

Arab Republic of Egypt

FY2016 External Ex-post Evaluation Report

Technical Cooperation Project

“The Project for Establishment of Egypt-Japan University of Science and Technology
(E-JUST)”

External Evaluator: Ryutaro Koga, Global Group 21 Japan

0. Summary

“The project for Establishment of Egypt-Japan University of Science and Technology (E-JUST)” (hereinafter referred to as “this project”) was implemented by the Egyptian Ministry of Higher Education and Egypt-Japan University of Science and Technology (hereinafter referred to as “E-JUST”) as counterpart organizations. The purpose of the project is to open a public educational facility at New Borg El Arab City in Alexandria District with the concept of “small class sizes, graduate school centered, research-oriented, practical and international standard education offering”. And by incorporating the characteristics of engineering education in Japan, to establish the basis for E-JUST to become one of the top science and technology universities in the world. This project was consistent with Egypt’s higher education policy and development needs for high-level human resources at the time of planning and completion, and also Japan’s aid policies towards Egypt, making relevance of this project “high”. The organizational cooperation of Japanese support universities (JSU) and provision of the latest equipment for research contributed to the establishment of E-JUST’s research and education abilities. But some crucial elements for establishment, such as the hiring of various faculty and staff, establishment of relevant legal status for E-JUST, and campus construction were delayed mainly due to the influence of political and social turbulences caused by two major political changes. Since the completion of this project, Phase 2¹ is currently being carried out smoothly and the project purpose is being achieved. It is, however, too early to evaluate the achievement of the overall goal, as it was assumed to be achieved in 10 years and only 6 years passed after its opening. Together, the effectiveness and impact of this project was considered “moderate”. The project schedule was almost finished on time, but due to an increase of expert dispatches through outsourcing contracts with supporting universities, and an increase of equipment provision, the project cost surpassed the initial plan, thus the efficiency of this project is “medium”. There are no major issues with this project’s policy, organizational, technical and financial aspects. Therefore, the sustainability outlook of this project is “high”.

In the light of the above, this project is evaluated to be “satisfactory”.

¹ Egypt-Japan University of Science and Technology Project Phase 2 (2014-2019) (following this project, hereinafter referred to as “Phase 2”)

1. Project Description



Project Location



E-JUST Temporary Campus and Dormitory Buildings

1.1 Background

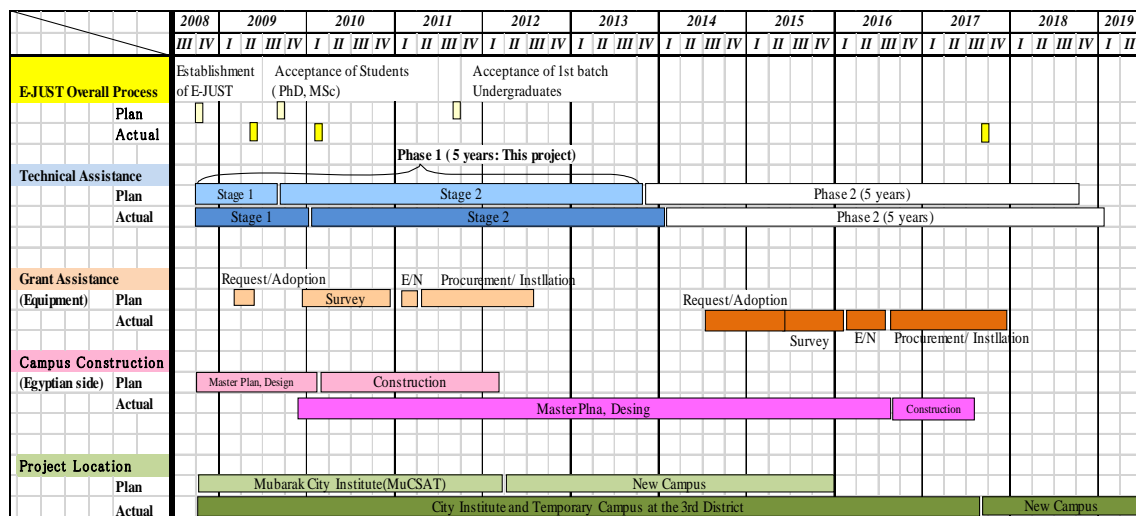
In Egypt, the number of enrolled students increased significantly due to the introduction in 1964 of a tuition free policy for national universities, and thus the decline in the quality of education became obvious by early 2000. For example, the number of students at Cairo University, the highest academic institution in the country, exceeded 260,000; and the number of students per faculty within the faculty of engineering was about 30, which was three times that of the top engineering universities in Japan and the world. This made high standard and quality education difficult. Especially in the field of science and engineering where such institutions were limited, many students went to overseas graduate schools and research institutions in Europe or United States. After graduation they would not return, causing a human resource shortage of individuals with advanced and specialized knowledge. To cope with this issue, the Egyptian government was working on reforming higher education to foster qualified personnel for nation building, by providing high quality education based on economic and social needs. Therefore, at the 3rd conference (2005) of “Japan-Arab Dialogue Forum”, initiated in 2003 by the Japanese Government, it was proposed to establish a national university, “Japan Arab Institute of Technology”, with the concept of “small class sizes, graduate school centered, research-oriented, practical and international standard education offering”, while incorporating the advantages of Japanese style engineering education. This project was developed from the concept proposed at the forum².

² Project preparation advanced after the request letter was submitted from the Egyptian Government to the Japanese Government in August 2005. In May 2007, during the summit meeting, President Mubarak directly requested Prime Minister Abe for this project support, and from the beginning high-level commitments helped in the progress of this project.

1.2 Outline of the project³

This project was initiated in October 2008 by the Egyptian Ministry of Higher Education and the newly established E-JUST as counterpart organizations in New Borg El Arab City, Alexandria District, located about 300 km northwest of Cairo. The project purpose was to open E-JUST and to establish the foundation for E-JUST to become one of the top science and technology universities in the world. In March 2009, a “bilateral agreement⁴” was signed confirming the long-term commitment of both governments towards project cooperation. E-JUST started as a graduate school university and this project is focused on the cooperation for the graduate school’s research and education.

For this project, an ODA grant aid for equipment procurement support necessary for E-JUST was planned from the beginning. Also, the next phase in this project (Phase 2) to enable “E-JUST to become the base for fostering excellent personnel to contribute to the development of Egyptian Industry and society “, started with 5-year project span. This was also planned when this project commenced. Figure 1, shows the overall process of the E-JUST establishment project described in the Ex-ante Evaluation Study Report of E-JUST (October 2009). The delay of the original plan was mainly due to two major political changes from 2011 to 2013 as explained in 3.1.1 Consistency with development policy.



Source: Ex-ante evaluation study report and E-JUST

Note: “Actual” column after December 2016 are estimation at the time of ex-post evaluation.

Figure 1 E-JUST establishment project overall process

³ This ex-post evaluation was conducted based on the Project Design Matrix (PDM), March 12, 2012, which revised the previous PDM reflecting the proposal made in the Midterm Review in 2012.

⁴ “An agreement between the Government of Japan and the Government of the Arab Republic of Egypt concerning the Establishment of the Egypt-Japan University of Science and Technology (E-JUST)” was signed in March 2009. This agreement includes the establishment of undergraduate courses of engineering. The implementation of this project was conducted in two stages (Stage1: up until the acceptance of first batch of students, Stage 2: establishment of the foundation to become a leading university by practicing the basic concept of E-JUST). This evaluation evaluates Stage 2 as the Stage 1 result is interim output to achieve the project purpose of Stage 2.

It was agreed between the Egyptian and Japanese Government that the new campus construction of E-JUST (about 10 billion Japanese yen: including ancillary infrastructure such as electricity, water and sewerage, roads and maintenance cost of equipment) would be covered by the Egyptian side as an input element. Completion of the campus was scheduled in the 1st quarter of 2012⁵. Procurement of equipment (for research and education) was scheduled to be provided mainly by ODA grant aid scheme from Japan after the second quarter of 2011. Until that time, it was planned that some equipment would be provided by this project and/or borrowed from City Of Scientific Research And Technological Applications (SRTA-CITY), one of leading national research institutes in Egypt⁶.

Overall Goal	E-JUST will continuously produce outstandingly talented leaders in Egypt and Middle East African countries towards further economic and social development.	
Project Purpose	Foundation to become a world class leading university is established by steadily practicing the basic concept of E-JUST.	
Output	Output 1	Research ability of E-JUST faculty is improved to international standard level.
	Output 2	E-JUST students' practical and creative research abilities are cultivated through research-oriented education.
	Output 3	Competent technical staff who support research activities are secured and operating.
	Output 4	Collaboration between E-JUST and the industry in Egypt will be promoted.
	Output 5	Improve the management ability of management team and secretariat, including the E-JUST president
	Output 6	Information on the organization, research and education of E-JUST will be actively disseminated on a global scale.
Total cost (Japanese Side)	2,947 million yen	
Period of Cooperation	October 2008 - January 2014 (Extension period: October 2013 - January 2014)	
Implementing agency	Egypt-Japan University of Science and Technology (E-JUST)	
Other Relevant Host Country's Agencies / Organizations	Ministry of Higher Education (MOHE)	
Supporting Agency / Organization in Japan	12 Japanese support universities (Hokkaido University, Tohoku University, University of Tokyo, Waseda University, Keio University, Tokyo Institute of Technology, Nagoya University, Kyoto University, Kyoto Institute of Technology, Ritsumeikan University, Osaka University, Kyushu University, and Center of Middle East Cooperation, Middle East Investigation Committee, Tokyo Chamber of Commerce and Industry	

⁵ At the time of Ex-post evaluation, university operations of E-JUST were being conducted in City Research Institute located about 1km north-east of the new campus, and 14 renovated dormitory buildings about 0.5km east of the Institute.

⁶ SRTA-CITY is located 1km eastward of E-JUST new campus. Before 2011 it was called "Mubarak City Institute for Scientific Research and Technology Applications"

Related projects	“Egypt-Japan University of Science and Technology Project Phase 2” (Technical Cooperation) (February 2014 ~ 2019), “Plan to introduce clean energy utilizing sunlight” (Grant Aid) (2009 ~ 2018) “E-JUST Education and Research Equipment Development Plan” (Grant Aid) (From 2016 ~ 2017)
------------------	--

For the implementation of this project, a coordination support committee in Japan comprised of 12 JSU was organized⁷, and four program secretariat universities; Kyusyu University (in charge of Electronics & Communication Engineering program), Waseda University(Computer & Information Eng., Mechatronics & Robotics Eng.), Kyoto University(Material Science & Eng., Chemical & Petro-Chemical Eng.), Tokyo Institute of Technology (Management System, Energy Resources & Environmental Eng.) participated. Under this committee, the Working Group for university organization & operational strategy, Working Group for Campus facilities, and each program’s secretariat committee were set up and regular meetings were held to support not only research and education, but also university operations.

1.3 Outline of the Terminal Evaluation

1.3.1 Achievement Prospect of Project Purpose at the Terminal Evaluation

The Terminal Evaluation (May 2013) described that, although some indicators were not achieved, the Japanese and Egyptian sides were tackling issues promptly in a concerted manner, and considering the effective contribution of Japanese supporting universities, the project purpose is projected to be achieved by the completion date. It further noted that upon (i) establishment of E-JUST legal status, (ii) new camps construction, (iii) expansion of faculty and administration staff, further significant improvements are expected.

1.3.2 Achievement Status of Overall Goal at the Terminal Evaluation

The Terminal Evaluation described that “after the new campus is built and E-JUST becomes expanded with the acceptance of undergraduates of Engineering Faculty, it would start moving in the right direction to become one of top 500 universities in the world within 10 years”, and that “the collaboration system of E-JUST with industries is being developed, paving the way to stable employment for graduates. And E-JUST will become a core science and technology university which produces talents performing excellently in academia and business, contributing to the development of Egypt, Arab, and Africa through gradually improving the research and education environment.”

⁷ Hokkaido University, Tohoku University, Tokyo University, Waseca University, Keio University, Tokyo Institute of Technology, Nagoya University, Kyoto University, Kyoto Institute of Technology, Ritsumeikan University, Osaka University, Kyusyu University.

1.3.3 Recommendations from the Terminal Evaluation

Table 1 Recommendations from the Terminal Evaluation

Item	Description
Early construction of new campus	Because delay of the new campus affected the enrollment of students and research activities, early completion is desired. Until then, it is recommended to make use as best as possible of the current temporary campus.
Establishment of legal status	It is necessary to secure required budget and input personnel.
Expansion of faculty and other staff	In order to respond to the various research needs of industries and students, a sufficient number of faculty, technical staff and other administrative staff are needed.
Basic data accumulation and management	Basic data accumulation and data management regarding university operations in general, including number of papers published, acquired research funds, faculty member lists, etc. should be strengthened.
Support from Japan side	Longer dispatch periods of faculty members, support towards university operations other than research and education, and an increase of supporting universities outside of the current 4 anticipating the possibility of support for Liberal Arts education, would be optimal.

Source: Terminal Evaluation Report

2. Outline of the Evaluation Study

2.1 External Evaluator

Ryutaro KOGA (Global Group 21 Japan, Inc.)

2.2 Duration of the Evaluation Study

This ex-post evaluation survey was conducted as follows;

Survey Period: October 2016- September 2017

Field survey Period: December 4-24, 2016, March 25-31, 2017

3. Results of the Evaluation (Overall Rating: B⁸)

3.1 Relevance (Rating: ③⁹)

3.1.1 Consistency with the Development Plan of Egypt

At the time of planning, the Egyptian Government put “human resource development and employment increase” as one of seven major goals in “the long-term socio-economic development vision” (2002/03 - 2021/22). It also mentioned “development of education and scientific research” as one of the “ten major programs for development”, and prioritized

⁸ A: “Highly satisfactory”, B: “Satisfactory”, C: “Partially satisfactory”, D: “Unsatisfactory”

⁹ ①: Low; ②: Fair; ③: High

expansion of enrollment capacity of public education, education options, education responding to labor market needs, improvement of education quality, the improvement of quality of university education, etc. In the policy of MOHE, “development of excellence and competitiveness” and “leadership for national development” were the main pillars for the development of higher education. In addition, “Expansion of graduate school education and scientific research” was stated as one of the criteria to achieve improvement of the quality and efficiency of higher education, introduction of new education methods, international accreditation of degrees, etc. This project had high consistency with the above development policy and overall higher education policy.

The above policy was hindered during the two major political changes, the so-called “Arab Spring” from 2011 to 2013, but it has been stabilized and maintained since 2014 and is still valid now¹⁰. Therefore, it was determined that consistency with the Egyptian development policy has been maintained even at the completion of the project (2014).

3.1.2 Consistency with Development Needs

At the time of project planning, the decline of education quality in Egypt was apparent caused by the rapid increase of students resulting from the free tuition policy, and top talent was opting to go overseas for better education.

It is said that Egypt’s economic growth requires development in industries other than traditional tourism and agriculture. In order to foster highly skilled human resources that contribute to advancing industries, MOHE was planning to establish more than 20 national universities at and after the time of planning for this project. At the time of the ex-post evaluation, university shortages were continuing, such as 5 to 7 national universities scheduled to be opened in 5 years. Additionally, according to some faculty members of E-JUST, Cairo and Alexandria universities; the outflow of human resources had not stabilized yet, continuing the high demand for engineering education.

Considering the above, it is judged that this project is highly consistent with development needs at the time of project planning and project completion.

3.1.3 Consistency with Japan’s ODA Policy

At the time of planning, Japan’s “Country Assistance Program (June 2008)” determined “realizing sustainable growth and employment creation” in Egypt as a priority area in order to support the shift of Egypt towards a competitive and stable economic society. Thus, it was planned

¹⁰ The Egypt Revolution, which occurred in January 2011 ended President Mubarak’s 30-year regime. The amendment of the Constitution and Parliament Election followed, and the Muslim Brotherhood, a Muslim political party took over power. But the political situation did not stabilize and the government collapsed again after the military coup d’état in July 2013. In January 2014, the Constitution was amended again and the political situation stabilized. In June 2014, after the Presidential election, Abdel Fattah Saeed Hussein Khalil El-Sisi, who was Minister of Defense, became President.

“to support, besides skilled workers, higher education in the field of science and engineering indispensable to foster industrial human resources with advanced expertise and skills who can engage in research and development. Japan’s “Project Development Plan for Egypt (May 2009)” was based on the above policy and both are highly consistent with this project. In addition, this project utilizes the excellent scientific and technological capabilities of JSU, and consistency with the science and technology foreign policy promoted in “The 3rd Scientific Technology Basic Plan” was also high¹¹.

Based on the above, this project is evaluated as having high relevance with Egypt’s development policy, development needs, and Japan’s aid policy.

3.2 Effectiveness and Impact (Rating: ②¹²)

3.2.1 Effectiveness

3.2.1.1 Change of Project Design Matrix (PDM)

The project design matrix of this project was modified at mid-term review (March 2012). At that time, the indicator, “E-JUST is certified by the National Authority of Quality Assurance and Accreditation for Education (NAQAAE)”, which was one of the two benchmarks measuring the achievement of the project purpose; was modified to “Common Understandings about E-JUST remains as an official agreement between Egyptian and Japanese sides”. This was because the establishment of the NAQAAE certification system was delayed and the prospect of certification was not high. This change was reasonable to maintain the management philosophy of E-JUST without the E-JUST establishment law during the time the government was in a state of confusion. The government entered stability in 2014 and since then, it has been deemed unnecessary.

In addition to the above; corrections, clarification and improvement of benchmark indicators were made, and those were appropriate changes.

3.2.1.2 Achievement of Project Outputs

In this project, in order to realize E-JUST’s basic concept, “small class sizes, graduate school centered, research-oriented, practical and international standard education offering”, the following activities were conducted.

(1) Establishment of international standard research ability (Output 1)

Senior professors of JSU were dispatched as long-term experts in charge of three academic departments¹³ and an engineering department, as well as many short-term university

¹¹ (Approved by Cabinet meeting in March 2006) Based on this plan, multilateral and international projects were implemented. It aimed to enhance trust in Japan by utilizing Japan’s science and technology and providing solutions to global mutual issues or responding to requests from foreign countries.

¹² Sub-rating for Effectiveness is to be put with consideration of Impact

¹³ Under following 3 departments, initially 7, later 8 programs were placed; Dept. of Electronics, Communication and Computer Engineering (Electronics & Communication Eng., Computer & Information Eng.), Dept. of Innovative

professor experts. While conducting guidance on Japanese style research and education, they supported various group research and detailed reviews of research papers. In addition, state-of-the-art research equipment was provided and the development of suitable research environment necessary for a research-oriented university were promoted. As a result, publications of research papers in international journals greatly increased, and some research funds were acquired. However, due to the fact that E-JUST was a new university and the political unrest, collaborative research with Japanese universities was limited compared to the assumed. From the above, it is judged that the achievement on establishment of international standard research ability is “largely achieved”.

(2) Practicing research-oriented education (Output 2)

It was planned that all students would participate in laboratory and practice problem-solving type learning. According to the Terminal Evaluation, problem-solving type learning was being adopted, but it could not necessarily be concluded that research projects and laboratories were sufficiently launched in all the programs, and that “they write dissertation thesis based on research activities.” According to the beneficiary survey¹⁴ of the graduates at the ex-post evaluation, the percentage who answered that they wrote theses based on their activities in the laboratory was 84% (31 out of 37 people). Also, at the time of completion of the project, the number of graduates was small¹⁵, and most of them were university faculty of other universities who came to E-JUST to obtain a degree and return to their university after graduation. It was not confirmed whether the employer side of industries etc. believed that the research capacity of graduates of E-JUST had improved. Therefore, it is judged that the achievement of practicing research-oriented education is “achieved at a limited level”.

(3) Establishment of research supporting system (Output 3)

It was planned to hire technical staff and place them in the technical management department (TMD) to support research experiment and equipment maintenance including trainings. There were only 4 staff members in TMD as of September 2013, less than the planned “one or more for each of the 8 programs”. According to the beneficiary survey for graduates, the ability of the technical staff regarding research experiment support, maintenance and management method of the equipment was low. It was necessary to have sufficient involvement of the

Design Engineering (Mechatronics & Robotics Eng., Industrial Eng. and Management System, Material Science and Eng.), Dept. of Energy and Environmental Engineering (Energy Resources Eng., Environmental Eng., Chemical and Petro-chemical Eng.).

¹⁴ During the ex-post evaluation, targeting current students and alumni (80 each) and all faculty members (35), a questionnaire survey through internet mail was conducted after group interviews and prior questionnaire test. Current students and alumni were chosen from student lists by random sampling. Respondents were current student 47 (response rate: 59%), alumni 37 (46%), faculty members 23 (66%), total 107.

¹⁵ 44 students completed MSc and PhD courses and there were 122 students at the time of project completion. Most of MSc students advanced to PhD course.

experienced Japanese technical advisor for procurement, storage and maintenance of the equipment. The equipment committee was established in 2010, and consisted of representatives from each program to determine the priority of procurement and maintenance (including purchase of expendable supplies) of equipment. However, until the number of TMD staff was expanded in phase 2, TMD could not do the coordination work sufficiently. Therefore, the achievement of establishing the research supporting system is judged as “not achieved”.

(4) Establishment of an industry-academia collaboration system (Output 4)

An industry-academia collaboration team was organized and the Center for Innovative Technology (CINTEC) was established in 2013. However, the staffing arrangement was small, only two faculty members, two professionals, and one clerical staff, which proved insufficient. 18 projects/collaborative research with Egyptian corporations were carried out by the time of Terminal Evaluation survey, but this was focused on specific programs such as Computer Science and Information Engineering and Materials Engineering. In addition, in the interviews with several corporate stakeholders, those who knew E-JUST were only about 30%, less than the target of 50% (or more). Based on the above, it is judged that the achievement of the establishment of an industry-academia collaboration system is “achieved at a limited level”.

(5) Establishment of a university management system (Output 5)

The staffing of senior management and administrative positions, the planning of hiring and training of additional personnel, development of a financial management system and long-term financial strategy were aimed; and it was targeted that 75% or more of faculty and students were satisfied with the management and operation. However, due to the new campus construction delay, acceptance of students/faculty were delayed, leading to less than planned number of executive staff and administrative staff¹⁶ at the time of Terminal Evaluation. Staff recruitment and a staff capacity improvement plan were prepared and partially implemented, but the internal training system was not fully planned and implemented. Training on the introduction of a new accounting system was conducted, and financial statements in compliance with the Egyptian accounting standard and international standards were prepared. The long-term financial strategy and management plan was outlined¹⁷ in the “E-JUST Road Map 2018” created in 2013. In the satisfaction survey conducted during the Terminal Evaluation, 81% answered that they were “satisfied” or “mostly satisfied” with management, and 61% with the secretariat. From the above,

¹⁶ Four vice presidents (in charge of education/ research/international affairs/general and financial affairs) and 22 administrative departments were described in the organization chart at that time, but the vice president in charge of international affairs was vacant and 13 departments were not yet established.

¹⁷ The long-term financial strategy includes the following: efficiency of operation/improvement of productivity/diversification of revenue/effective use of current real estate assets/strengthening of fund raising, donation/use of waiver of tuition fee and effective tuition support/strengthening and promotion of international collaboration/establishment of the E-JUST fund/establishment of faculty for international business and humanities.

it is judged that the achievement on the establishment of the university management system was “achieved at a limited level”.

(6) International dissemination of information (Output 6)

E-JUST actively hosted international symposiums and academic societies every year. As for academic research exchange agreements with universities and research institutions, 14 agreements were concluded by the time of Terminal Evaluation. Apart from this, 24 additional agreements were concluded with Japanese company “Mitsubishi Corporation”, Egyptian industries and domestic universities. In addition, the minutes of the university committees etc. were shared with JSU. From the above, it is judged that international information dissemination is “achieved”.

Table 2 Achievement of Outputs

Output	Achievement
<p>Output 1</p> <p>Research capacity of E-JUST’s academic staff is strengthened to match international standards.</p>	<p>(Largely Achieved)</p> <ul style="list-style-type: none"> ● The number of papers published in international journals was 55 out of 103, and the number of papers presented in international academic conferences was 251 (as of September 2013), surpassing their targets. ● Except for some programs, the acquisition of competitive research funds advanced. ● Joint researches with Japanese universities were conducted in only 3, (Material Eng., Environmental Eng. And Mechatronics-Robotics Eng.), out of 8 programs, as there were security issues and E-JUST was a newly established institution.
<p>Output 2</p> <p>Capacity of E-JUST’s students to conduct practical and creative research is cultivated and enhanced by conducting ORT (on the research training/education)</p>	<p>(Achieved at a limited level)</p> <ul style="list-style-type: none"> ● It was expected that all students should implement Project Based Learning in laboratories. Based on the Terminal Evaluation, not all programs set up sufficient laboratories for PBL. ● The Beneficially Survey of graduated students at the ex-post evaluation showed that 84% (31 out of 37 respondents) answered that they wrote their papers based on activities done in laboratories. ● At project completion, the number of graduates was small and most of them were young faculty dispatched from other universities to obtain degrees and returned to their universities after graduation. Whether or not private company employers etc. considered that those graduates possess practical and higher than average ability of conducting research could not be confirmed.
<p>Output 3</p> <p>Capable technical staff, who support research activities; are recruited and duties performed.</p>	<p>(Not achieved)</p> <ul style="list-style-type: none"> ● There were only 4 staff members in the Technical Management Department (TMD) in charge of equipment maintenance at September 2013, which was short of the target (one or more for each of the 8 programs). ● According to the beneficiary survey, there were cases where technical staff were not familiar enough with methods of research support and equipment maintenance. This led to the need for sufficient involvement of a Japanese technical advisor from a Japanese university for procurement, operation and maintenance of equipment procured in the project.

	<ul style="list-style-type: none"> ● Although an equipment committee was organized and discussed the priorities of procurement and maintenance (including purchase of expendables) of equipment, TMD could not coordinate the meetings well until Phase 2 started when TMD staff were expanded.
<p>Output 4</p> <p>Collaboration between E-JUST and industries in Egypt and Japan is enhanced.</p>	<p>(Achieved at a limited level)</p> <ul style="list-style-type: none"> ● A specific team for collaboration efforts between E-JUST and industries was created within the Center for Innovative Technology (CINTEC) in 2013, but the personnel assigned were only 2 faculty members, 2 professionals and one clerical staff, making the collaboration effort insufficient. ● By the time of the Terminal Evaluation, 18 joint/contract research activities were conducted with industries in Egypt, but those were only based on Computer & Information Engineering or Material Engineering programs. ● According to the hearing from some companies at the Terminal Evaluation, only about 30% were familiar with E-JUST activities, compared with a target of 50% or more.
<p>Output 5</p> <p>Capacity of the senior management and the administrative staff of E-JUST to successfully manage the university are enhanced.</p>	<p>(Achieved at a limited level)</p> <ul style="list-style-type: none"> ● The staffing of senior management and administrative positions, the planning of hiring and training of additional personnel, development of a financial management system and long-term financial strategy were aimed; and it was targeted that 75% or more of faculty and students were satisfied with the management and operation. According to the satisfaction survey from the Terminal Evaluation, 81% of respondents were “satisfied” or “almost satisfied” with management, but the satisfaction level with the secretariat remained at 61%. ● Due to the delay of the new campus construction, acceptance of students and faculty members were hindered, and a vice president in charge of international affairs and other senior staff could not be appointed as scheduled. ● Plans for new staff recruitment and training was prepared and partially implemented, but an internal training system was not yet sufficiently developed and implemented. ● Training for a new accounting system was conducted to introduce financial statement preparation in compliance with both Egyptian and international standards, and a long term financial strategy to strengthen E-JUST’s financial foundation was formulated.
<p>Output 6</p> <p>Active information dissemination of E-JUST (organization, research and education) to Egypt and to all over the world is undertaken.</p>	<p>(Achieved)</p> <ul style="list-style-type: none"> ● E-JUST hosted international symposiums or conferences every year and 14 Memorandum of Understandings (MOU) on academic and research cooperation were signed (as of May 2013). Other 24 cooperation agreements were conducted with Japanese company (Mitsubishi Corporation) and Egyptian companies/ universities.

Source: E-JUST materials, Terminal Evaluation Report, Beneficially Survey results at the Ex-post evaluation

Note: “The administrative staff” in Output 5 is not defined in the Ex-ante evaluation, etc., but it can be understood as those staff or organization other than senior management level which is in charge of “enhancing the university operation and management successfully.”

3.2.1.3 Achievement of Project Purpose

The project purpose of “Foundation to become a world class leading university is established by steadily practicing the basic concept of E-JUST”, and the two indicators set for this project purpose are shown in Table 1. As shown, both indicators were achieved with the contribution of the organizational cooperation of JSU and provision of the latest equipment for research. However, whether or not the “foundation of university” has been established needs to be judged by taking into account the aspects other than the two indicators, such as the legal status of E-JUST, the establishment of a financial and organizational foundation, and development of the new campus.

Table 3 Achievement of Project Goal

Project Purpose	Foundation to become a world class leading university is established by steadily practicing the basic concept of E-JUST.
Indicators	Actual Results
① The number of presentations in international conferences and research papers accepted in accredited international journals ranks within top 5 among Egyptian universities.	(Achieved) As the magnitude of faculty number differs from other universities, per faculty number, not an absolute number is compared. The number of research papers accepted in accredited international journals/per academic staff/per year of E-JUST is 1.09(at the time of Terminal Evaluation). There was no relevant public data of Egyptian universities available and were not able to obtain similar data through the visit survey with Alexandria University ¹⁸ . However, based on hearings with faculty members of some other major Egyptian universities, this number was higher than their numbers ¹⁹ . From these conversations, it is assumed that there is a high probability that 1.09 is within the top 5 among Egyptian universities.
② E-JUST maintains “Common Understanding” document as an official agreement between Egypt and Japan.	(Achieved) The original indicator, “To obtain the accreditation of NAQAAE (National Authority of Quality Assurance and Accreditation for Education)” was revised to the current one at the Midterm Review as the opening of the undergraduate course was delayed and NAQAAE was targeting universities with undergraduates. Accreditation of E-JUST, however, was obtained from the Supreme Council of Universities (SCU) for 7 programs (PhD and Master’s Degrees) in November 2012, and for the Environmental Engineering Program in 2013. Since the accreditation of E-JUST for awarding degrees was obtained, it was judged by rephrasing the initial indicator as “to obtain the approval of SCU”.

Source: JICA and E-JUST materials

¹⁸ Alexandria University and Cairo University are considered as among the top 5 universities with engineering faculty in Egypt based on magnitude, history and the past world ranking of Times Higher Education.

¹⁹ According to the members of engineering faculty of Alexandria University and Cairo University, who were contacted by the ex-post evaluator, “the Number of papers per faculty is about 0.5 and less than 1.”

Apart from the above indicators, the legal status, one of the foundations of university organization, was not obtained²⁰ within this project period, although the internal regulation²¹ of the university advanced. Moreover, it should be noted that the new campus, which was indispensable for the improvement and expansion of the research and educational environment, was incomplete, and that the organizational improvement of the research support system/university administration system did not progress as planned (Outputs 3 and 5), and thus the stable expansion of faculty and students were not anticipated²². Considering these comprehensively, it is judged that this project achieved the project purpose at a limited level.

3.2.2 Impact

3.2.2.1 Situations after the completion of this project

The progress of Phase 2 project etc. which affect significantly the attainment of project purpose and overall goal after the project are as follows.

(1) Implementation of Phase 2

In February 2014, directly after completion of this project, Phase 2 commenced with a 5-year project horizon. It was heard from many parties that since 2014, as Egypt regained political and social stability and a change of Board of Trustee members and the E-JUST president, E-JUST operations became much smoother. The deputy president in charge of international affairs, who had not been appointed, was finally appointed, and other faculty members and administrative staff joined as the preparation of accepting undergraduates developed. Establishment of research capability at an international standard and research-oriented education are progressing, and the number of papers published in international journals per faculty member greatly increased in Phase 2, from 1.4 (2014: the last year of this project) to 2.9(2015). The TMD staff has increased and the industry-academia collaboration has improved with the establishment of Center for Innovative Technology (CINTEC), which hosted joint seminars with industries, etc. In general, Phase 2 was progressing steadily.

²⁰ E-JUST was established based on Presidential Decree No. 149 (May 2009), and after January 2011 revolution, Supreme Council of Military issued “E-JUST Status Decree” (May 9, 2011) to assure the status. But the legal foundation of E-JUST was finally established after promulgation of Presidential Decree No. 132(December 2014) and Prime Minister Decree No. 102 (January 2015) during Phase 2.

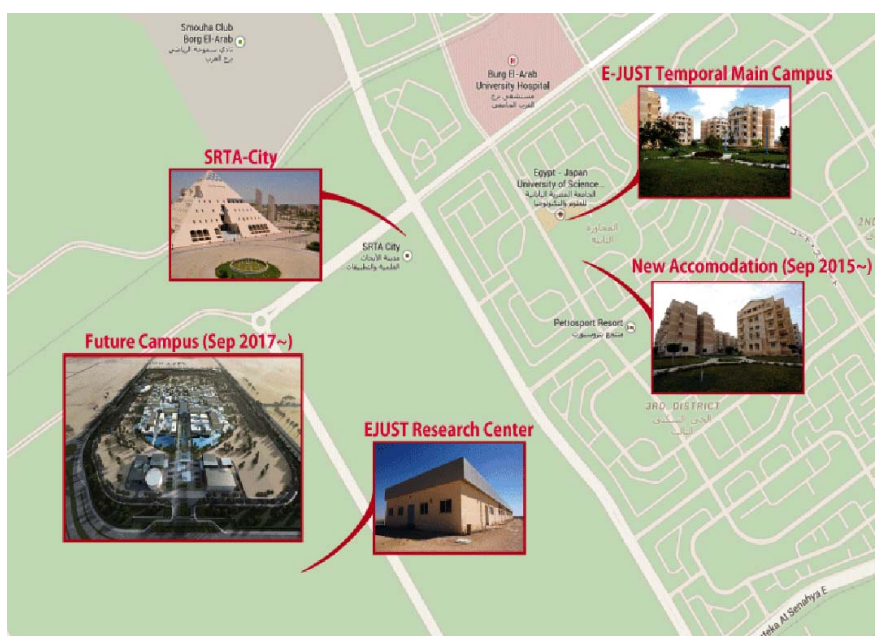
²¹ There were only 3 bylaws (Financial, Board of Trustee, Academic) when E-JUST opened in 2010. However, E-JUST bylaws developed rapidly and by project completion there were upwards of 17 (Vision and Mission, President Selection, Financial, Procurement, Salary, Jobs and Roles, Financial/Management Authority, Student Discipline, Student Hall/Dormitory, Healthcare, Warehouse, Research Ethics, etc.), making the university foundation in the aspect of bylaws almost complete.

²² One reason that stable expansion of students was not anticipated is the limited number of undergraduate candidate students in the country with the prerequisite relevant bachelors’ degrees of engineering to feed into the graduate programs. For example, it was heard from relevant teachers that there were only 3 national universities with chemical and petrochemical departments, and therefore eligible students for E-JUST graduate studies are limited.

(2) Acceptance of undergraduate students and New Campus Construction

E-JUST started as a graduate school and the target of this project and phase 2 was graduate level research and education, however, there was always a plan from the beginning of eventually accepting undergraduate students together with the construction of the new campus.

Undergraduate courses from faculty of engineering (maximum 500 students/year) and faculty of International Business and Humanities were expected to begin autumn 2017. With this expansion, improvement of the financial foundation, securing excellent faculty and graduate students, and university name's recognition, was expected. New campus construction (1st stage) started in September 2016²³, and as of December 2016, basic infrastructure (power lead-in facilities, campus crossing underpass, etc.) were under construction and slated to finish June 2017²⁴. The government of Egypt allocated necessary budget and showed strong commitment for early completion and the foundation of university facility is expected to be achieved soon.



Source: JICA material

Figure 2 E-JUST facility location map

(3) Establishment of E-JUST's legal status

In Phase 2, the legal status of E-JUST, significant for the achievement of project purpose, was established. The establishment of E-JUST was initially approved by Presidential Decree No.149 (May2009). And after the 2013 political change, Presidential Decree No132 (October 2,

²³ Taking one year during this project period, an international competition for the Master Plan of E-JUST new campus was conducted. "Isozaki Arata Atelier" was selected to lead the design, and a modification to make the design more practical was conducted, but political changes ended up hindering the progress. By the end of this project, a temporary research building (2000 square meters) was built at the south west end of campus to accommodate equipment.

²⁴ At the 15th E-JUST's Board of Trustee meeting (May 15, 2017), it was confirmed that the prospect of earliest completion date of New Campus was December 2017.

2014) and Prime Minister Decree No.102 (January 19, 2015) were promulgated. The latter comprised of 20 articles, including those on independent budgeting with the treatment of faculty and staff, university operations taking advantage of Japanese research and education practices etc.

From the above, Phase 2 was progressing steadily and the preparation of accepting undergraduate students/ new faculties, construction of the new campus etc. was advancing. The achievement level of this project has further advanced and it is now considered that the project purpose's achievement degree which was "moderate" at the Terminal Evaluation, is being achieved at the time of ex-post evaluation.

3.2.2.2 Achievement of Overall Goal

The achievement of the overall goal of this project is shown in Table 4. Indicator ① targeted for E-JUST to become a model of an excellent research-oriented university in Egypt, and indicator② envisaged to nurture high level human resources to contribute to the linkage with advanced industries. From the beginning, it was assumed that achieving the overall goal required more than 10 years. It was, therefore, difficult to evaluate this indicator at the ex-post evaluation since only 6 years had passed since the opening of the temporary campus in February 2010, and the number of faculty members and students were less than one fifth of the initial plan. The commencement of undergraduate courses necessary for E-JUST to become eligible for university rankings is scheduled for after September 2017. As for indicator ②, many students are young faculty of other national universities, etc. studying at E-JUST to obtain Master or Doctoral Degrees, and therefore many graduates have not entered the private sector yet. Therefore, it is too early to judge the achievement of the overall goal. Since Phase 2 is currently being implemented and progressing well, it is envisaged that E-JUST will be able to eventually achieve the overall goal.

Table 4 Achievement of Overall Goal

Overall Goal	E-JUST becomes able to sustainably produce highly qualified human resources who can lead the socio-economic development of Egypt, Arab countries and Africa.
Indicator	Actual results
①E-JUST is ranked within the Global top 500 universities within 10 years.	(unevaluable) Only 6 years have passed since opening of the school at this ex-post evaluation, and E-JUST is not yet qualified for major university rankings as undergraduate programs are not available.
②The employment rate of E-JUST alumni after 1 year of graduation maintains over 90%.	(too early to evaluate) At the time of ex-post evaluation about 80-90% of graduates were young faculty members of other universities dispatched with MOHE scholarship to E-JUST to obtain degrees. There were only 10 graduates who weren't so, therefore there is not yet sufficient data to support this indicator.

Source: Created from the documents provided by JICA

Note: MOHE provided scholarships for 50 persons/year to E-JUST since 2008 and increased this to 75 persons/year in 2016. Some Japanese and Egyptian faculty members indicated that high tuition fee is a bottleneck for recruiting students in Egypt where there are only limited employment options for graduate students.

Column: JICA's Roles / Contribution

This project was formed to comprehensively utilize JICA's technical cooperation and grant aid system. Although this project encountered major political changes that lasted three years during the implementation period, the following flexible responses contributed to keeping the implementation of the higher education project in Egypt to a minimal delay. With this, JICA's flexible responses are highly appreciated by the Egyptian side.

(1) Expansion of the provision of equipment by technical cooperation to compensate for the delay in ODA grant aid:

As a result of the delay of the ODA grant aid (which was supposed to provide equipment for this project), caused by the new campus construction delay with the backdrop of political changes; JICA received a list from a Japanese technical advisor of equipment that faculty members of each program requested, and selected priority equipment and procured them more than initially planned for this project. By securing the supply of equipment, the project avoided obstacles to research / education / dissertation preparation due to lack of equipment.

Samples of Equipment provided:



Liquid chromatograph capable of high performance mass spectrometry



Transmission electron microscopy used for analysis of microscopic regions of engineering materials etc.

(2) Flexible and stable dispatch of experts:

As for Japanese faculty dispatched as experts, initially many individual short-term dispatch contracts were planned to be used. After consulting with the universities after commencement of the project, outsourcing contracts with major universities was adopted. This change contributed to giving greater financial incentive to Japanese coordinating universities and securing a variety of faculty including project-specific ones. This also helped JICA reduce enormous contract procedures. This arrangement was considered effective in reducing the operation load, and ensuring the flexibility and diversity of dispatched faculty required for interdisciplinary education and latest theme related research for this project.

3.2.2.3 Other Positive and Negative Impacts

(1) Environmental and Social Impact

Involuntarily resettlement has not occurred with respect to development of the new and temporary campuses (located 2 km apart eastward). Each program separately processes waste-water/ liquids generated in experiments, and no particular problems have occurred. As it is expected, however, that since the amount of waste-water/ fluid will increase with the expansion of E-JUST and acceptance of undergraduate students, it is desirable to introduce facilities that efficiently perform waste-water treatment etc. for the entire campus.

(2) Other Social and Economic Impact

The first and second presidents of E-JUST were selected by fair public offering. This method of selection at national universities was the first attempt in Egypt, and it was reported to MOHE as a good example of an efficient and fair selection method of a president and highly appreciated. However, as Egypt is not familiar enough with this method, no other case which adopted this method has been confirmed to date.

To summarize, through the leverage of organizational cooperation of JSU and provision of the latest research equipment, this project was steadily implemented and achieved excellent results in research and educational aspects, and two indicators of the project purpose were achieved. This is seen from the increase of papers published in international journals and high acquisition rate of degrees (completion rate) of students within the designated time. However, the employment and arrangement of technical/senior/administrative staff, establishment of legal status, construction of a new campus, securing a steady number of faculty and students, which were considered to be important elements of “establishment of foundation to become a world class leading university in the field of science and technology”, were delayed due to the two major political changes and subsequent confusion from 2011 to 2013. Therefore, the overall achievement of the project purpose is moderate. While Phase 2 is progressing smoothly, the project purpose is being achieved gradually, but it is too early to evaluate the achievement of the overall goal.

Based on the above, the effectiveness and impact of this project are judged to be fair.

3.3 Efficiency (Rating: ②)

3.3.1 Input

The plan and actual inputs of this project is shown in Table 5.

Table 5 Plan and Actual Input

Input factor	Plan (based on Ex-ante Evaluation)	Actual (based on Terminal Evaluation)
Input of Japanese side		
(1) Dispatch of Experts	Long Term Experts: 6, Short Term Experts: about 30/year (7 programs x 4 faculty members/ year + 2 administrative staff) (Chief, University operation chief, University management, Education & research support, Technical support)	Long Term Experts: in total 12, Short Term Experts: in total 295 (227 were those from outsourcing contracts with 4 secretariat universities.) (Chief advisor, 3 academic supervisors, Technical advisor, University Operation advisor)
(2) Acceptance of trainees	About 10/ year (7 programs x 1 faculty member + 1 administrative staff)	10 (on 2 occasions) (Training of secretariat staff)
(3) Equipment provision	Total amount unknown, for research and education of doctoral and master course programs (Supplementary equipment of those owned by National City Institute)	1,530 million Japanese yen (as of the project completion) for research and education of doctoral and master course programs, software, vehicles, others.
(4) Overseas Operation strengthening expenses	Joint research expenses, daily activity expenses, etc.	80.25 Million Japanese yen
Financial contribution from Japan side	Total about 1,250 million Japanese yen	Total 2,947 million Japanese yen
Input of Egyptian side		
(1) Counterpart allocation	Employment and allocation of E- JUST faculty members, technical staff, other staff etc.	26 faculty members, 63 administrative and other staff
(2) Construction of Campus/ facilities	Construction of new campus and related facilities	84 ha of land for new campus, 14 dormitory buildings, temporary laboratory building (2000 square meters), etc.
(3) University operation expenses	Personnel expenses, research and education expense, maintenance expenses (buildings and equipment)	In addition to those expenses in the left column, project office space and furniture, etc.
(4) Project office expenses	Project office space, electricity and other utility charges, etc.	Local Cost: 72,512,010 Egyptian Pounds *Calculated from the total University Operation Cost in FY2010-2013(Egyptian fiscal year) (based on BOT documents) (1 Egyptian pound = 14.3 Japanese yen: May 2013 JICA rate)
Financial contribution from Egyptian side	About 10 billion Japanese yen	About 1.03 billion Japanese yen

Source: E-JUST and JICA materials, Ex-ante Evaluation, Terminal Evaluation

3.3.1.1 Elements of Inputs

Input elements of this project, mainly the dispatch of experts and equipment provision, both increased much more than planned. The dispatch of Japanese experts increased due to the change of contract style, as an incentive to those program secretariat universities and in order to increase the flexibility of dispatches, from individual contracts to outsourcing contacts with those program secretariat universities, as well as another program being added. As for equipment, until the completion of the new campus, complementary procurement in this project and borrowing of equipment from City Institute was planned. But since construction of the new campus and launching of undergraduate programs were delayed, equipment provision within this project increased significantly to respond to the situation.

3.3.1.2 Project Cost

The Project Cost was planned at about 1,250 million yen; while actual cost was more than double, 2,947million yen (235% of the planned). The main reason was due to the change of contract type for short-term dispatch experts from individual contracts to outsourcing contracts²⁵ based on the discussion with universities after the commencement of the project, in order for the program secretariat universities to increase financial incentives and provide a broader range of experts. Another reason is the huge increase of equipment provision required for this project (570 million yen to 1,530 million yen: 268%, based on estimation²⁶ of ex-post evaluator), to compensate for the funds which were planned to be provided through an ODA grant aid together with the progress of the new campus construction, but was late due to the delay of the new campus construction. Even without this increase of equipment, the project cost surpassed the plan (148% of the plan).

3.3.1.3 Project Period

The project implementation was scheduled to take 60 months, and actual time was 63 months (with a 3-month extension, or 105% of planned schedule). This extension was crucial for the planned from the start smooth hand over of operations from phase 1 to phase 2 without a gap, due to the delay of commencement of phase 2 caused by the second political change occurring in the last year of this project. For evaluation purposes, this delay is not counted.

Both the project amount and project period surpassed the original plan. However, for the equipment portion of the project amount increase which shared more than half of it, this was to make up for the ODA grant aid project linked to this project, and the project period extension

²⁵ The reason of contract change came from the request of the universities to dispatch teachers more flexibly. The change increased technical and administrative costs.

²⁶ Calculated from the procurement list in Phase 1.

was to make up for the delay of the start of Phase 2, and therefore, this project itself was not delayed. From the above, the efficiency of this project is fair.

3.4 Sustainability (Rating: ③)

3.4.1 Related Policy and Institutional Aspects for the Sustainability of Project Effects

(1) Establishment Law of E-JUST

By the promulgation of Presidential Decree No. 132 in October 2014, and Prime Minister Decree No. 102 in January 2015, the legal status of E-JUST to become an independent governmental education entity with special characteristics different from other national universities, was finally established. This condition of being “an independent government education entity with special characteristics” was important for E-JUST to secure excellent faculty/ staff and adopt the Japanese research and education style to become a top-notch research-oriented university independent from regulations pertaining to other national universities. This law had been consulted between Japan and Egypt since the time before the establishment of the university and it can be confirmed²⁷ that Egypt's high interest and commitment to E-JUST has persisted even after the two political changes.

(2) Continuous involvement of JSU

The long-term and continuous involvement of JSU is indispensable for E-JUST to reach “international standard” levels in terms of education and research. During Phase 2, it is considered necessary to form a solid support system for E-JUST with all essential entities in Japan [Government (Ministry of Foreign Affairs, Ministry of Education, Ministry of Economy, Trade and Industry, etc.), universities, industries] so that involvement of JSU remains even after Phase 2 period. Regarding this, since the preliminary evaluation survey stage in 2008, the Ministry of Foreign Affairs has established the “E-JUST Support Council”, an all-Japan regime, to effectively show Japan’s commitment towards the bilateral agreement.

3.4.2 Organizational Aspects for the Sustainability of Project Effects

(1) Enforcement of E-JUST management system

It was pointed out in Termination Evaluation that further strengthening the management system of E-JUST was necessary. As explained in 3.2.2.1 Situations after the completion of this project, the implementation system of E-JUST advanced greatly during Phase 2 due to the fact that the Egyptian government regained stability and the reform of the university

²⁷ Article 6 of Prime Minister Decree No.102 describes “The University Curricula, Research and Training Plans and Management are set according to the latest practices in the Japanese Universities and Research Centers by a decision from the Board of Trustees.” And legally ensures the Japanese style research and education system which was aimed to be maintained during the period of political turbulences through setting an indicator; “E-JUST maintains “Common Understanding” as an official agreement between the Egypt and Japan side.”

management team; including the increase of faculty and staff and the appointment of a vice president of international affairs which was previously vacant. As long as the university expands, further enforcement of personnel is required.

(2) Securing faculty members

Regarding the number of teaching staff, as a whole, no problems have occurred in providing courses. However, at the time of the ex-post evaluation, only 7 faculty members out of 35 have been continuously enrolled in E-JUST since opening in 2010. It is thought that accumulation of faculty will not be sufficient if faculty are not looked at as an important resource of the university²⁸. The management of E-JUST is fully aware of this issue and is planning to introduce a lifetime tenure system as one of countermeasures. But there are also opinions that if a lifetime tenure system is adopted, the incentive to consistently publish papers in international journals (a mainstay of E-JUST) may be impaired, and thus has not been implemented yet.

3.4.3 Technical Aspects for the Sustainability of Project Effects

(1) Research activities

Faculty of E-JUST are generally top quality with a large number of accolades such as publication/ presentation of papers in international journals/ conferences. In addition, through research activities at E-JUST, eight patents were applied and five registered indicating the high standard of research capability of E-JUST. However, setting such strict selection criteria for faculty also constrains the hiring availability of new faculty.

(2) Education activities

The ratio of master's and doctoral students' completion within the designated periods (2 years for master's degree, 3 years for doctoral degree) is 71%, and the proportion of students completing with an extension of just one semester goes up to 95%. Taking into consideration that there are many cases where it takes upwards of 4 years to complete a master's degree and 5 years for doctorate, in other universities where students often engage in part time jobs during those period, this shows that E-JUST's educational ability and environment is excellent.

(3) Management and maintenance of equipment

There are various kinds of equipment, with different frequencies of usage, installed into many laboratory sites. Among them, TMD maintains and manages common equipment (electron

²⁸ One of the reasons of slow accumulation of teachers is all teachers are hired with a time limit as they are dispatched to E-JUST using an on-leave system (in which teachers can work in other universities or research institutes for maximum 10 years) of their home universities and they need to return back 2 to 5 years later. In 2016, the regulation was amended and the 10-year time-limit was removed in case teachers are in a prioritized national mission, and the job in E-JUST was identified as one of such a national mission. But the effects of this amendment are still unknown.

microscope, numerical control processing machine, etc. used commonly in programs) and the other equipment is managed by technical staff of each program, while receiving support from TMD. This system was developed after commencement of Phase 2. As for training/technical support of equipment requiring updates and maintenance, technical training is provided on a semi-annually basis, centered on requests from each program including training of the latest equipment abroad, in total about 10 times per year. According to the Japanese technical adviser in Phase 2, TMD gained a mastery of training to maintain and manage the equipment almost entirely without the support of the Japanese technical advisor, given the current number of students (about 170 at the time of ex-post evaluation). Technical expertise related to the maintenance and management of technical staff had improved to such a level by 2014 that daily maintenance can be sufficiently implemented without the oversight of Japanese experts. In the beneficiary survey, 91% of faculty and 64% of students gave high evaluations on technical skills of technical staff.

(4) International standard accounting system

Regarding the new accounting system in compliance with international standards which was introduced in this project, the financial staff who received training in Japan recently retired, and therefore it is desirable to conduct training for the current staff in charge.

3.4.4 Financial Aspects for the Sustainability of Project Effects

(1) Financial situation

E-JUST is still in a transition period and the financial situation of E-JUST fluctuates greatly each year due to the construction of the new campus and the opening of undergraduate departments. Most of the financial resources depend on the government's budget, such as the national budget and scholarships from MOHE. Internal financial resources (tuition fees of individual students, competitive research funds, scholarships/ donations from private companies, etc.) are still limited. If students can be secured as planned, by the opening of departments after autumn 2017, the revenue base is expected to strengthen.

(2) Situation of revenues and expenses

The revenues and expenses for the recent four years are shown in Table 6. It went into black in the period 2013/2014 (fiscal year starts from July 1st and ends June 30th) when this project ended, maintaining a surplus for the subsequent two years. Expenses do not include depreciation of equipment. The construction costs of the new campus are covered by the state budget of Egypt.

(3) Maintenance budget of equipment

According to E-JUST, the budget for the operation and maintenance of common equipment provided by JICA has been fully distributed as requested (after some minor setbacks

of distribution in the short-term). Because of the approach of Japanese technical adviser and others, it seems that awareness towards the importance of maintenance management is getting through to the management level. According to the beneficiary survey for students, however, there are reports of lack of spare parts and delays in updating software due to lack of budget for equipment managed by individual programs.

Table 6 Revenues and Expenses (FY 2012 /3 to FY2015/6)

Unit: 1000 Egyptian Pounds (EGP)

	<u>2012/13</u>	<u>2013/14</u>	<u>2014/15</u>	<u>2015/16</u>
Revenues				
Governmental Revenues				
Grants from the Government	5,847	12,510	17,732	25,999
Tuition fees and student accommodation funded by MOHE	9,315	11,857	14,035	11,659
Miscellaneous revenues	1,008	160	300	427
Subtotal	16,169	24,527	32,068	38,085
Other Revenues	1,082	2,704	3,699	3,366
Total Revenue	17,252	27,231	35,767	41,451
Expenses				
Salaries and Wages	14,296	17,184	22,045	22,562
General administrative expenses	6,046	5,927	8,133	8,985
Claims provisions				500
End of service provision	523	749	922	----
Foreign currency exchange differences	268	811	2,192	----
Depreciation of fixed assets	13,113	13,672	14,550	16,735
Total Expenses	21,132	24,672	33,291	32,046
Surplus/(Loss) of operating activities	(3,880)	2,559	2,476	9,404

Source: Audit Reports of E-JUST

Note: Fiscal year is July 1 to June30.

Exchange rate at end of each term: 2012/13(1USD=5.78EGP), 2013/14(7.15), 2014/2015(7.61), 2015/16(8.88)

Based on the above, there are no major issues regarding the sustainability of this project in terms of policy, institutional, organizational, technical and financial aspects. Regarding the organizational aspect, it could be pointed out that there are frequent changes of faculty, and the delay of the expansion of faculty, students and administrative staff. With the strong commitment of the Egyptian government in promoting this project, however, the completion prospect of the new campus has been realized, and the expansion of the university organization is advancing. Furthermore, it can be pointed out that the strengthening of the financial base from establishing the undergraduate department is expected, and that the provision of equipment mainly for the undergraduate department via ODA grant aid is planned. Also, it is comprehensively taken into

consideration that Phase 2 of this project is being implemented and the sustainability anticipated by this project is high. However, with regards to the sustainability after Phase 2, it is necessary to verify the ongoing support sustainability by Japanese faculty, which is a major player in the practice of Japanese style research and education in this project.

4. Conclusion and Lessons learned /Recommendations

4.1 Conclusion

This project was implemented by the Egyptian Ministry of Higher Education and E-JUST as counterpart organizations. The purpose of the project is to open a public educational facility at New Borg El Arab City in Alexandria District with the concept of “small class sizes, graduate school centered, research-oriented, practical and international standard education offering”. And by incorporating the characteristics of engineering education in Japan, to establish the basis for E-JUST to become one of the top science and technology universities in the world. This project was consistent with Egypt’s higher education policy and development needs for high-level human resources at the time of planning and completion, and also Japan’s aid policies towards Egypt, making relevance of this project “high”. The organizational cooperation of Japanese support universities (JSU) and provision of the latest equipment for research contributed to the establishment of E-JUST’s research and education abilities. But some crucial elements for establishment, such as the hiring of various faculty and staff, establishment of relevant legal status for E-JUST, and campus construction were delayed mainly due to the influence of political and social turbulences caused by two major political changes. Since the completion of this project, Phase 2 is currently being carried out smoothly and the project purpose is being achieved. It is, however, too early to evaluate the achievement of the overall goal, as it was assumed to be achieved in 10 years and only 6 years passed after its opening. Together, the effectiveness and impact of this project was considered “moderate”. The project schedule was almost finished on time, but due to an increase of expert dispatches through outsourcing contracts with supporting universities, and an increase of equipment provision, the project cost surpassed the initial plan, thus the efficiency of this project is “medium”. There are no major issues with this project’s policy, organizational, technical and financial aspects. Therefore, the sustainability outlook of this project is “high”.

In the light of the above, this project is evaluated to be “satisfactory”.

4.2 Recommendations

4.2.1 Recommendations for E-JUST

- (1) Early construction of the new campus is an important element for E-JUST to achieve the project purpose and timely completion is highly recommended. It is also recommended that

the campus become the symbol of E-JUST, to aid in securing stable numbers of students and faculty by conscious efforts, such as enhancing its attractive features through the development of service center to accommodate various student needs, training gym and swimming pool etc.

- (2) Safety measures related to experiments in laboratories have progressed, including the installation of draft chambers indispensable for chemical experiments, and safety shower to be used in emergency situations. However, considering the future increase of students, countermeasures against wastewater and waste liquid are not sufficiently developed. It is recommended that efforts be made to implement improvement measures at an early stage.
- (3) Only 7 faculty members out of 35 have been continuously working at E-JUST since 2010. The system to accumulate faculty members, one of important resources of university foundation, has not developed yet. Many faculty believe that a tenure track, or a lifetime employment system, contributes to retaining faculty and recommends implementing such a system to improve the accumulation of faculty, and also the university operation system.

4.2.2 Recommendations to JICA

- (1) Safety measures (including environmental measures) in laboratories have been introduced with the leadership of Japanese faculty. However, as domestic environmental standards are not fully developed, the countermeasures of wastewater/ waste liquid have not been advanced much. It is extremely meaningful for E-JUST to become a model “zero emission” university and act as a pioneer to other universities (promoted by the E-JUST President), of avoiding the environmental burden of emitting wastewater and waste liquid. Active support utilizing technical cooperation with this consideration and implementation in mind is recognized as important.
- (2) Although it was timely to support the introduction of a new accounting system in 2013 by procuring consulting services with certified public accountants. At the time of the ex-post evaluation, it was identified that the person in charge who was trained at that time had already retired, and the operation was not fully established. It is desirable to further provide training through Phase 2.

4.3 Lessons learned

- (1) Utilization of bilateral agreement to improve sustainability

Signing a high-level bilateral agreement between the two governments may be quite effective in maintaining the sustainability of the project. Although this project encountered two

major political changes during the implementation period, it proceeded without frustration due to the bilateral agreement showing the government's long-term commitment. This project had very strong commitment from both Egypt and Japan since project formulation, reflecting the long-term development needs to respond to Egypt's development of higher human resources, including that discussed in the Summit Meeting. This commitment was documented as an agreement between relevant ministers and the Japanese ambassador as signers, and supported JICA's R/D²⁹ at even higher levels. In case of projects that have a high-level commitment of both governments of a recipient country and Japan, and that a long project implementation is expected, in order to smoothly implement such a project, while minimizing the adverse effects of political changes, it is effective to utilize a bilateral agreement to strengthen the commitment of executing agencies of both countries through a R/D, etc.

(2) Countermeasures in case a linked ODA grant aid is delayed in a collaboration project of technical cooperation and ODA grant aid

In this project, the provision of equipment by grant aid, which was planned from the beginning and thought to be indispensable for the success of this project, did not proceed as planned because of the delay of the new campus construction. As the equipment provision demands increased significantly, fortunately the technical cooperation was able to fill the gap. This timely and flexible response was greatly appreciated. When implementing a collaboration project of technical cooperation and ODA grant aid, it is highly recommended to be able to respond promptly and flexibly by utilizing the technical cooperation, in case the linked ODA grant aid becomes delayed. In such a case, consideration is required so that it should be within the scope of technical cooperation while paying sufficient attention so as not to be overly flexible).

End

²⁹ R/D stands for Record of Discussion. An agreement relating to a technical cooperation project between Japan and recipient government signed after project preparation studies between JICA and executing agencies, which includes project purpose, activities (outputs), inputs of both sides or demarcation of responsibilities in implementation, etc.