Kingdom of Saudi Arabia

FY 2016 Ex-Post Evaluation of Technical Cooperation Project[1]

"Saudi-Japanese Automobile High Institute Project Phase I, II"

External Evaluator: Akihiro Nakagome, EY Advisory & Consulting Co., Ltd.

0. Summary

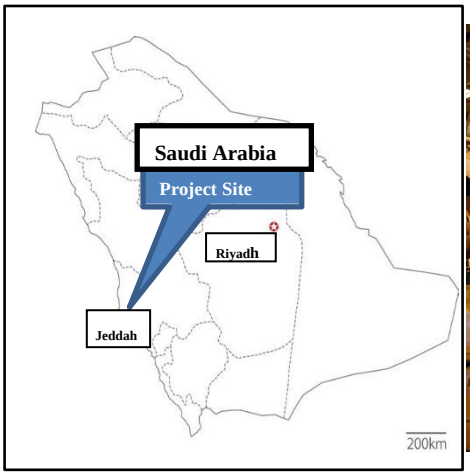
The goal of this project was to ensure the Saudi-Japanese Automobile High Institute (SJAHI) would be able to provide an effective training for automotive technical services, graduate Saudi technicians toward the local automotive service industry, continuously improve its educational level to meet the requirements of the domestic automotive industry, thereby promoting Saudi Arabian employment expansion policy (Saudization) in the automotive service engineering field.

The project, which develops capacity for Saudi Arabian nationals by implementing vocational training, is sufficiently consistent with not only Saudi Arabia's development policy, development needs through both at the time of planning and ex-post evaluation, but also Japan's ODA policy at the time of planning, and from these results, its relevance is high. SJAHI has provided technicians having attained a certain level, the satisfaction level of beneficiaries such as service companies and students toward SJAHI have been mostly high and SJAHI tackles efforts to improve the educational level. Moreover, the credibility of Saudi technicians in the automotive service industry was also high at the time of ex-post evaluation. From these, the effectiveness and impact of the project are rated as high. While the project period was as planned, the project cost was higher than planned; hence the efficiency of the plan is rated as fair. Concerning project sustainability, while the policy background to support SJAHI's activities is ensured, some minor problems have been observed in terms of the organizational and technical aspects; hence the sustainability of the project effects is fair.

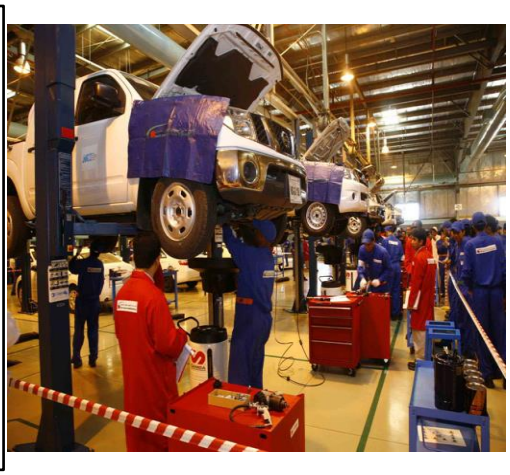
In light of the above, this project is evaluated to be satisfactory.

[1] In order to reveal the contribution of this project to the development of industrial human resources in Saudi Arabia, this ex-post evaluation also carried out in depth analysis by a Japanese researcher who had wide experience in industrial development (development of human resources, 5S, KAIZEN etc.). Selection of the researcher was done by JICA.

1. Project Description



Project Location



SJAHI Training Field

Source: SJAHI web site

1.1 Background

The population growth rate of the younger generation in Saudi Arabia had been soaring and a high unemployment rate among Saudi Arabian youth has become a serious social problem. The Saudi Arabian Government has implemented a policy of so-called “Saudization”, which promotes efforts to expand employment and develop vocational training for Saudi Arabian youth and was described as one of the most urgent issues in *the Eighth Five-year Development Plan (2005-2009).* To realize Saudization, it was considered indispensable to provide vocational training that meets private sector requirements.

Under these circumstances, the Japanese Technical Cooperation Project on Saudi-Japanese Automobile High Institute Project (Phase I) (hereinafter referred to as "Phase I"), aiming to nurture Saudi automobile mechanic technicians for automobile industries, was implemented from September 2001 to August 2006. During Phase I, under the technical instruction of long-term experts dispatched from Japan, a two-year curriculum lesson was held at SJAHI to train auto mechanics and approximately 200 graduates were produced every year to the automobile industry until 2006. Meanwhile, the terminal evaluation of Phase I revealed a portion still fragile in the school management system and the need to build a system to continuously improve the contents of education through smooth and effective feedback of the examination result. Under

these circumstances and to tackle these remaining challenges, the Japanese Technical Cooperation Project on Saudi-Japanese Automobile High Institute Project (Phase II) (hereinafter referred to as "Phase II") was requested by the Saudi Arabian Government and implemented.

1.2 Project Outline

【Phase I】

Overall Goal		Saudization in the field of automotive service engineering is promoted.
Project Purpose		1) SJAHI will be able to graduate Saudi technicians towards local automotive service industry. 2) SJAHI will be able to provide an effective training for automotive technical services.
Outputs	Output 1	The project operation unit is established.
	Output 2	The necessary machinery and equipment for technical training are provided, installed, operated and maintained properly
	Output 3	Technical capability of the counterpart personnel is upgraded.
	Output 4	Training methodology and materials are developed.
	Output 5	Curricula for automotive technical services training are implemented systematically.
	Output 6	Internal evaluations for the training are implemented systematically.
Total cost (Japanese Side)		1,217 million yen
Period of Cooperation		September, 2001 – August, 2006
Implementing Agency		General Organization for Technical Education and Vocational Training (GOTEVOT) Saudi-Japanese Automobile High Institute (SJAHI) Japan Automobile Distributors in the Kingdom (JADIK)
Other Relevant Agencies/ Organizations		None
Supporting Agency/Organization in Japan		Ministry of Economy, Trade and Industry (METI) Japan Automobile Manufacturers Association, Inc. (JAMA)
Related Projects		None

【Phase II】

Overall Goal		Saudization in the field of automotive service engineering is promoted.
Project Purpose		SJAHI continuously be able to improve its education level to meet the requirement of the domestic automotive industry.
Outputs	Output 1	Solid school management system supported by proper collaboration with private sector is established.
	Output 2	Proper examination, its feedback and grading system are established, and quality control of students is implemented.
	Output 3	Method for continuous improvement of education contents is established.
Total cost (Japanese Side)		187 million yen
Period of Cooperation		September, 2006 – August, 2009
Implementing Agency		Technical and Vocational Training Corporation (TVTC) renamed from GOTEVOT in November 2007 SJAHI JADIK
Other Relevant Agencies/ Organizations		None
Supporting Agency/Organization in Japan		METI JAMA
Related Projects		None

1.3 Outline of the Terminal Evaluation

1.3.1 Achievement Status of Project Purpose at the Time of the Terminal Evaluation

【Phase I】

It was evaluated that the project purpose was expected to be achieved based on the following indicators:

1) The project successfully sent 569 graduates, including students expected to graduate in

July 2006 and the rate of graduation would be 91% over the past three years.

2) Interviews with JADIK members, SJAHI students and graduates revealed that although they are generally satisfied with the education provided by SJAHI, there remains room for improvement.

【Phase II】

Responding to the increasing human resource needs of JADIK members, SJAHI has succeeded in providing more than 200 graduates every year. Moreover, the satisfaction level of SJAHI students, graduates and JADIK with SJAHI, including the educational level, is high, thus the project purpose was expected to be achieved.

1.3.2 Achievement Status of the Overall Goal at the Time of Terminal Evaluation (including other impacts)

【Phase I】

It is apparent that Saudization has progressed considerably nationwide in the automotive service engineering sector. The ratio of Saudi technicians as a proportion of all automobile technicians was only 6.5% as of 2003 and there were about 3,100 Saudi technicians in companies with 20 or more employees. Under these circumstances, given the major contribution of SJAHI in providing nearly 200 Saudi technicians every year, it was considered that the project had obviously made great strides forward to Saudization in the sector.

【Phase II】

As of Feb. 2009, 657 SJAHI graduates were working for JADIK member companies. Also, job change to automobile related companies etc. other than JADIK contributes to Saudization. As a model of training technicians for SJAHI, similar training institutes have been established by automobile manufacturers other than Japanese such as the General Motors Company (GM) in collaboration with TVTC. According to the above results, the Overall Goal was expected to be achieved.

1.3.3 Recommendations from the Terminal Evaluation

【Phase I】

(1) Improvement of school management and administration system

It is recommended that SJAHI establish appropriate internal policies/rules and implement management based on the same. In addition, given excessive lectures assigned to each instructor, it is recommended that SJAHI review the appropriate number of instructors for the curriculum

and take the necessary measures to rearrange the appropriate number of instructors together with a new refreshment training system (i.e. a short-term course targeting the reinforcement and recall of previously acquired skills and knowledge) to develop instructors' capacity.

(2) Improvement of examination and evaluation system and establishment of proper feedback system of the result of examination for the improvement of the contents of education.

It is recommended that SJAHI make its best effort to scrutinize questions stored in the database for description type examination, re-develop the approach and contents of practical examination and establish a feedback system of examination results toward the contents of lectures and curricula.

(3) Equipment renewal plan

It is strongly recommended that the Saudi side make a renewal plan for all training equipment, including that provided by JICA.

【Phase II】

(Recommendation for the remaining project period)

(1) To complete the revision of textbooks and lesson plans

SJAHI should catch up and complete the revision of textbooks for second year students and lesson plan for first and second year students by the end of the Project.

(2) To monitor the impact of SJAHI Automation System (SAS)

Regarding the introduction of SAS, SJAHI should keep monitoring its impact continuously and improve its back-up system so that it could lessen the burden of instructors and help them work with the system efficiently.

(Recommendation after the completion of the project)

(1) To monitor the impact of changes in the number of trainees and curriculum

SJAHI should keep monitoring the influence of changes such as any increase in students, renewal of training vehicles and such effects on students so that it could continue improving training through feedback.

(2) To increase the retention rate of JADIK graduates

While the total retention rate of SJAHI graduates in JADIK is currently around 70%, the average retention rate after 3 years of graduation is about 46%. SJAHI should track the situation of JADIK graduates and analyze the background of their turnover so that it could reduce the turnover rate in the long term.

(3) To formulate a mid/long term management plan (including direction, objectives, human

resource assignment and development and financial plans etc.)

While SJAHI has established a regular/routine basis school management system, it has not necessarily had a concrete future plan. To strengthen its self-sufficient sustainability, SJAHI should formulate a mid/long term management plan including the following items: direction/positioning in the market (e.g. clarification of the targeted technical level of graduates etc.), objectives, human resource assignment and development plan and a financial plan.

2. Outline of the Evaluation Study

2.1 External Evaluator

Akihiro Nakagome, EY Advisory & Consulting Co., Ltd.

2.2 Duration of Evaluation Study

Duration of the Study: February, 2017 – February, 2018
Duration of the Field Study: None

2.3 Constraints

This ex-post evaluation featured a constraint on collecting information due to field survey not having been conducted and long-term periods of 16 years and 8 years having elapsed since the start of the Phase I project and completion of the Phase II project, respectively.

3. Results of the Evaluation (Overall Rating: B[2])

3.1 Relevance (Rating: ③[3])

3.1.1 Consistency with the Development Plan of Kingdom of Saudi Arabia

Saudization, which promotes Saudi Arabian employment expansion, was described as one of the most urgent issues in *the Seventh Five-year Development Plan (2000-2004)* and *the Eighth Five-year Development Plan (2005-2009).* In the latter plan, it was mentioned that automotive companies in Saudi Arabia must employ more than 35% of Saudi Arabian employees. Vocational education is also highly prioritized in government policy, as it is considered essential to improve the growing unemployment problem among Saudi youth (from the terminal evaluation report for Phase II).

[2] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory
[3] ③: High, ②: Fair, ①: Low

As mentioned above, this project was in line with the development policies of Saudi Arabia; both at the time of the project planning and completion.

3.1.2 Consistency with the Development Needs of the Kingdom of Saudi Arabia

At the time of project planning for either Phase, Saudization revealed issues such as a lack of concrete measures, e.g. for developing a vocational training system and so on. Consequently, specific efforts started, such as support for training education (from the terminal evaluation report for Phase II). At the time of terminal evaluation for Phase II, the need to enhance organizational capabilities and continuously improve the educational level for SJAHI remains high, because; 1) Due to the rapid population increase, the unemployment rate among the young generation[4] in Saudi Arabia has soared. 2) The number of applicants who wanted technical training at SJAHI increased from 1,355 in 2005 to 7,155 in 2008. In addition, in the questionnaire survey to JADIK, all six import sales distributors etc. responding to the survey, answered that training of Saudi new technicians by SJAHI was "far" or "almost" more effective and efficient than their own training. Thus, it is said that training of technicians by SJAHI also meets the needs of the Saudi automotive industry such as JADIK.

As mentioned above, this project was in line with the development needs of Saudi Arabia; both at the time of the project planning and completion.

3.1.3 Consistency with Japan's ODA Policy

According to Japan's ODA Data Book by Country in 2002, through then Prime Minister Hashimoto visiting Saudi Arabia in 1997, next year the "Japan-Saudi Arabia Cooperation agenda", which summarized the Important issues that the two countries will jointly work toward the 21st century was signed and a policy of implementing technical cooperation mainly targeting human resource development, such as education and vocational training, environment, medical, science and technology, was indicated. Thus, the project has been in line with the Japan's ODA policy at the time of planning, in terms of conducting human resource development of the country through technical cooperation with education and vocational training.

[4] Since the unemployment rate of young generation as of 2009 is not shown in the terminal evaluation report, the figures as of 2014 are stated. As a result, the youth unemployment rate in 2014 is high at 27%, which exceeds the average world unemployment rate of 14% for the same generation and 23% in the Arab region (from *the analysis report on Saudi Arabia unemployment rate of young generation announced by Alkhabeer Capital in 2014*).

This project was highly relevant to the country's development plan and development needs, as well as Japan's ODA policy. Therefore, its relevance is high.

3.2 Effectiveness and Impact (Rating: ③[5])

3.2.1 Effectiveness

Because both Phases I and II are closely relevant, the effectiveness of such phases was comprehensively evaluated after each Phase had been individually evaluated.

In some cases, the targeted value for each indicator had not been set in both Phases I and II. Conversely, it was not easy to set an appropriate indicator and targets, because SJAHI was newly established and the project intended to improve the capability of SJAHI training. Actually, through interviews with relevant persons and reviewing the documents provided by JICA, it is assumed that during implementation of the project, achieving the output itself was emphasized and the progress of individual indicators might not be reported. Moreover, it is thought that it was difficult to judge achievement; even if numerical values were counted, given the lack of any target value. While attempts were made to take the value of each indicator at the ex-post evaluation, where this was difficult, the achievement of the project purpose was evaluated depending on the result of examining the criteria and process of judgement at the terminal evaluation.

3.2.1.1 Achievement of Project Purpose

【Phase I】

Given that the six following outputs are achieved, Phase I is assumed to have achieved its purpose whereby SJAHI will be able to provide an effective training for automotive technical services, graduate Saudi technicians toward the local automotive service industry. The six outputs are: the project operation unit is established (Output 1) and the necessary machinery and equipment for technical training are provided, installed, operated and maintained properly (Output 2), The technical capability of the SJAHI instructors is upgraded, (Output 3). Training methodology and materials are developed. (Output 4), Curricula for automotive technical services training are implemented systematically. (Output 5), Internal evaluations for the current

[5] Sub-rating for Effectiveness is to be put with consideration of Impact.

training education are systematically implemented (Output 6).

As a result of the survey, despite room for improvement to achieve the solid management of SJAHI, the project system of it was mostly established (Output 1) and the necessary operation and maintenance manuals were made and updated with the cooperation of JADIK, with dedicated staff assigned to study the situation of equipment and prepare for maintenance. Accordingly, the necessary operation and maintenance were done (Output 2). In Output 3, it was understood that improving the technical capability of the SJAHI instructors would involve improving the capacity of the junior instructor. The reason why is that at the time, the instructors of SJAHI comprised a head instructor, senior instructor, instructor and junior instructor. Except for head instructors, who were executives from the beginning of SJAHI, senior instructors who had full enough skills, were usually hired from abroad and instructors having passed the examination of Instructor II had a certain quality guaranteed. Therefore, the area in which ability had to be improved was the junior instructors. While these were selected from excellent SJAHI graduates and a certain quality was secured, introducing the SJAHI Qualification System Test (SQST)[6] further cleared the target educational skill level of junior instructors and Japanese experts joined the evaluation members of SQST, which helped further improve the skills of junior instructors. Indeed, all five junior instructors who received training in Japan from 2002 to 2003 and all three junior instructors who received training in Japan in 2005 also passed the Instructor II qualification and moves to help improve capacity for such junior instructors would continue. Conversely, during the early years (2001 - 2002), four of the five junior instructors had retired from SJAHI without passing the SQST test, although this did not have a large negative impact on the project. Moreover, there was no resignation of junior instructors without passing the SQST thereafter. Regarding the development of training methodology and teaching materials, guidelines for preparing textbooks and teaching materials have been set out and the training methodology and manuals periodically reviewed as the curriculum has been updated (Output 4). Regarding the curriculum for automotive technical services training, the necessary subjects were systematically implemented to provide targeted skills (equipped with knowledge equivalent as a minimum to the third grade Japanese automotive technician level and practically close to the second grade Japanese automotive technician level. (SJAHI graduation requirement)) (Output 5). As an internal evaluation of the

[6] Here, it means the examination set up for the junior instructor to promote to instructor II. In addition, other SQST exams are prepared for Instructor I, Senior Instructor II and Senior Instructor I as part of the higher hierarchy, which, if passed, lead to salary increase or promotion.

status of technical education, lessons were mainly assessed during class observation visits by head instructors and Japanese long-term experts. Although the test bank[7] with a certain number of examination samples to create test questions was formulated, scrutiny of the exam questions and standardization of the technical test implementation method were mainly conducted in Phase II (Output 6).

Based on the above results, among the indicators to measure the achievement of the project purpose, regarding "Number of graduates (540-600 graduates by the end of the project, August 2006)" (Indicator 1), in fact, there were565 graduates and Indicator 1 was achieved. In addition, as for the "Satisfaction level of beneficiaries such as students and service companies toward SJAHI" (Indicator 2), interview surveys were conducted with JADIK companies, students and graduates at the time of terminal evaluation, confirming that a certain level of satisfaction had been achieved. Thus, Indicator 2 was mostly achieved. Furthermore, SJAHI and JADIK have held a regular meeting at least once or twice each month and shared information, if there were any dissatisfactions with SJAHI from JADIK; such issues had been shared among them and would be settled through discussion in the meeting.

As mentioned above, SJAHI produced Saudi technicians with appropriate skills for the Saudi automobile service industry and satisfaction among beneficiaries such as students and service companies, toward SJAHI was confirmed to a certain level; hence the project purpose of Phase I was mostly achieved.

Table 1 Achievement of Phase I Project Purpose

Project Purpose	Indicator	Actual
1) SJAHI will be able to graduate Saudi technicians to local automotive service industry. 2) SJAHI will be able to provide an effective training for automotive technical services.	Indicator 1. Number of graduates: 540-600 graduates by the end of the project, August 2006.	【Achieved】 The project successfully sent 565 graduates by August 2006.
	Indicator 2. Satisfaction level of beneficiaries such as students and service companies toward SJAHI.	【Mostly achieved】 It was said that the satisfaction level had been achieved to a certain extent, as a result of the survey for JADIK member companies,

[7] Past exam questions etc. were accumulated and used to help make SQST tests and graduation tests. At the time of completion of Phase I, about 2,000 questions had been accumulated.

【Mostly achieved】		students and graduates at the time of terminal evaluation.

(Source: Terminal evaluation report, Documents provided by the Japan International Cooperation Center (JICE))

【Phase II】

Given that the three following outputs have been achieved, Phase II is assumed to have achieved its purpose, whereby SJAHI will continuously be able to improve its educational level to meet the requirements of the domestic automotive industry; A solid school management system supported by proper collaboration with the private sector has been established (Output 1), Proper examination, with a feedback and grading system have been established and quality control of students is implemented (Output 2), A method to continuously improve educational contents has also been established (Output 3).

As a result of the survey, SJAHI held monthly meetings with working groups[8] of JADIK members and shared necessary information and during the Joint Coaching Program (JCP)[9], JADIK also provided SJAHI graduates' opinions to SJAHI instructors, so effective collaboration with JADIK was done. Internal regulations and operational manuals necessary for solid school management were also formulated and operated (Output 1). Feedback based on the results of the test evaluation to individual students could not be confirmed as a case, but as for the grading system, a committee was set up to study it and the necessary discussion took place in the quality improvement committee. Regarding the practical examination questions, how the results of such examinations should be evaluated was considered more important than the extent to which the number of such examination questions should be increased. Therefore, SJAHI strove to minimize instructor's individual differences in evaluating answers to practical examination questions, by supporting Japanese experts. In this way, quality control of students became generally possible (Output 2) in a movement toward the establishment of proper examination systems, those feedback and grading systems. Regarding improvement of educational content based on the result of the examination evaluation, it became possible to revise the educational contents on a timely basis if necessary, irrespective of the examination evaluation result. Conversely, there is an opinion that it is difficult to revise and improve educational contents

[8] It was a newly established organization at that time and twice-monthly meetings were held addressing issues to be solved between SJAHI and JADIK.

[9] The vocational training program is conducted jointly by SJAHI and JADIK for SJAHI graduates for six months after they enter JADIK.

based on the result of examination, which was originally expected, except for revising lesson plan such as increasing supplementary classes. Thus, the task of revising and improving educational contents would not be implemented from such perspective (Output 3). Meanwhile, work to continuously improve educational contents required continuous follow-up of SJAHI graduates and surveys of student needs. Continued follow-up for graduates is expected to take place six months after graduation while also tracking the situation of graduates voluntarily, however, except for these surveys; there has been no systematic follow-up survey for graduates. The needs survey for students was not recognized as part of the project plan and not conducted, but the change of time allocation and schedule between theoretical and practical classes were done by instructors in consideration of the reaction or attitude of students attending each class.

Based on the above results, among the indicators that measure the achievement of the project purpose, regarding the "Satisfaction level of beneficiaries such as students and service companies toward SJAHI" (Indicator 1), the survey of such satisfaction level was conducted at the project terminal evaluation and the satisfaction level was generally found to be high for each item (60% or more on average). However, regarding the occupational ethical aspect, the proportion of answering "not so satisfactory" (66%) was as high as that of answering "satisfactory" regarding "Satisfaction with SJAHI". Although it is unknown whether improvement policies and plans were finalized for "Policy and plan on improving the educational level in SJAHI become clear." (Indicator 2), progress of the improvement plan was reported in the annual Joint Coordination Committee (JCC) [10]and progress management for improving has been done. Consequently, it is evaluated that the output targeting this indicator was achieved. In addition, as described above, in terms of updating the curriculum, this was done with improvements in response to industry needs and advances in automobile technology. As for "Percentage of SJAHI Graduates who meet a certain level." (Indicator 3), as shown in Table 2, SJAHI's graduation rate is 80% or more and the number of graduates during the project period with mechanic third-grade in Japan reached 592[11] at the time of completion of Phase II. Regarding the "Percentage of SJAHI Graduates in the domestic automotive industry." (Indicator 4), it is difficult to obtain accurate figures because statistical data on Saudi auto industry technicians and tracking information on SJAHI graduates could not be obtained. However, as a

[10] Although JCC meetings are usually held during the technical cooperation project, from completion of the project to the ex-post evaluation (February 2017), they were held continuously due to the succeeding project, which is supported by the Japan International Cooperation System (JICS) (See footnote 27 for further details) is implemented.
[11] It has been a requirement for SJAHI 's graduation to have Japanese mechanic level 3 grade.

result of making an assumption calculation based on the Phase I terminal evaluation report[12] and the past SJAHI tracking survey results, the proportion of SJAHI graduates of all domestic automobile industry technicians on completion of Phase II was considered to be about 2%.

Based on the above, the Phase II project purpose was largely achieved.

Table 2 SJAHI graduates during Phases I and II

	Phase I	Phase II	Total
Project Period	September, 2001 – August, 2006	September, 2006– August, 2009	September, 2001 – August, 2009
Graduation generation during the above period	1–3 generation	4–6 generation	1–6 generation
The number of graduates	565	592	1,157
Average graduation rate	90%	81%	86%

(Source: Documents provided by JICE)

Table 3 Achievement of the Phase II Project Purpose

Project Purpose	Indicator	Actual
SJAHI will continuously be able to improve its educational level to meet the requirement of the domestic automotive industry. 【Mostly achieved】	Indicator 1 Satisfaction level of beneficiaries such as students and service companies toward SJAHI.	【Mostly achieved】 A survey of the satisfaction level of students and service companies toward SJAHI at the terminal evaluation in March 2009, was conducted and revealed a generally high satisfaction level. As there were no significant timing differences between the survey and the project completion, it is considered that the satisfaction level remained high at the project completion except for occupational ethics.
	Indicator 2 Policy and plan on improving the educational level in SJAHI become clear.	【Achieved】 The policy and plan were reported, and progress of the improvement plan was discussed at the annual JCC meeting. Also, in response to industry needs

[12] As of 2003, the total number of automobile mechanic technicians in companies with 20 or more employees is about 50,000.

		and advances in automobile technology, the curriculum was improved.
	Indicator 3 Percentage of SJAHI Graduates who meet a certain level.	【Achieved】 The graduation rate of SJAHI was as high as 80% or more and the number of graduates with Japanese mechanic 3 level had reached 592 at the time of completion of Phase II.
	Indicator 4 Percentage of SJAHI Graduates in the domestic automotive industry.	【Mostly achieved】 As a result of assumptive calculation (the cumulative SJAHI graduates on completion of Phase II × their retention rate to the related domestic auto industry/ the number of domestic automobile industry technicians), the figure was 2% (1,157 graduates × 80% / 50,000 technicians). Thus, it is inferred that 2% is the proportion of SJAHI graduates relative to the total number of domestic automobile industry technicians.

(Source: Terminal evaluation report, Documents provided by JICE and JICA)

3.2.2 Impact

"Saudization in the field of automotive service engineering is promoted", the overall goal of Phase I is the same as that of Phase II. Therefore, the degree of achievement of the overall goal at the time of ex-post evaluation is evaluated with a common indicator for Phases I and II. In addition, the indicator at the time of planning was the "Number and percentage of Saudi technicians in the automotive service industry" in common and "Level of credibility of Saudi technicians in automotive service industry." as another indicator for Phase I.

3.2.2.1 Continuity of Output, Project Purpose

In the following, it is mentioned that the continuation status at the time of ex-post evaluation of the outcome / project purpose was "mostly achieved" or "partially achieved" on completion of each Phase. In addition, it is confirmed that the output which was "achieved" at the time of completion of each Phase was continuously effective at the time of ex-post evaluation.

- Output

【Phase I】

Output 1: The project operation unit (system) is established.

As for the project operation unit or system of SJAHI, it is evaluated that it was established through further improvement pending completion of Phase II. Regarding the issue on

management pointed out at the terminal evaluation of Phase I, for example, regarding the case of "SJAHI principal concurrently held the duties as a member of one of the JADIK member companies ", while the situation remains unchanged, no specific problems has been reported. In addition, according to data obtained from JICE, the number of SJAHI staff at the time of ex-post evaluation was 93 as of May 2017, with 55 faculty staff (31 instructors, 14 teachers including English teachers). Thus, the total number of staff at the time of ex-post evaluation had further increased than 68, at the time of terminal evaluation of Phase II and in terms of the management system, would have been further strengthened.

Output 3: Technical capability of the SJAHI instructors, the counterpart personnel is upgraded.

Although it was pointed out that four junior instructors retired from SJAHI without passing the SQST in Phase I, no similar retirees were reported from the completion of Phase I to the time of ex-post evaluation. Meanwhile, at least until 2016, SJAHI accepted 3 to 4 excellent SJAHI graduates as junior instructors every year as candidates for future instructors.

Output 4: Training methodology and materials are developed.

In the main, training materials have been reviewed on a timely[13] basis as necessary since on the terminal evaluation of Phase I and at least during Phase II, SJAHI had become able to do it on its own without requiring the input of Japanese experts.

Output 6: Internal evaluations for the training education are implemented systematically

Regarding the scrutiny of examinations, it was conducted setting goals for each subject on the increase of the number of examination questions in the test banks that had already existed until the completion of Phase I and on the quality improvement of the examinations. As for the how the technical examination was implemented, the test and scoring methods were standardized during Phase II. In addition, as described in Phase II Output1, at least during Phase II, Study and Examination Policy were prepared, indicating guides related to the instructor's implementing test.

【Phase II】

Output 2: Proper examination, its feedback and grading system are established, and quality

[13] It was reviewed when the original Japanese teaching material were changed or when Saudi Arabia's specification became particularly necessary.

control of students is implemented.

As for the feedback on the test evaluation results, SJAHI students can check the results individually on the SJAHI Web at the time of ex-post evaluation.

Output 3: Method for continuous improvement of education contents is established.

Even at the time of ex-post evaluation, the situation has not changed significantly since the completion of the project. A method to continuously improve educational contents based on the result of test evaluation was only partially achieved.

- Project Purpose

Regarding the "Satisfaction level of beneficiaries such as students and service companies toward SJAHI.", which is a common indicator of the project purpose for Phases I and II, as mentioned above, the credibility of SJAHI graduates with respect to the government, JADIK and beneficiaries was high at the time of ex-post evaluation. Consequently, the satisfaction level of beneficiaries such as students and service companies toward SJAHI would be also high.

3.2.2.2 Achievement of Overall Goal

Regarding Indicator 1 "Number and percentage of Saudi technicians in the automotive service industry", given the lack of accurate statistical data of domestic automobile technicians and Saudi technicians as mentioned above, it is difficult to indicate accurate figures. However, if the same assumptions as above is retained, the proportion of SJAHI graduates of domestic auto industry technicians at the time of ex-post evaluation is also about 2% with the following preconditions: it is presumed Saudi technicians are SJAHI graduates, the cumulative total of SJAHI graduates at the time of ex-post evaluation is 2,831. including 14th generations (graduation in August 2017), and from the growth in the volume of imported cars, it is assumed that the number of mechanics at the time of ex-post evaluation was 100,000, which is double that at the time of completion of the project.

Conversely, the target value was not originally set for the indicator. For that reason, despite the difficulty of judging criteria for achievement, the annual graduates were supposed to be 180 to 200 since the beginning of Phase I. In fact, since the number of average annual graduates up to the time of ex-post evaluation was 202, the percentage of SJAHI graduates as a proportion of the group of domestic automotive industry technicians mentioned above was largely reasonable.

Thus, the indicator is largely achieved.

Regarding Indicator 2 "Level of credibility of Saudi technicians in automotive service industry.", the attendance of Saudi young workers is generally regarded as problematic[14] and a similar tendency[15] emerges for SJAHI graduates. However, among them, because of vocational education through 5S[16] activities, the evaluation of SJAHI graduates in view of ethical aspects is high compared with other Saudi young workers, in addition, since the technical strength of mechanic level 3 and English ability are advantages for SJAHI graduates, the credibility of SJAHI graduates is relatively high[17]. This is also reflected in the fact that SJAHI graduates have been hired away from other companies with favorable treatment. Furthermore, the results of the analysis separately conducted at the time of ex-post evaluation (see attachment for details) are the same and the credibility of SJAHI graduates from the government and JADIK, is high. According to an evaluation of Saudi vocational schools at all 25 schools conducted by an external consultant employed by Saudi Arabian Government agencies[18] in 2016 (multifaceted evaluation, including the school management system, student quality, evaluation by the side who employed the graduates etc.), SJAHI gained a very high evaluation.

Based on the above, the project has largely achieved the overall goal of Phases I and II.

Table 4. Achievement of the Overall Goal

Overall Goal	Indicator	Actual
Saudization in the field of automotive service engineering is promoted.	Indicator 1 Percentage of Saudi technicians in the automotive service industry.	【Mostly achieved】 The cumulative total of SJAHI graduates is 2,831 until the 14th grade (graduation in August 2017). If 100 thousand technicians (50 thousand technicians × 2) are needed in Saudi Arabia, it is estimated that 2% (2,831 × 80% / 100 thousand) is the proportion of SJAHI graduate relative to the current domestic automotive industry technicians by simple

[14] According to interview with experts and reading the terminal evaluation report of Phase II.
[15] According to a survey of JADIK, which was conducted during the terminal evaluation in March 2009, approximately 70% of respondents answered that they were "not very satisfied" in terms of the attendance, punctuality and other work attitudes of SJAHI graduates.
[16] It refers to activities designed to systematically tackle issues to maintain or improve work circumstances in the manufacturing industry, service industry and others. 5 S refers to initials for arrangement, organization, cleaning, cleanliness and discipline in Japanese.
[17] According to the survey conducted at the termination evaluation in March 2009, 60% of JADIK answered that the technical level of SJAHI graduates was "very high" or "satisfactory".
[18] Strategic Partnerships Colleges of Excellence

		calculation.
	Indictor 2 Level of credibility of Saudi technicians in automotive service industry.	【Achieved】 Because of vocational education through 5S activities, the technical strength of mechanic level 3 and the English ability, the credibility of SJAHI graduates is relatively high. In addition, as a result of the analysis separately conducted at the time of the ex-post evaluation, the credibility of SJAHI graduates from the government and JADIK was high. Therefore, despite the inability to measure the credibility of Saudi technicians, as described above, based on the fact that SJAHI graduates are active in society as technicians, it is considered that SJAHI graduates help improve the reliability of Saudi technicians.

(Source: Terminal evaluation report, Documents provided by JICE)

3.2.2.3 Other Impacts

In Saudi Arabia, after establishing SJAHI, Strategic partnership program was invented, with the basic framework[19] as follows: the Saudi Arabian Government establishes a training center (polytechnic) in collaboration with private enterprises and the government provides financial support such as construction and operating funds, scholarships to students, etc., while private enterprise contracts students as employees since their admission to polytechnics and continue their contracts, even after graduation. This is exactly what followed the success of SJAHII's business and paved the way for SJAHI to become a model[20] for vocational training schools in Saudi Arabia. Also, the GM in the United States, the Hyundai Motor Company in South Korea other than Japanese in Saudi Arabia have opened similar training schools there, respectively. Consequently, it is said that the impact of SJAHI's business model on Saudi Arabia's policy implementation and on automobile manufacturers other than Japanese has been high and the contribution of the project is high.

[19] In the case of SJAHI, specifically, there is Human Resource Development Fund (hereinafter referred to as HRDF) of Saudi Arabian government as government support and JADIK as private support.
[20] The number of yearly applicants to SJAHI has been an average of 5,000, which is about 20 times the actual number of enrollees - about 250 - since 2008, when online acceptance commenced. This shows the popularity of SJAHI.

Column: Success Factors of the Public-Private Partnership

This project is said to constitute the one successful example of a public-private partnership that spans both Japan and Saudi Arabia. Specifically, in the infrastructure construction, land to construct SJAHI was provided by the Saudi side and the construction expense of SJAHI was shouldered half by JADIK (Saudi side) and half by JAMA (Japan side). Regarding funding, there has been strong financial support with a ratio of HRDF (75%) and JADIK (25%) for SJAHI operating expenses and scholarships. Technical assistance is continued by the Ministry of Economy, Trade and Industry (Japan) after technical cooperation by JICA. It is said that the depth of public and private cooperation, especially between SJAHI and JADIK, was crucial for the success of this project.

Normally, for public-private partnerships, the private sector emphasizes the risk share. From the opposing perspective, key for the private side is whether the merit met in terms of the cost invested is obtainable or not. For this project, avoiding costs in the event of non-compliance with Saudization is the merit for the private side. In other words, if not complying with Saudization, there will be a need to reduce the employment of foreign workers under the regulation and a risk that continued business in Saudi Arabia will no longer be feasible. To mitigate such risk, it is necessary to search Saudi technicians on their own or nurture them, which is very costly. In this project, students have to sign an employment contract with JADIK at the enrolling in SJAHI, which means that the private sector (JADIK) can secure the adoption of Saudi technicians with the required technology. On the other hand, because of contracting employment contracts, responsibility is born for human resource development in a good sense for JADIK and JADIK will cooperate and engage with education in SJAHI more actively in the medium and long term, so that SJAHI students can have appropriate vocational training at SJAHI. Finally, this means that SJAHI students have also secured job placements after graduation, which reassured them and helped them strengthen the technical skills required immediately and their English proficiency. This means increasing their market value as human resources after graduation and since most of the expenses during enrollment are paid by HRDF, JADIK funding, the popularity of SJAHI has increased, which would help establish the SJAHI brand.

Conversely, as for coordination with the government side and the SJAHI, on the Japanese

side, JAMA mainly coordinated with the Japanese government while on the Saudi side, a working group formed in JADIK and coordinated with the Saudi government. As a result, compared with cases where each automobile manufacturer individually negotiates and discusses with the government side in each country, it is said that the overall efficiency of the private side has been improved, fewer man-hours were required for communication correspondingly, and the so-called adjustment costs could be saved. The same is true for the government as well. In addition, because effective collaboration with the private sector was an output of the project (Phase II output 1), the dispatched Japanese experts worked as a bridge to achieve such output, which helped ensure such project costs were input more efficiently.

This project has largely achieved the project purpose of "SJAHI will be able to graduate Saudi technicians toward local automotive service industry" and "SJAHI will be able to provide an effective training for automotive technical services." (Phase I), "SJAHI continuously be able to improve its education level to meet the requirement of the domestic automotive industry" (Phase II), and the overall goal "Saudization in the field of automotive service engineering is promoted", because it is confirmed that Saudi Arabian technicians had been produced to the automobile service industry as SJAHI graduates and its effect is high to be as planned. Therefore, the effectiveness and impact of the project are high.

3.3 Efficiency (Rating: ②)

3.3.1 Inputs

3.3.1.1 Elements of Inputs

The contents of the dispatched experts in Phases I and II, contents of trainee acceptance in Phase I and equipment provision were almost as planned and appropriate. Four Saudi Arabian instructors who received training in Japan from 2001 to 2002 retired from SJAHI without passing the SQST test, but this did not have a large negative impact on the project.

Table 5 Plan and actual figures for project inputs

Inputs	Plan	Actual
【Phase I】		
(1) Experts	Long-Term (6 experts)	Long-Term (11 experts)

	Short-Term (3 experts)	Short-Term (7 experts)
(2) Trainees received	1. Counterpart (C/P) training in the project type technical cooperation 2 trainees to be received in 2001 If necessary after 2002 2. Special group training 5 Saudi junior instructors to be received in 2001 Annually five Saudi junior instructors to be received after 2002	17 trainees received
(3) Equipment	418 million yen for training and facility equipment	454 million yen, mainly on training equipment
Japanese Side Total Project Cost	1,211 million yen	1,217 million yen
Saudi Arabian Side Project Cost	1. 52 Counterparts(C/P) 2. Land, SJAHI building construction Cost (Around 765 million yen) 3. Local cost School equipment such as fixtures not directly related to technical training Operational Expenses 300 million yen (10.55 million SR[21])	1. 59 Counterparts(C/P) 2. Land, SJAHI building construction Cost (Around 800 million yen) 3. Local cost 60 million SR[22] In addition, the SJAHI building construction cost is shouldered half by JAMA (Japanese side) and half by JADIK (Saudi Arabian side) and the above construction cost refers to JADIK's share. JAMA burden costs are not included in the above Japanese side total project cost.
【Phase II】		
(1) Experts	Long-Term (3 experts)	Long-Term (3 experts) Local cost 17 million yen

[21] Exchange rate 1 Saudi Riyal 28.44 yen
[22] Source: Phase I project terminal evaluation report

Japanese Side Total Project Cost	140 million yen	158 million yen
Saudi Arabian Side Project Cost	1. SJAHI building maintenance 2. C/P allocation (Administrative management C/P, technology C/P, administrative staff, assistant staff) 3. Equipment renewal & maintenance cost 4. Other local cost of implementing the project	1. SJAHI building maintenance 2. C/P 68 personals (38 faculty staff and 30 management /administration staff) 3. Training facilities and workshop consumable cost 4. Other local cost Office spaces for JICA experts and other facilities, utilities such as computers and salary for C/Ps

(Source: Documents provided by JICA)

3.3.1.2 Project Cost

The actual Phase I project cost was 1,217 million yen (100% of the plan), compared with the planned cost of 1,211 million yen. The actual Phase II project cost was 158 million yen (113% of the plan), which exceeded the planned amount of 140 million yen, thus the project cost was higher than planned.

3.3.1.3 Project Period

As for the project period, Phase I was from Sept. 2001 to Aug. 2006, which was as planned (100% of the plan). Phase II was from Sept. 2006 to Aug. 2009, which was also as planned (100% of the plan). Thus, Phases I and II were as planned.

In light of the above, although the project period was within the plan, the project cost exceeded the plan. Therefore, the efficiency of the project is fair.

3.4 Sustainability (Rating: ②)

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

The *"National Transformation Program 2020"* is positioned as a five-year plan to achieve Saudi Vision 2030, Saudi Arabia's economic reform plan up to 2030, which was approved at the Cabinet meeting of the King of Saudi Arabia in 2016, although the term "Saudization" is not found in it. Conversely, the direction of "Saudization" itself has remained unchanged and indeed, as a strategic goal of the Ministry of Labor and Social Development in *"National Transformation Program 2020"*, national targets of obtaining vocational training qualifications, improving the Saudi Arabian unemployment rate and improving the school attendance rate of high school graduates at vocational training schools etc. were stipulated and KPIs[23] were provided. According to a report[24] of the United Nations, the population of Saudi Arabia in 2010 was about 27 million based on the census results and the estimated population in 2015 was about 32 million. In addition, the average annual population growth over the past decade has been 3%, showing a very high growth rate. Furthermore, according to the "*National Transformation Program 2020"*, the goal is to set the unemployment rate of Saudi people from the current 11.6% to 9% in 2020.

Based on the above, the related policy and institutional aspects for the sustainability of project effects is high.

3.4.2 Organizational Aspects for the Sustainability of Project Effects

It is understood that as before, TVTC remains responsible for government level issues and the necessary information has been shared with SJAHI through an annual JCC meeting till the ex-post evaluation.

While no organization chart etc. of SJAHI for the ex-post evaluation was available, on completion of the project, SJAHI continuously nurtured 200 to 250 new technicians every year and the number of faculty and staff increased from 68 on project completion to 93 at the time of ex-post evaluation, hence the management system seems to have been completed. In addition, organizationally, administrators are assigned to each department, section[25], meetings are held weekly in each hierarchy and the necessary information is shared there. Internal regulations[26] are also established within a certain range.

[23] This stands for Key Performance Indicators and means important performance evaluation indicator.
[24] Population and Vital Statistics Report 2017
[25] Education department, Student department, Planning and development department, General affairs department
[26] Study and examination policy, Guidelines for Students Recruitment, OJT and JCP Manual, Career Development and Promotion Policy (SQST), Promotional Path and Hierarchy Level Position of SJAHI Instructors, Students Attendance Policy etc.

Meanwhile, no medium- and long-term plans with vision as SJAHI have been formulated. Specifically, it is supposed that SJAHI will be considerably influenced by Saudization in future, whereupon it will be necessary for Saudi Arabians to mainly operate even in the educational field and future trends in the automobile industry will change from the predominant gasoline vehicles in the past to non-gasoline vehicles and the introduction of automatic driving will come into view. Conversely, SJAHI's administration has been operated on the extension of the existed curriculum; mainly depending on the skills of foreign instructors and the knowledge of Japanese experts[27] dispatched from JICE after the project. As a result, there are concerns about sustainability as a system of five or ten years ahead, under the aforementioned external environment changes.

In addition, the organizational structure and financial status of SJAHI remain undisclosed and unclear even in the answers to the questionnaire for this survey. Furthermore, the current principal (director) has been in the position for a long time and has also been concurrently serving to one of the JADIK member companies[28]. Regarding information disclosure, it is primary enough if the information required by the Saudi Arabian Government, JADIK, the Japanese government, which are sources of funding cooperation, is properly provided to these organizations. However, to fulfill accountability to Saudi Arabian and Japanese nationals, it is desirable to further improve transparency.

As mentioned above, although there is no particular problem in the short-term concerning the current system, under future changes in the environment, establishing a system that anticipates five or ten years ahead and formulating a medium- and long-term plan with a vision will be necessary. In this regard, there is concern about the sustainability as to organizational aspects.

3.4.3 Technical Aspects for the Sustainability of Project Effects

As for the curriculum etc., there are ongoing efforts to improve the contents carried out by SJAHI itself. Specifically, a technical curriculum committee has been held under the supervision of the education manager and the chairman and Japanese experts, department

[27] Even after the completion of Phase II, in support of the Ministry of Economy, Trade and Industry and the Agency for Natural Resources and Energy, JICE has implemented training abroad since 2008, dispatched experts since 2009 and provided equipment and materials by joint enterprises with JICS since 2008. As of the time of ex-post evaluation, a cooperation extension until March 2020 has been agreed with the Saudi Arabian side.

[28] As for the point where the principal is in position for a long time and concurrently with a certain position of the JADIK member company, there is a large merit in terms of strengthening cooperation with JADIK and the point itself does not immediately appear problematic. Conversely, for SJAHI's transactions decided by the principal with JADIK, conflicts of interest may occur in some cases. Therefore, it is desirable to take the lead in raising the transparency of SJAHI to show externally that there is no problem even in such cases.

managers, section managers, development staff participated there and then changed the curriculum as necessary through discussion. Also, by instructors who visit JADIK during the OJT and JCP, information gathered such as the employment situation of SJAHI graduates and JADIK's opinions on SJAHI, have been used to improve the educational content of SJAHI. The educational method and various manuals have been regularly reviewed in accordance with the update of the curriculum and at least during the period of Phase II, SJAHI itself reviewed the same without any support by the Japanese experts.

Regarding the technical capabilities of the instructor, there is no problem in continuously producing graduates with the targeted skills on the current volume, except for the influence of changes in the external environment as mentioned above in 3.4.2.

Regarding the system of operating and maintaining equipment, periodic checks and maintenance are carried out by instructors etc. who are responsible for each set of equipment. In addition, in the warehouse, the person in charge takes an inventory on a quarterly basis and reports the results to the department / section manager. At the end of the fiscal year, overall and detailed stocktaking is carried out and repairs are performed internally or externally as necessary. The medium- and long-term procurement plan for equipment is prepared and updated as necessary.

Conversely, as mentioned in "Organizational Aspects of the Implementing Agency for the Sustainability of Project Effects", there are several unknown parts on how to procure or plan the necessary equipment related to future new technologies in the medium to long term and although it is fine if support by Japanese experts continues, there are concerns after such support ends.

Based on the above, there are concerns about technical aspects of the Implementing Agency.

3.4.4 Financial Aspects for the Sustainability of Project Effects

Although it was not possible to obtain financial statements etc. from SJAHI at the ex-post evaluation, the possibility of continuing support by HRDF[29] is high. In addition to assisting with 75% of SJAHI's operating expenses and student scholarships, HRDF subsidizes 50% of salaries to graduates for one year after they enter each JADIK company. In addition, JADIK has subsidized other 25% of SJAHI's operating expenses and student scholarships.

Based on the above, there is no particular problem from the financial aspect.

[29] HRDF was a program introduced by the Saudi Arabian government in 2005 for employment and entrepreneurial support for young Saudi citizens and is valued at US $ 1 billion.

Based on the above, some minor problems have been observed in terms of the organizational and technical aspects of the implementing agency. Therefore, the sustainability of the project effects is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The goal of this project was to ensure the Saudi-Japanese Automotive High Institute (SJAHI) would be able to provide an effective training for automotive technical services, graduate Saudi technicians toward the local automotive service industry, continuously improve its educational level to meet the requirements of the domestic automotive industry, thereby promoting Saudi Arabian employment expansion policy (Saudization) in the automotive service engineering field.

The project, which develops capacity for Saudi Arabian nationals by implementing vocational training, is sufficiently consistent with not only Saudi Arabia's development policy, development needs through both the ex-ante and ex-post evaluation, but also Japan's ODA policy at the time of the ex-ante evaluation, and from these results, its relevance is high. SJAHI has provided technicians having attained a certain level, the satisfaction level of beneficiaries such as service companies and students toward SJAHI have been mostly high and SJAHI tackles efforts to improve the educational level. Moreover, the credibility of Saudi technicians in the automotive service industry was also high at the time of ex-post evaluation. From these, the effectiveness and impact of the project are rated as high. While the project period was as planned, the project cost was higher than planned; hence the efficiency of the plan is rated as fair. Concerning project sustainability, while the policy background to support SJAHI's activities is ensured, some minor problems have been observed in terms of the organizational and technical aspects; hence the sustainability of the project effects is fair.

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

4.2 Recommendations

4.2.1 Recommendations to the Implementing Agency

"The necessity of the independent medium- and long-term plan formulated by SJAHI"

In future, it is supposed that SJAHI will be considerably influenced by Saudization and there will be a need for Saudi Arabians to mainly operate even in the educational field, future trends

in the automobile industry will change to vehicles other than gasoline and the introduction of automatic driving will also progresses gradually. Therefore, it is recommended to identify current issues to implement when introducing a new curriculum in preparation for new technological skills in five and ten years respectively, procuring the necessary equipment and materials for the new curriculum, and nurturing Saudi Arabian staff or executives to manage these activities independently, and formulate the future plan by SJAHI proactively.

"Improvement of accountability"

Although disclosing of SJAHI's organization chart and financial statement are required through a questionnaire in this survey, those are not available. Also, information on SJAHI's organization chart and financial statement is not disclosed on SJAHI's website. Considering that SJAHI is a public institution of Saudi Arabia and established and operated by Japanese government support, including Japanese ODA, it is recommended that SJAHI officially disclose such information and discharge their duty to Saudi Arabian and Japanese nationals in terms of accountability

4.2.2 Recommendations to JICA

None

4.3 Lessons Learned

(1) Success Factors of the Public-Private Partnership

For this project in particularly, due to the depth of the public-private partnership between SJAHI and JADIK, it was possible to continuously produce graduates with expected technical skills. In addition, due to sufficient subsidies from the Saudi Arabian Government and JADIK, the financial aspects of the implementing agency for sustainability have been strengthened. Thus, it can be said that this project is a good example of public-private partnership. Based on the results of the analysis in the column of 3.2.2.3 of other impacts, the following three points are considered important to strengthen public-private partnership in future similar vocational training projects:

① Formulating projects with a view to reducing the future cost of the private sector
② Fostering a sense of responsibility and improving business participation awareness on the private side by concluding employment contracts when entering school

③ Creating a scheme that minimizes the coordination costs of the private side

(2) Attention on setting indicators and thoroughly monitoring them based on indicators

This project includes unclear definitions of indicators and unknown target values in Project Design Matrix (PDM). In addition, the sharing of indicators (including changes), the target definitions, and the issue recognitions were insufficient among JICA, experts, C/P and JADIK. Even so, the project has been implemented while awareness of the PDM has partially differed, which has led to the following problems:

1. For some indicators whose definitions were unclear, the project proceeded based on a different understanding or interpretation by each organization and individual, whereupon achievement of the indicator was low or non-existent.
2. Inadequate setting of target values prevented progress management during the project period and implementation management based on the PDCA cycle was insufficient.
3. Insufficient sharing of issue recognition meant even in the event of deficiency in the definition of the indicator or the target value setting, it could not be rectified.

The following countermeasures are considered for implementing similar projects in future:

① Upon formulating indicators, it is necessary to clearly distinguish what is quantitatively and qualitatively measurable respectively and especially for qualitative ones, there should be proper definitions to avoid misunderstanding or distortion among interested parties. In either case, it is necessary to clarify the numerical value (quantitative indicator) and the situation (qualitative indicator) at the beginning of the project and document them with the method of obtaining the same.

② If necessary to revise or add an indicator to be more appropriate one during project implementation, under the agreement of the partner country's government, JICA's responsible section should play a central role, and make the changes thoroughly known to internal JICA parties, experts, partner country government and C/P.

③ Project progress was reported to JICA headquarters and overseas office through a monthly report by experts, however, progress on the indicators leading to each goal and output would not have always been reported. Therefore, in the monitoring system implemented on a semi-annual basis by JICA as of the time of the ex-post evaluation, it is recommended

that the existence of divergence from the original design (PDM) be confirmed and progress thoroughly managed.

Appendix 1

Achievements of Phases I and II projects

	Output	Indicator	Actual
Phase I			
Output 1	The project operation unit is established.	Number and capacity of staff, budget and settlement account, number of committees and meetings, amount of publicity	【Mostly achieved】 It is judged that the project was carried out with an emphasis on achievement of output rather than individual indicators and the evaluation is conducted on that. As a result, while there was room for improvement to achieve the solid management of SJAHI, Output 1 was mostly achieved.
Output 2	The necessary machinery and equipment for technical training are provided, installed, operated and maintained properly	1. List of operation and maintenance manuals 2 Maintenance records 3.List of maintenance contracts to procure spare parts 4.Contents and condition of machinery and equipment	1. 【Achieved】 While the present list of operation and maintenance manuals was not provided, it is confirmed that each manual was updated with the cooperation of JADIK. 2. 【Achieved】 The result of maintenance was recorded. 3. 【Achieved】 The list of maintenance contracts to procure spare parts would not be prepared, because maintenance of spare parts was done by those providers in general. Conversely, dedicated staff was assigned and there was no problem in procuring spare parts. 4. 【Achieved】 As mentioned above, dedicated staff was assigned to study the situation of equipment and prepare for maintenance. A renewal and a comprehensive plan was developed, which serves as a reference to periodically maintain /

			replace the training equipment.
Output 3	Technical capability of the counterpart personnel is upgraded.	1.Assessment by the Japanese experts. 2.Target training skills achieved. 3.SQST (SJAHI Qualification System Test) All Junior Instructors will become Instructor II within the cooperation period.	1. 【Achieved】 The technical level of instructors was improved by Japanese experts' joining the assessment team members of SQST and teaching evaluation points to the instructors from the perspective of training and promoting instructors. 2. 【Achieved】 While the target training skill level was for Instructor II, SQST was set to quantify their nurturing process (Indicator 3). As a result, the target level of the Saudi Junior Instructor was cleared, which helped improve their abilities. 3. 【Partially Achieved】 During the period 2002 to 2005, all eight junior instructors who received counterpart training in Japan successfully passed the SQST exam and were promoted to the Instructor II position. Conversely, four of the five Saudi junior instructors trained in Japan from 2001 to 2002, left SJAHI without passing SQST
Output 4	Training methodology and materials are developed.	1.List of manuals, textbooks, and training materials developed 2.Training methodology developed	1.【Mostly achieved】 Textbook and material preparation guidelines were drafted, implemented and updated. 2. 【Mostly achieved】 Training methodology, manuals have been periodically developed and revised if necessary as curriculum was updated.
Output 5	Curricula for automotive technical services training are	1. Number of students who achieved targeted skills for automotive	1. 【Achieved】 The targeted skills for automotive technical service require knowledge of the 3rd grade Japanese automotive

	implemented systematically.	technical service	technician level at least and skills close to the 2nd grade Japanese automotive technician level. Meeting these targeted skills is the SJAHI graduation requirement. The number of SJAHI graduates till Aug. 2006 is 565, which equaled the target.
Output 6	Internal evaluations for the training are implemented systematically.	1.Record of evaluations.	1.【Mostly achieved】 At the project planning stage, it was recognized that internal evaluations for training mean not only evaluation for students but also evaluation of education by SJAHI, including a scrutiny of examinations. Conversely, SJAHI recognized the assessments carried out by the head instructors and Japanese experts. Class observation visits are conducted, and the lecture delivery is evaluated by the head instructors and Japanese experts. The tests bank which was accumulated examination samples was created during Phase I. After that, the number of samples was increased, and their contents were reviewed during Phase II. These activities helped scrutinize examinations and standardize methodology of examinations.
Phase II			
Output 1	Solid school management system supported by proper collaboration with private sector is established.	1.Number of internal policies and regulations for the school management 2.Practical manuals and charts for school management are made.	1.【Achieved】 Main six internal policies [30] and regulations were elaborated. 2.【Achieved】 Practical manuals such as OJT and JCP Manual guiding instructors to operate a 2-month OJT program for all SJAHI students and JCP aforementioned, were completed and in use. Regarding

[30] Study and examination policy, Guidelines for Students Recruitment, OJT and JCP Manual, Career Development and Promotion Policy (SQST), Promotional Path and Hierarchy Level Position of SJAHI Instructors, Students Attendance Policy

		3.Results of collaborations between SJAHI and private sector	the charts as a tool to solve any problems, it was not answered by SJAHI because the definition of the charts seems unclear. Therefore, not answering the charts will mean not tackling any problems and it is not judged that there was a significant influence on achievement of the output. 3.【Achieved】 The necessary information was shared between SJAHI and JADIK through a monthly meeting held by SJAHI and the JADIK working group. Also, SJAHI instructors were fed back details of SJAHI graduate's working status by JADIK during JCP.
Output 2	Proper examination, its feedback and grading system are established, and quality control of students is implemented.	1.Practical examination questions for students are made. 2.The existing examination and grading system is improved. 3.Number of cases which implement the feedback based on the results	1.【Achieved】 Regarding the practical examination questions, how it should be evaluated was considered more important than the extent to which the number should be increased. Therefore, SJAHI tried to minimize instructor's individual difference when evaluating the answers to practical examination questions, with the support of Japanese experts. 2. 【Achieved】 The committee was formed to study the existing examination and grading system and was discussed in the QIC-(Quality improvement committee). Consequently, the system was improved. 3.【Mostly achieved】 Regarding the number of cases which implement feedback based on results, the feedback would be recognized as based on the result of individual examinations by SJAHI. However,

			because the counting of cases was performed manually and took time to analyze, the case itself was not recorded. Conversely, the nature of the feedback based on results to be performed was discussed with Japanese experts since the late stage of Phase II and introduced till the completion of Phase II.
Output 3	Method for continuous improvement of education contents is established.	1. Education contents such as curriculum, lesson plans, and textbooks are reviewed. 2.Establishment of follow-up survey for graduates is implemented. 3.Needs survey for students is implemented.	1.【Partially achieved】 The curriculum and textbooks could be revised as required. Conversely, there is a view that it is difficult to revise and improve the educational contents based on the result of examination, that was originally expected, except for revising the lesson plan (e.g. increasing supplementary classes). As a result, at least, increasing supplementary classes based on the result of examination was conducted. Thus, the output was partially achieved. 2.【Partially achieved】 Since the late stage of Phase II, the follow-up survey for graduates within 6 months after graduation to understand their performance in the JADIK member companies has been conducted. At the same time, follow-up for other graduates was also performed by each instructor on a voluntary basis. However, except for these surveys, there has been no systematic follow-up survey for all graduates. 3.【Partially achieved】 The needs survey for students was not recognized as part of the project plan. Consequently, the needs survey for students was not conducted. Conversely, the change of time

			allocation and schedule between theoretical and practical classes was done by instructors in consideration of the reaction or attitude of students attending each class.

(Source: Documents provided by JICA, SJAHI, Japanese expert etc.)

JICA Evaluation Department

On Views of Experts

In this ex-post evaluation, opinion of academia was invited to capture more specialized and diverse views for the projects, in addition to the perspectives of the DAC five evaluation criteria to be conducted by the external evaluator. JICA selected and enlisted the support of a leading figure in the field: Go Shimada, Associate Professor of University of Shizuoka. Prof. Shimada conducted interviews with relevant agencies and organizations in Saudi Arabia in order to reveal the contribution of this project to the development of industrial human resources in the country. The result of the analysis was appended to the evaluation report as attachments.

The Contribution of the Saudi Japanese Automobile High Institute (SJAHI) Project to Saudization Policy

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The SJAHI Project is a quite unique ODA project. The public-private partnership of this project differs considerably from those of previous projects. First, on the Japanese side, JICA and the Japan Automobile Manufacturers Association (JAMA) worked together; this partnership included a financial tie-up in which JAMA, a private organization, shouldered construction costs of about 765 million-yen, 50 percent of the costs. On the Saudi side, the Japanese Automobile Distributors in the Kingdom (JADIK) contributed financially by bearing the remaining half of construction costs. In other words, the private sector fully financed the institute's construction cost. The JADIK also bears 25 percent of the institute's operating costs and scholarship fund. Such heavy financial contribution from private sector is very unusual.

Second, upon entering the SJAHI, every student has already secured a job after graduation, and also get a scholarship from the firm. As already mentioned, 25 percent of the institute's operating costs and scholarship fund is borne by the JADIK.

Third, the remaining 75 percent of the costs is borne by the Human Resources Development Fund (HRDF) established by the Saudi government to ensure that every student is on a scholarship. The HRDF also subsidizes the JADIK member companies for half the salaries paid to graduates they employ for one year after their employment. It is extremely unusual for a government to subsidize such huge amount toward vocational training. This heavy subsidy policy was implemented to promote country's Saudization, which is the official national policy to replace foreign workers with Saudi nationals in the private sector. In this study, it is analyzed how much the SJAHI project has contributed to the Saudization policy.

1. Number of applications and graduation rate.

The SJAHI has a stable number of graduates, and its graduation rate is higher than that of other vocational schools in Saudi Arabia, according to the Government. With some fluctuation, the number of applicants to the SJAHI is enormous, indicating the school's popularity. The high graduation rate and huge number of applicants reflect the SJAHI's high educational standard and good prospects for building their careers after graduation.

On the other hand, given the project's overall goal of contributing to Saudization, graduates are

expected not to leave jobs at the JADIK member companies they were offered before admission to the school. The graduates are required to stay in such jobs for at least three years after graduation. If they quit within three years they have to reimburse their whole scholarship amount to their sponsor companies. The aim of this rule is to discourage graduates from quitting within mandatory three years. However, according to interviews conducted to the SJAHI, the JADIK, and other organizations, the retention rate was not very high.

The graduates who leave their initial firms can be categorized into two groups. One group is graduates who are headhunted by automobile dealers of non-Japanese brand companies such as BMW and GM within the three-year period of employment with the JADIK member companies. These headhunting companies recognize the SJAHI graduates' high skills. In this case, headhunting companies lure the graduates with higher and attractive salaries as they do not have to spend any amount on the training cost to train the skilled workforce. Another group is graduates who get a better paying job at a government office's automobile department after the three-year period of mandatory employment (without paying the penalty).

Then, do those low retention rates mean that the SJAHI has made little contributions to the Saudization policy of increasing the employment of Saudi Arabians? Further, has the SJAHI had little impact on achieving the overall goal? To answer these questions, the policy's background of Saudization needs to be considered.

2. Policy background of the Saudization policy.

Though SJAHI has not achieved high retention rates, it is considered to have contributed to Saudization from the following three reasons. First, the SJAHI can be considered to have achieved some success in dual labor market of Saudi Arabia. Second, there is no doubt the SJAHI has promoted the employment of Saudi Arabians because graduates leaving their initial companies also get employment in other firms and the government. Third, recent changes in the labor market policy have increased demand for Saudi workers, including graduates of the SJAHI. These three points will be examined one by one in the next section.

A dual labor market of Saudi Arabia's

As discussed above, the SJAHI graduates appear to be highly rated as they have employment opportunities not only at the JADIK member companies but also at other companies. The full extent of this success needs to be considered, taking the dual labor market of Saudi Arabia into consideration. In Saudi Arabia, until 1984, university graduates

had been prohibited from working in the private sector; they were required to work only for the government after graduation because their tuition was paid by the government. Accordingly, private companies had no choice but to rely on foreign workers.

As Saudi Arabia is rich in natural resources, there is massive inflow of international capital to Saudi Arabia. Due to the inflow of capital, exchange rate rises. Then, this appreciation of exchange rate makes it difficult for Saudi Arabia to export. All export goods become more expensive, and, on the other hand, all import goods become cheaper. This discourages domestic industry to expand, which is a typical phenomenon called "Dutch disease."

As exchange rate appreciates, the wages of foreign workers also become cheaper than those of Saudi workers. Thus, Saudi workers are less competitive in the labor market because companies prefer cheaper labor. In addition, many Saudi workers cannot compete with foreign workers in terms of productivity and experience. This is because the country's private sector has historically depended on foreign workers for labor, making it difficult for Saudi workers to acquire the necessary skills. For Saudi companies, if they employ Saudi workers, it means it will increases cost with lowering productivity. Further, for the Government, replacing cheap but skilled foreign workers with Saudi workers may weaken international competitiveness (making it difficult to diversify its industries from oil related industries). These are the challenges Saudi Arabia needs to tackle under the Dutch disease. The labor market becomes dual structure: the labor market for Saudi workers and the labor market for foreign workers. Under this dual labor market, it is not easy to achieve the goal of Saudization.

The Saudi government has attempted to tackle the issues of the dual labor market —a tough challenge originating in structural and historical path-dependence— with introduction of the quota system (Saudization) and subsidy policy (the HRDF). Under these government policies, Saudi companies, which are required to meet employment quotas for Saudi workers, have no choice but to employ a certain number of Saudi workers even if they are inferior to foreign workers in terms of experience or productivity. Given such an extraordinary labor market for Saudi workers, the SJAHI graduates are rated higher than other Saudi workers for their experience and productivity, for which the SJAHI should be given some credit. However, their high reputation ironically makes them good targets for headhunting as mentioned below, lowering retention rates at their initial workplaces.

Employment opportunities

While the SJAHI graduates must pay a penalty higher than their annual incomes if they leave their initial workplaces within three years of graduation, some companies are willing to fully pay such penalty on the graduates' behalf to headhunt them, partly because Saudization imposes employment quotas for Saudi workers in all domestic industries. This is another piece of evidence that the SJAHI graduates have a high reputation.

In addition to jobs at other companies, some SJAHI graduates switch to government jobs. Government jobs offer better wages and working conditions because Saudi university graduates used to be obliged to work for the government as already mentioned. The SJAHI graduates who seek government jobs are usually offered work maintaining cars in the government. The SJAHI graduates have many employment opportunities, whether they work for private companies or government offices. This fact underscores how effective the training provided by the SJAHI is.

Although not many SJAHI graduates seem to continue to work at JADIK member companies, there is no doubt that this project has promoted employment of Saudi because they still get employment at other private companies or organizations. This project should be highly rated for this achievement because it aimed to contribute to Saudization.

Saudization's new direction

The previous Saudization policy consisted of the quota system and subsidy policy. In July 2017, however, the Saudi government began to impose dependent fees on foreign workers according to the number of family members living together. This fee effectively functions as a tax from the point of view of economics. This move, which can be seen as an approach based on market incentives, has already prompted many foreign workers to leave Saudi Arabia. This movement has suddenly boosted demand for Saudi workers, which has also further increased demand for the SJAHI graduates. It is also confirmed that Saudi companies have started to make efforts to lower the SJAHI graduate turnover by, for example, preparing them long-term career paths. The further advance of Saudization is likely to increase the institute's importance, which should highlight the project's impacts more than ever.

As described above, the SJAHI has achieved some success in Saudi Arabia's dual labor market, although not many graduates continue to work at the JADIK member companies. Nevertheless,

even if such graduates leave their initial employers, they still get jobs at private companies and others. Further, due to policy change of Saudization, there is a possibility that further demand for SJAHI graduates will increase and the retention rate will also increase. Therefore, the SJAHI can be considered to have greatly contributed to Saudization.