

## Ex-Ante Evaluation (for a Japanese ODA Loan)

### 1. Name of the Project

Country : The Republic of Turkey

Project : Ankara Water Supply Project

Loan Agreement : December 28, 2009.

Loan Amount : 26,826 million yen.

Borrower : The Republic of Turkey

### 2. Background and Necessity of the Project

- (1) Results of Development (Current State) and Issues of the Water Supply Sector in Turkey  
Ankara is the capital of Turkey and has a population of about 3.69 million (2005). The population of the city had been rapidly growing at a rate greater than that for the country as a whole between 1990 and 2005. Along with this population growth, a considerable increase in water consumption is expected. However, the annual average precipitation for the city is less than one third of that for Tokyo, and the quantity of available groundwater is limited. Water stoppages have frequently occurred in summer, particularly since the summer of 2007. The development of surface water sources is consequently an urgent issue.
- (2) Development Policies for the Water Supply Sector in Turkey and the Priority of the Project  
The necessity of improvements in the city infrastructure, including drinking water, is emphasized in the 9th Development Plan (2007-2013) of Turkey. This project is included in the Investment Program of Turkey, which was drawn up based on this development plan.
- (3) Japan and JICA's Policy and Operations in the Water Supply Sector  
Japan has been financing the Istanbul Water Supply Project in Turkey through an ODA loan. JICA has been supporting improvements in the urban environment in accordance with the priority sector for cooperation specified by the Japanese government. This project, aimed at water resources development to address chronic water shortages in Ankara, is consistent with the priority sector.
- (4) Other Donors' Activity  
The World Bank has financed seven projects in the water supply sector, in Istanbul,

Ankara, Izmir, and other cities. In addition, the European Investment Bank (EIB), the Islamic Development Bank (IsDB), the Kuwait Fund for Arab Economic Development (KFAED), Germany and France have financed in the water supply sector.

(5) Necessity of the Project

This project responds to the urgent issue of the increasing demand for water in Ankara, the capital, and consistent with the priority sector for cooperation stated above. Support for this project is consequently highly necessary and appropriate.

3. Project Description
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(1) Project Objectives

This project is aimed at responding to the rapidly increasing water demand in Ankara, by constructing water intake facilities on the Gerede River at a point about 100 km northwest from Ankara and conveying the river water to the existing Camlidere reservoir, thereby contributing to improvements in the living environment for the residents as well as economic development of the city.

(2) Project Site/Target Area

Gerede County, Province of Bolu, the Republic of Turkey

(3) Project Components

- a. Construction of water intake facilities
- b. Construction of water conveyance facilities

(4) Estimated Project Cost (Loan Amount)

36,000 million yen (Loan amount: 26,826 million yen)

(5) Schedule

The planned implementation schedule of the project is from December 2009 to November 2014 (60 months). The use of the facilities will start in November 2013, which is regarded as the completion date of the project.

(6) Project Implementation Structure

- 1) Borrower: The Republic of Turkey
- 2) Executing Agency: General Directorate of State Hydraulic Works (DSI)
- 3) Operation and Maintenance System: DSI is responsible for the operation and

maintenance of the water intake facilities, and the Water and Sewerage Administration General Directorate (ASKI), Ankara Metropolitan Municipality is responsible for the operation and maintenance of the water conveyance facilities.

(7) Environmental and Social Consideration/Poverty Reduction/Social Development

1) Environmental and Social Consideration

a. Category: B

b. Reason for Categorization: There are no corresponding sectors, characteristics, or districts which are easily affected, as listed in the “Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations” (established April 2002), within this project, and its potential adverse impacts on the environment are not likely to be significant. Therefore, this project corresponds to Classification Category B.

c. Environmental Permit: The domestic law of Turkey does not require the preparation of an Environmental Impact Assessment (EIA) as related to this project.

d. Anti-Pollution Measures: Major negative impacts are not expected during the construction in relation to air pollution and noise.

e. Natural Environment: The target area of the project is not in or on the periphery of national parks or other places that are vulnerable to environmental impacts. It is expected that the negative impacts of the project on the natural environment will be limited to the minimum.

f. Social Environment: This project may require 195 ha of land acquisition and the relocation of 57 residents at the maximum. Land acquisition and relocation of residents will be carried out in accordance with the domestic laws of Turkey.

g. Other / Monitoring: DSI carries out the monitoring of the water quality at the water intake facilities and surrounding areas.

2) Promotion of Poverty Reduction: None.

3) Promotion of Social Development (e.g. Gender Perspective, Measure for Infectious Diseases Including HIV/AIDS, Participatory Development, Considerations for Persons with Disabilities, etc.) : None.

(8) Collaboration with Other Donors: None.

(9) Other Important Issues: None.

#### 4. Targeted Outcomes

##### (1) Performance Indicators (Operation and Effect Indicator)

Indicator	Baseline (Actual Value in 2005)	Target (2015) [Expected value 2 years after project completion]
Population Served (×1000)	3,690	4,487
Amount of Water Supply (hm <sup>3</sup> /year)		
Total Supply	341	432*
Supply from Gerede Source	0	6
Percentage of population served (%)	98	100
Water Supply per capita (l /day)	182	195

\* The total supply includes supply from water sources other than the Gerede source. Water supply from the Gerede source will gradually increase after the completion of the project, and full supply will be expected in 2033. The water supply in 2015, after two years from completion, is consequently limited.

##### (2) Internal Rate of Return

Based on the conditions indicated below, the financial internal rate of return (FIRR) of this project is estimated to be 3.59%.

[FIRR]

Cost : Construction cost, Operation and maintenance cost

Benefit : Income from the sale of water

Project Life : 50 years

#### 5. External Factors and Risk Control

No particular factors or risks.

#### 6. Lessons Learned from Past Projects

The delay of the construction period has been pointed out as a problem in past similar projects. DSI, which is the executing agency of this project, has considerable experience, including the Istanbul Water Supply Project. JICA, however, will conduct close monitoring of the project.

## 7. Plan for Future Evaluation

### (1) Indicators to be Used

- a. Population served ( $\times 1,000$ )
- b. Amount of water supply ( $\text{hm}^3/\text{year}$ )
- c. Percentage of population served (%)
- d. Water supply per capita ( $\text{l}/\text{day}$ )
- e. FIRR (%)

### (2) Timing

Two years after project completion