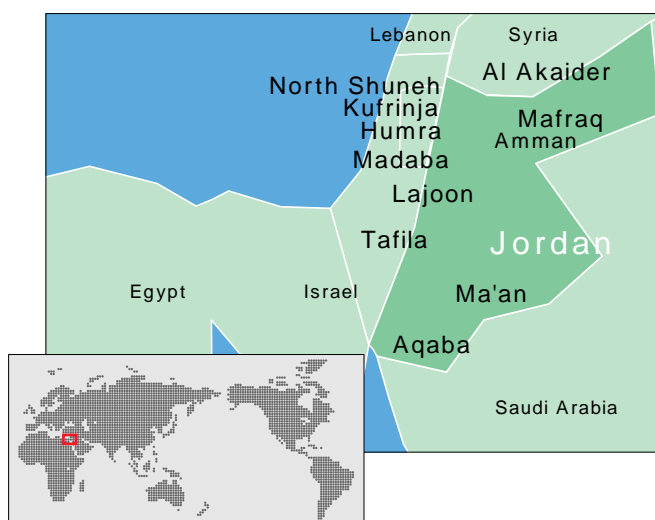


# Project for Improvement of Solid Waste Management in Major Local Areas

## Project Sites

North Shuneh, Kufrinja, Humra, Madaba, Lajoon, Tafila, Al Akaider, Mafraq, Ma'an, Aqaba



## 1. Background of Project

In Jordan, due to the lack of and superannuation of garbage collection machinery, there were cities and villages in which garbage was not collected and unsanitary conditions arose. Even at the final disposal sites, the garbage was simply dumped and not buried in a sanitary manner, causing problems with bad smells and natural combustion to occur.

Based on these conditions, the Government of Jordan requested grant aid from Japan to provide machinery and materials is needed to expand garbage collection activities in local cities and villages and improve the living environment of local residents.

## 2. Project Overview

### (1) Period of Cooperation

FY1995

### (2) Type of Cooperation

Grant aid

### (3) Partner Country's Implementing Organization

Ministry of Municipal, Rural Affairs and the Environment (later becomes the independent organization General Corporation for Environment Protection), and Cooperative Services Councils (CSC)

### (4) Narrative Summary

#### 1) Overall Goal

To enable residents of the project areas to lead hygienic and healthy lives.

#### 2) Project Purpose

To improve waste management in ten areas where waste management measures are most necessary.

#### 3) Outputs

- To provide garbage collection machinery (12 compactors, 8 dump trucks and 500 containers).
- To provide machinery to be used at final disposal sites (9 bulldozers, 4 wheel loaders, 3 dozer shovels, 4 excavators and 7 dump trucks).
- To provide maintenance equipment (3 vehicles for the transport of spare parts and various tools).

## 4) Inputs

### Japanese Side

Grant	1.155 billion yen (E/N amount)
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### Jordanian Side

Provision of disposal sites	
Garbage collection and disposal workers	260
Local cost	

## 3. Members of Evaluation Team

JICA Jordan Office

(Commissioned to the Elite Environmental Engineering Est.)

## 4. Period of Evaluation

August 1998

## 5. Results of Evaluation

### (1) Efficiency

As 100% of the machinery provided through the project has been utilized, the content and scale of the machinery, and timing of the provision are judged to be appropriate. Because the Jordanian side built the disposal facility without any delays, this project was implemented smoothly.

### (2) Effectiveness

In the ten areas in which machinery was provided, garbage disposal improved substantially: garbage collection, transport, and disposal are being conducted very efficiently, and the number of garbage collection areas and the amount of garbage collected has increased.

### (3) Impact

As a result of the increase in garbage collection areas and the amount of garbage collected, the environment and sanitation of the project areas are improved and the city is beautified. Even at the disposal sites where garbage is buried, there are improvements in sanitary conditions and a reduction of bad smells. Through the improvements in waste management, the residential living environment has become much healthier.

The expansion of the garbage collection areas resulted in an increase in revenue from waste management fees for the CSC, which is the primary actor in waste management. Management conditions at the CSC have improved, and it has seen an expansion in its organization and an increase in employment.

#### **(4) Relevance**

Due to the lack of and superannuation of waste management machinery, there were areas where garbage was not collected and unsanitary conditions became an issue. Therefore, the need for this project was high. Because the entire project, from the selection and planning of machinery to the actual project implementation, was completed in a short period of time to respond to this urgency, it is relevant.

#### **(5) Sustainability**

Because management expenses of the CSC are covered by grants and subsidies from the Ministry of Municipal, Rural Affairs and Environmental, contributions from cities and villages, usage fees from private corporations, and collection fees, there do not appear to be any particular problems at this time. Spare parts can also be obtained on location.

Although, there are no major problems in undertaking of garbage collection at the moment, in the long run, as machinery gets older, there will be a need to increase the amount of spare parts. It would be desirable that the Jordanian side re-examine the system for collecting garbage disposal fees in order to secure maintenance costs.

## **6. Lessons Learned and Recommendations**

### **(1) Lessons Learned**

Through the participation of the actual users of the machinery (in this case, the CSC) from the planning stage, a project can be implemented even more effectively.

## Saudi Arabia

# Cooperation for Saudi Arabian Standards Organization

## Project Sites

### Riyadh



## 1. Background of Project

The Saudi Arabian Standards Organization (SASO) is Saudi Arabia's sole institution for standardization. The Organization is responsible for preparing, approving, measuring and revising national standards. Since 1980, Japan has dispatched over 140 individual experts to the SASO Laboratories, and technology transfer was implemented according to Japanese standardization regulations.

## 2. Project Overview

### (1) Period of Cooperation

1980-2001

### (2) Type of Cooperation

Individual experts

### (3) Partner Country's Implementing Organization

Saudi Arabian Standards Organization (SASO)

### (4) Narrative Summary

#### 1) Overall Goal

To establish national standards for products in Saudi Arabia.

#### 2) Project Purpose

To improve technical capabilities involving SASO standardization.

#### 3) Outputs

- To develop facilities and machinery at the SASO Laboratories.
- To improve the technical capabilities of the SASO Laboratories' staffs.
- To provide the SASO Laboratories with the ability to create and manage national standards.

#### 4) Inputs

##### Japanese Side

Experts (combination of long-term and short-term experts) over 140

Trainees received

Equipment

##### Saudi Arabian Side

Counterparts

Laboratory facility

Local cost

## 3. Members of Evaluation Team

JICA Saudi Arabia Office

(Commissioned to the Economic Bureau)

## 4. Period of Evaluation

November 1998

## 5. Results of Evaluation

### (1) Efficiency

An integrated cooperation approach, which focused primarily on the dispatch of experts, included equipment supply and the acceptance of counterparts for training in Japan, proved to be an effective method. Generally the technology transfer has been carried out smoothly. However, the frequent changes in the counterparts and the fact that cumbersome office procedures at the SASO affected the flexibility and speed of project implementation, and caused delay in the smooth progression of technology transfer.

Additionally, inadequate communication between counterparts and the Japanese experts, and differences between general workers and middle managers and differences between various departments in the comprehension of project content and goals, were the main obstacles encountered the effective transfer of technology to the SASO as an organization.

### (2) Effectiveness

Due to the long-term technical cooperation, the ability of the counterparts to compose, manage, measure and examine the standards has improved greatly and the specialization of the Laboratories has increased as well. The counterparts not only gained technical expertise, but also learned practical skills, such as drafting plans and managing schedules.

However, from a questionnaire survey taken as part of this evaluation, it became clear that the managers' level of

comprehension of the cooperation objective and its socioeconomic effects were somewhat confined to the manager level, and the awareness of general workers was even lower.

### (3) Impact

It is predicted that consumer's faith in the safety and quality of products in Saudi Arabia has been improving as a result of this cooperation. However, additional investigations into specific socioeconomic effects will be necessary.

### (4) Relevance

According to a questionnaire survey conducted as part of this evaluation, many of the counterparts responded that this project was very valuable, indicating its high relevance.

Also, suggestions for future fields of cooperation were received, including training on ideas for testing methods rather than testing technology, as well as the cultivation of instructors within the SASO.

### (5) Sustainability

The majority of the counterparts whose opinions were received through this evaluation study responded that the sustainability of the results of the technology transfer was limited. The fact that increases in technical expertise through daily technical training from the experts and participation in training in Japan were not directly connected to promotions, and raises was one reason that incentives for further implementation of activities failed.

## 6. Lessons Learned and Recommendations

### (1) Lessons Learned

It is important to facilitate understanding of the technical cooperation in the implementing organization as a whole, not only in the targeted departments, but in other departments as well. In particular, it is necessary to assure mutual understanding between relevant parties concerning project goals and advantages to the beneficiaries.

### (2) Recommendations

In the future, it will become necessary for the SASO to make a transition from analog machinery to digital machinery. From Japan's perspective, it is desirable that Japan can support the further improvement of SASO's technology through the dispatch of short-term experts with high expertise while collaborating with a third country training program that is underway at the SASO, called Safety Requirements for Electric Appliances.



An expert instructing a counterpart in aspects of a testing device



Training a counterpart in operation methods of a testing instrument

## Turkey

# Istanbul-Tuzla Vocational and Technical High School Project

## Project Sites

### Tuzla



## 1. Background of Project

The Government of Turkey, in its fifth Five-Year National Development Plan (1985-1989), set as its socioeconomic development objective taking a balanced approach to changes in Turkish social and industrial structures that occurred as a result of rapid industrial development. They were pouring energy into a plan for the cultivation of human resources in order to achieve this objective. In particular, because there was a shortage of engineers in the electric, electronic, and computer fields, there was a pressing need to enhance vocational and technical education to cultivate these human resources.

For that reason, the Government of Turkey requested project-type technical cooperation from Japan with the goal of developing and upgrading of the Istanbul-Tuzla Vocational and Technical High School.

## 2. Project Overview

### (1) Period of Cooperation

- 1 October 1987-30 September 1992
- 1 April 1996-31 March 1997 (after-care cooperation)

### (2) Type of Cooperation

Project-type technical cooperation

### (3) Partner Country's Implementing Organization

Ministry of Education, Istanbul-Tuzla Vocational and Technical High School

### (4) Narrative Summary

#### 1) Overall Goal

To cultivate the necessary human resources for socioeconomic development in Turkey.

#### 2) Project Purpose

To conduct advanced technical training in the three fields of electrics, electronics, and computers at the Istanbul-Tuzla Vocational and Technical High School.

#### 3) Outputs

- To establish vocational Lycee in electrics and electronics.
- To establish technical Lycee in electrics, electronics, and computer science.

## 4) Inputs

### Japanese Side

Long-term experts	12
Short-term experts	18
Trainees received	23
Equipment	approx. 630 million yen

### Turkish Side

Counterparts	
Local cost borne	approx. 150 million yen

## 3. Members of Evaluation Team

JICA Turkey Office  
(Commissioned to REFORM)

## 4. Period of Evaluation

9 September 1998-23 October 1998

## 5. Results of Evaluation

### (1) Efficiency

The activities of this project were planned thoroughly, and the various inputs of both the Japanese side and the Turkish side were implemented appropriately according to the original plan.

Joint Committee made up of relevant parties from both sides functioned satisfactorily, supported by the strong desire and diligence of the parties concerned, which contributed to the smooth progression of this project.

Also, after-care cooperation was implemented for one year starting in April of 1996. New equipment was supplied and two short-term experts were dispatched for its operation and training. This cooperation was effective in enhancing the educational activities at the Istanbul-Tuzla Vocational and Technical High School.

### (2) Effectiveness

Through this project's technology transfer, the Turkish counterparts' technical skill improved drastically. During the implementation of the project, the counterparts cooperated with

the experts to prepare 61 textbook manuscripts, and after the project was completed, 27 books were independently prepared and published. The counterparts also prepared many other educational materials, including 10 videos, 1,135 OHP sheets, 227 slides, and 80 prototype machines and test modules.

Training has been conducted at the Istanbul-Tuzla Vocational and Technical High School using the education curriculum and materials prepared by this project. As a result, the quality of education at the school has improved to the point where the school has become one of the leading technical schools in Turkey .

### **(3) Impact**

More than half of the educational manuscripts and books prepared by the counterparts were later authorized by the Ministry of Education. The curriculum was also authorized by the Ministry, and is being used by other vocational high schools. Also, the capabilities of the instructors improved directly and indirectly through this project; 56 out of the 68 instructors were honored by the Ministry of Education and 17 received special bonuses.

As part of the Ministry of Education's program, the Istanbul-Tuzla Vocational and Technical High School holds training sessions during the summer holiday for vocational instructors from all over the country. As this training utilizes the educational materials and curriculum prepared by this project, the results of this project are contributing to an improvement in vocational and technical education throughout Turkey. The Istanbul-Tuzla Vocational and Technical High School also works to spread vocational technology by implementing training aimed at human resources in the private sector.

### **(4) Relevance**

As this project accorded with the Turkish Government's fifth Five-Year National Development Plan, it met Turkey's needs. At present, there are 595 technical schools in Turkey, and because demand for improvements in vocational and technical education are great, this project is highly relevant.

### **(5) Sustainability**

Although the budget provided to the Istanbul-Tuzla Vocational and Technical High School by the Turkish Government is not sufficient, the school is continuing its activities by conducting self-help efforts such as renting out its facilities and fundraising activities.

Although some of the training equipment is outdated and broken, by and large, the equipment is being maintained well.

The placement rate for counterparts is high, and the head of each department has maintained contact with the former Japanese experts and is working to assimilate the newest technologies. However, it will be necessary to secure and recruit replacements for instructors who will retire in two or three years.

## **6. Lessons Learned and Recommendations**

### **(1) Recommendations**

The Istanbul-Tuzla Vocational and Technical High School receives a high evaluation for its work in spreading throughout the nation the latest technologies absorbed from Japan. However, the school's budget and staff members are not sufficient to keep up with the latest technologies. It is desirable that Japan supports the sustainability of the school seizing every opportunity for suitable cooperation.