rather than the increase in the number of students. Filling rate exceeds 300% in some years, and inquiry was done to the responsible government officials on the "accuracy of data" during an interview. According to one of the interviewees at the Vocational Training Corporation, "this is the effect from frequently reviewing the capacity of each course, and there is no problem". There was no information available on filling rate by program.

Capacity of VTC has been slightly decreasing since 2009. According to VTC, this is due to discontinuations and modifications of unpopular courses in order to conform to the demands of the industry. The process of modification and resumption of a course to conform to the market needs generally take nearly one year. As a result, this is reflected in the fluctuation in the capacity of the schools.



Source: Vocational Training Corporation Head Office

Figure 2. Change in the Number of Students at Abu Nsair VTC by Program

Figure 2 shows the number of students by programs at Abu Nsair VTC in the capital, Amman. There are a number of programs at the VTC, and the change of colors indicates the modifications that take place every year in the content of the program. This is due to the fact that the VTC is reflecting the results from the survey regarding the occupational skill conducted to the labor market, on its programs.

(4) Graduation Rate and Employment Rate

VTC's graduation rate is on average 64%, and the employment rate is high at 74.3%. (Table 6, Table 7) Graduation rate has remained unchanged since the time of ex-post evaluation; and this trend has been sustained. According to the interview with VTC, the employment rates of schools supported by this project differ from one another, but are showing trends of improvement overall. It is assumed that the rise in the employment rate is the effect of industry needs study by VTC being reflected on the programs. The Abu Nsair VTC that we visited is located in an area with high demand for sewing technicians. Computerized cutting technology using the latest sewing machine introduced to the school has been highly rated, and the school can hold training programs for garment companies.

Further, through the "Project for Strengthening the Capacity of Training Management of VTC" (November 2006-November 2010) undertaken by Japan International Cooperation Agency (JICA)

created three model VTCs which can provide training programs meeting the needs of the industrial market. Because this project was successful, VTC has expanded the project to nine schools, and currently is proceeding to apply this project to all the remaining schools. Zarqa, a school supported by this program, is included in the nine schools to which the application was extended.

Table 6. Change in the Employment Situation of all VTC

	(Unit: %)			
	07/08	08/09	09/10	10/11
Employment Rate	74.6	-	77.1	74.3
Students with Job Compatible to their Training	36.6	-	28.4	25.4

Source: Vocational Training Corporation Head Office

Table 7. Change in the Graduation Rate of Five Schools Supported by this Project

	(Unit: %)			
	07/08	08/09	09/10	10/11
Yajouz	51.5	33.1	14.4	65.0
Zarqa	42.6	53.1	72.2	96.8
Middle Ghor	37.8	27.4	62.2	74.5
Madaba	31.1	36.0	35.2	60.4
Abu Nusair	27.7	85.9	66.2	60.8
VTC Total	66.9	78.0	53.2	64.0

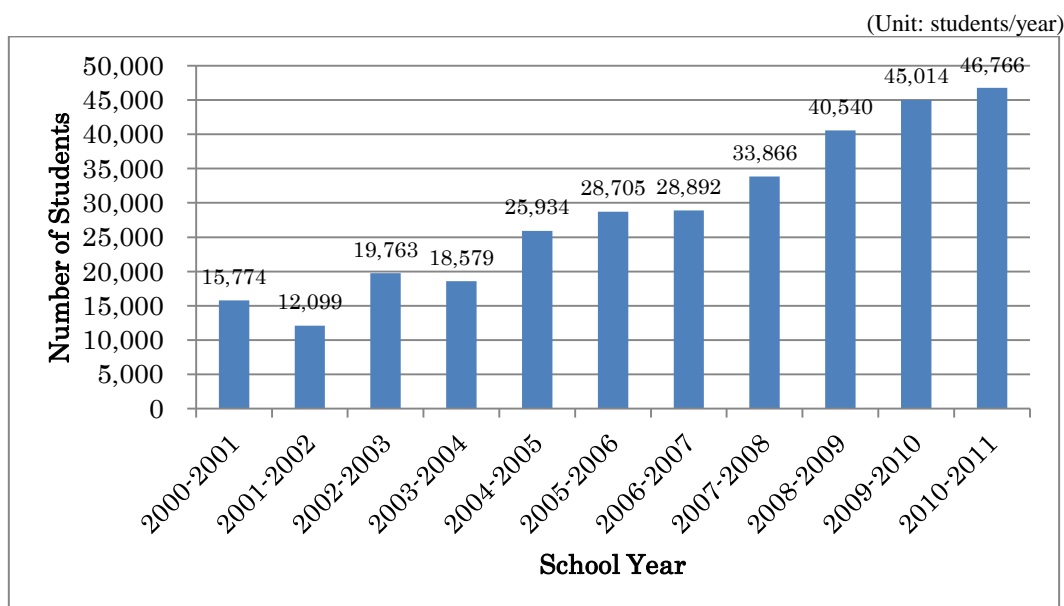
Source: Vocational Training Corporation Head Office

Although the numbers of students are fluctuating, they are stable within a certain range in the long run. Employment rate has exceeded 70%, and is stable. It can be concluded that the project continues to take effect.

3.1.1.1.3 Community College

(1) Trends in the Enrollment at Community College

The reasons for the increase in the enrollment in community colleges are, Balqa University, which is the regulatory agency for community colleges, undertaking a significant reform of the programs to reflect the needs of the labor market; community colleges' constant reviewing of their programs and the attractive programs after the reform; and provision of a chance for the students to transfer to a four-year university which is appealing to Jordanian people with general inclination to aim for higher education. (Figure 3)



Source: BAU

Figure 3. Change in the Number of Students at Community College

Table 10. Changes in the Enrollment at Community Colleges Supported by this Project

	(Unit: students)		
	2009/2010	2010/2011	2011/2012
Amman University College	260	176	0
Al-Husn Polytechnic	913	823	483
Salt	785	730	474
Al-Karak	406	461	562
Ma'an	227	103	185
Irbid	973	892	958
Zarqa	1,074	733	889
Ajloun	482	230	282
Amman Engineering Polytechnic	1,092	625	1,055
Alia	650	572	501

Source: BAU

The number of students at community colleges supported by this project, which was 6,098 at the time of ex-post evaluation, declined after reaching its peak in 2009 (Table 10). From an interview, the reasons for the decrease in the number of students are the discontinuation of an unpopular program major in accordance with the industry demand, and the government's change in its policy for "Tawjihi", which is a standardized examination for universities (required score for entrance into

university was reduced and community college lost students to universities). The government of Jordan is tackling this problem in the national agenda, ERfKE2. (See “3.4 Follow-up of Recommendation (1)”) From the information obtained from Balqa University and from an interview with a school director of each school, reasons for the fluctuation by school are as follows:

- Amman University College: Number of enrollment is zero in 2011, because of the discontinuation of Banking and Finance Program from a lack of market demand. The students attended their classes at another community college (Alia College), and the facilities were continually utilized by the college.

- Al Husn Polytechnic University: The number of students decreased in 2011 because of its closure of the Department of Literature. The purpose of this closure was to make the school a 100% science and technology university, and construction work for expansion of its facilities is under way. In the near future, the school is planning to start new programs in the fields of health and safety, and energy.

- Salt: The number of students in 2011 decreased because of the discontinuation of two-thirds of the juvenile education program due to limited market needs.

- Ma'an: Decrease in the number of students in 2010 is due to the policy of Ma'an municipality to reduce the passing score of Tawjihi. This resulted in more students choosing to attend four-year universities. The passing score was restored to its original score the following year, and number of students has also returned to its previous level.

- Ajloun: The decrease in the number of students from 2010 is due to the replacement of programs which were unpopular with the students. It takes approximately two years to recruit the desired number of students following the renewal of program content, dissemination, and recruitment of students.

- Amman Engineering Polytechnic: The reason for the increase in the number of students after its decline in 2010 is the government's policy, which lowered the passing score of Tawjihi to 55% in 2010, and raising the score to 65% in the subsequent year. In the year the score was lowered, more students chose to go to universities instead of community colleges.

Concerning the impact of the change in the passing score of Tawjihi, it can be reasoned upon observation that the government should take measures in order to conform to the country's policy to increase the number of student enrollment in community colleges.

(2) Graduation Rate and Employment Rate

Employment rate for graduates from community colleges continues to be near 100% due to the high demand for graduates who have mastered the professional skills to meet the community-based needs. Data on the overall employment rate of community colleges are not compiled, but other than female students, who do not wish to work, close to 100% is employed. Graduates often work in

occupations that meet the needs of the community. In addition, many students are working in foreign countries such as the Gulf.

Overall, the number of students at community colleges is increasing. At the community colleges supported by this project, the numbers of students have shown fluctuation, but have remained within a certain range. The main reasons for the fluctuation are the effects of the change in market demand, and the change in the entering number of students from the government's policy to change the passing score of Tawjihi. Students have a tendency to choose four-year universities over community colleges when the Tawjihi score is lowered. Under these circumstances, community colleges are committed on reviewing the programs to reflect the needs of the market, and employment rate is high for graduates with skills that match the needs of the market.

3.1.1.2 Internal Rates of Return (IRR)

In ex-post evaluation report, the internal rate of return was calculated to be 3.1%. In this study, the calculation of the internal rate of return will not be performed, since the basis of calculation used at the time of ex-post evaluation could not be obtained.

3.1.2 Qualitative Effects

(1) Improvement in the Quality of Vocational Education

As can be seen in majors utilizing new technology and establishment of majors utilizing modern facilities, project's contribution to the improvement of the quality of vocational education continues to take effect.

(2) Provision of Vocational Education that Meets Market Needs

project's contribution to the provision of vocational education that meets market needs continues to take effect through establishment of new majors that match the industry needs and through reviewing of existing majors,

(3) Improvement in the Quality of Academic Education

The project's contribution to the improvement in the quality of academic education continues to take effect. The number of students per class was optimized and double-shifts were reduced as a result of renovation and construction of school facilities. In addition, stable learning environment is now secured from the reduction of leased schools.

3.2 Impact

3.2.1 Intended Impacts

3.2.1.1 Improvement of the Balance of Payments and Foreign Currency

It cannot be said that this project has had a direct effect on the balance of international accounts. However, in the interviews with Vocational Training Corporation and BAU, there were comments that there is contribution to the acquisition of foreign currency through remittances from graduates working in foreign countries, such as the Gulf. Also, the MOE stated that “one of the goals is that this project will ultimately lead to an increase in GDP”.

3.2.1.2 Industrial Structure

Although VTC and BAU continue to produce high-level technicians, contribution of this project to the advancement of industrial structure is unknown.

3.2.1.3 Women's Advance into Society

The project continues to support the social advancement of women through provision of vocational training which are useful for their employment. From this effort, increase in the employment opportunities of women can be seen particularly in occupations such as fashion, childcare, and secretary. In an interview, BAU stated that "pertaining to employment of women, even if they do not work after graduation, the level of higher education will ultimately have a positive impact on society as a whole through parenting".

3.2.1.4 Social Stability

Although the project has continued to contribute to the employment of younger generations, the contribution to social stability is unclear.

3.2.1.5 Regional Development

At VTC and community college, the project continues to provide community-based vocational training that meets the needs of local industry, and has contributed to the industry in the region. Also, the project has contributed to regional development through cooperative vocational training with local companies and providing special courses for the companies utilizing the latest facilities installed in the schools. By constantly reviewing the curriculum to reflect the market needs, and producing the graduates with the demanded skills, BAU and VTC has served as a bridge between industry (society) and human resources.

3.2.2 Other Impacts

None

From the above, this project is playing an important role in the social advancement of women and the development of the region. It can be determined that at the time of ex-post monitoring, the impact of this project continues to take effect.

3.3 Sustainability

3.3.1 Structural Aspects of Operation and Maintenance

There has been no change since the ex-post evaluation, and sustainable structure has been maintained. The central executing agency of this project is NCHRD, and presiding agencies for each schools system are: MOE (comprehensive schools), Balqa University under the Ministry of Higher Education (community colleges), and Vocational Training Corporation under the Ministry of Labor (VTCs).

(1) Status of the Operation and Maintenance of Facilities and Equipment

According to the observation and the interview at the time of the site visit, improvement could be seen in the management conditions of buildings, equipment, and facilities invested by this project from the time of ex-post evaluation. From the site visits, it was confirmed that the statuses of the facilities were satisfactory, and they were properly managed. However, since the list of assets which were invested by this project did not exist, the only sources of information were memories and records kept by school staff. There were also cases where the personnel in charge has moved to another school or the record did not exist (fixed asset ledgers exist, but there is no information linking the project and assets), and therefore, overall assessment of the equipment could not be made. According to the interview, service life of most of the equipment provided by this project has already expired; there is much equipment such as computers which need to be replaced, or those which operation and maintenance cost have become substantial.

(2) Other Status of the Operation and Maintenance

Processes for reviewing and modifying the curriculum have been established, and improvement can be seen in the operation and maintenance. VTC and community college is conducting a unified research on employment and market needs, and reflecting these results during the review of the program.

Since almost all of the comprehensive school students proceed to universities, comprehensive schools do not have information on the employment of graduates. In order to conduct a follow-up research for the career path from comprehensive school to university, VTC, or community college, cooperation between the ministries (MOE, Ministry of Higher Education, and Ministry of Labor) is necessary. In response to ERfKE1, NCHRD created an information database in 2012, encompassing

comprehensive schools, universities, and community colleges. Such information is useful in the operation and maintenance of this project. This information is also distributed as a booklet in summarized version, and is planned to be disclosed over the internet in the near future. This data is expected to be used in decision-making for the operation and maintenance of the education system. There is also a plan to encompass data for VTC.

3.3.2 Technical Aspects of Operation and Maintenance

The technical skills of operation and maintenance continue to be provided, and high level of sustainability can be expected. Each school receives adequate technical support from its supervising agencies: comprehensive school, VTC, and Balqa University. In addition, concerning operation and maintenance of curriculum, through the implementation of JICA's "Project for Strengthening the Capacity of Training management of Vocational Training Corporation" the findings from research on employment and industrial needs are reflected systematically to the review processes of the curricula. Its effect can be seen in the employment rate and the filling rate. Application of this successful case of the initial model school is planned to be expanded to all schools.

3.3.3 Financial Aspects of Operation and Maintenance

(1) Government Budget

10% of the government budget, 4.5% of the GDP, is allocated for education (2011). This remains unchanged since the ex-post evaluation.

(2) Budget for Facility Operation and Maintenance Expense

The overall budget of the MOE is 6 million Jordan Dinars (JOD). This is the budget for the maintenance cost of the existing facilities, and does not include the replacement cost. Budget for the VTC, which fluctuates by year, is 85,000 to 100,000 JOD. Tuition revenue per student at Balqa University is one-third of the total cost; university budgets are in a tight situation. At Balqa University, the shortfall is complemented by the revenues from the diploma programs.

As a shared comment from the interviews, the budget is insufficient for the replacement of facilities and equipment which is near or past its service life. The costs for maintaining these equipment are increasing every year. At the time of this study, no measures have been taken for budget allowance. However, the state of the facilities and equipment were satisfactory; by using the equipment with care, the equipment continued to be fully utilized after the expiration of its service life.

From the above, no problem was detected concerning the operation and maintenance, and there is no problem with sustainability. However, regarding the equipment ending its service life in the near

future, action is necessary since the allowance budget has not been secured.

3.4 Others

(1) Follow-up of the Ex-Post Evaluation Recommendation

Jordan is committed to the realization of the recommendations mentioned in the ex-post evaluation report, through the national agenda, ERfKE2. Until now, the Jordanian government has continually placed emphasis on vocational education. However, in actuality, there were discrepancies in the supply and demand such as those mentioned below, and the plan could not be realized:

1. Student's general inclination to aim for higher education, and high unemployment rate of university graduates.

2. Demands are high for skilled workers such as industrial technicians, but those occupations are unpopular with students.

The government of Jordan is aiming to ultimately expand the vocational education by reviewing the career path and vocational training through cooperation with MOE, Ministry of Higher Education, and Ministry of Labor, which are the three ministries responsible for the educational system. This objective is also listed in the action plan of National Agenda, ERfKE2, and is targeted to be achieved by 2015.

Currently, VTC is conducting an assessment every two years for training needs and follow-up study of graduates, and utilizing this information to review its programs. BAU is building an information database of all graduates, and advancing the construction of Career Development Center. There is currently one Center operating in the middle region. BAU is planning on building one center each in the northern and southern regions, and utilize these three centers to cover the entire country.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

Educational equipment and facilities built and renovated by this project continue to be utilized, and are contributing to the expansion of educational opportunities and to improving the quality of education. Also, the impact on the acquisition of foreign currency and on the contribution to the local economy continues to take effect. The enrollment rate for the vocational education remains low, just under 15%, but this is recognized to be a problem solved by cooperation between ministries, and its resolution is set as an objective in the context of education reform. It is expected that the efforts by policy makers continue in the future. As for sustainability, equipment invested by this project is maintained in good condition, and, as a result of ERfKE, a review of vocational training to meet the market needs is being held every year. In addition, it can be concluded that the sustainability of this

project has improved, since it was confirmed that the source of funds needed to sustain this education system was secured.

4.2 Recommendations

4.2.1 Recommendations to the Implementing Agency

It was generally noted that, there is insufficient budget for replacement of certain facilities and equipment which is near to or has already passed its service life (especially computers). These equipment's operation and maintenance cost is substantial and therefore requires replacement. School personnel commonly asserted that the budget was insufficient. It is desirable for the government of Jordan to consider provision of budget for the replacement of these equipment and facilities.

4.3 Lessons Learned

When verifying the status of the operation and maintenance of equipment and facilities, there was no choice but to rely on the memory of school staff and on the records kept by individual school staff since the list of the assets invested by this project did not exist. In this context, a comprehensive checking of the equipment could not be performed, since the personnel in charge have moved to another school since, and the records in the schools' fixed asset ledger did not mention the project name by which the equipment was invested. It is desirable for the recipient government to create and store a list of equipment upon the completion of the project, and to utilize this at the time of ex-post evaluation and ex-post monitoring.

Comparison of the Original and Actual Scope of the Project

Item	Original	Actual
(1) Output		
(a) Comprehensive Schools	New construction: 31 schools Expansion: 21 schools Procurement of equipment and furniture: 66 schools	New construction: 31 schools Expansion: 21 schools Procurement of equipment and furniture: 66 schools
(b) Community Colleges	Expansion: 7 schools Procurement of equipment and furniture: 11 schools	Expansion: 7 schools Procurement of equipment and furniture: 10 schools
(c) VTCs	Expansion: 3 schools Procurement of equipment and furniture: 5 schools	Expansion: 3 schools Procurement of equipment and furniture: 5 schools
(2) Project Period	July 30, 1997–June 2002	July 30, 1997–Nov. 13, 2005
(3) Project Cost		
Total of ODA Loan Portion	7,123 million yen	6,027 million yen
Civil Works	3,914 million yen	3,826.85 million yen
Equipment & Furniture	2,761 million yen	2,235.62 million yen
Consulting Services	110 million yen	87.91 million yen
Slush Fund	638 million yen	1JD = 169.49 yen
Exchange Rate	1JD = 154.62 yen (Jan. 1997 at time of appraisal)	(Nov.2005 completion of disbursement)