

Ex-ante Evaluation

1. Name of the Project

Country: The Kingdom of Morocco

Project: Sewage System Development Project (II)

(Loan Agreement: March 30, 2007; Loan Amount: 5,054 million yen; Borrower: Office National de l'Eau Potable [ONEP])

2. Necessity and Relevance of JBIC's Assistance

In Morocco, the development of sewage systems is one area that is still strikingly delayed (with 2.2% of the population served by sewage systems in regional area as of 2001), and from the standpoint of a hygienic environment and recycling of scarce resources, this is an important issue which should be resolved immediately. Because the amount of sewage has been sharply rising nationwide due to rapid industrialization and tourism particularly in recent years, serious problems are presented by the lack of treatment capacity and aging of sewage treatment facilities as well as inadequate operation and maintenance systems. Moreover, because there are occasional cases of residents using raw sewage water directly for irrigation and other agriculture, there is also concern over an outbreak of infectious disease.

In large cities such as Casablanca and Rabat, a public authority (Régie) is in charge of installation of sewage systems, and operation and maintenance is handled by private consignees. Meanwhile in small and medium cities in regional areas, the local governments (communes) formerly were in charge of installation of sewage systems. However, because installation was been delayed due to local governments' fiscal deterioration and lack of capacity, currently the Office National de l'Eau Potable (ONEP) is filling a leading role in the installation of sewage systems in regional areas and, together with swiftly promoting installation, it has taken on the job of operation and maintenance.

In its Economic and Social Development Plan (2000-2004), the Government of Morocco places emphasis on "prevention of and measures for environmental pollution," and it currently continues to maintain this policy. Moreover, together with composing the Nationwide Master Plan for Sewage Networks in 1997 to urgently press forward the installation of sewage systems from the standpoint of effective management of water resources and improvement of the people's living environment and public hygiene, in 2000 the law was revised so that ONEP, which supplies water service, became able to independently promote sewer projects in regional areas. Based on this legal revision, ONEP published the Medium-term Investment Plan for Developing Sewage Systems (2003-2017; planned total investment 15 billion DH, approx. 200 billion yen). ONEP divided the work in the target cities (278 cities total) in the above-mentioned plan into three phases and is installing sewage systems in turn, starting with those with the high level of maturity and urgent needs. This project will focus on the small and medium cities around Marrakech which are sites of international tourism and where there is concern over pollution of groundwater due to the large-scale urban development and the growing population.

In JBIC's current Medium-Term Strategy for Overseas Economic Cooperation Operations (FY2005-2007), "a foundation for sustained growth" is mentioned as a priority area, and there is emphasis on assistance for promotion of economic growth through building of economic and social infrastructure, including sewer-related facilities. Thus, JBIC's assistance for this project is highly

necessary and relevant. Furthermore, JBIC approved the “Sewage System Development Project” in 2005 and is assisting the installation of sewage systems in three small and medium cities northwest of Rabat.

3. Project Objectives

The objective of this project is to increase the areas served by sewage systems by installing sewage systems in four small and medium cities in Morocco (El Kelaa des Sraghna, Ben Guerir, Ait Aourir and Amizmiz), thereby contributing to the improvement of natural environment, hygiene condition, and living environment in that region.

4. Project Description

(1) Target Area

Cities around Marrakech (El Kelaa des Sraghna, Ben Guerir, Ait Aourir and Amizmiz)

(2) Project Outline

Construction of sewage treatment facilities and pump stations, rehabilitation and expansion of the sewage networks, etc., and development of drainage facilities.

(3) Total Project Cost/Loan Amount

6,739 million yen (Yen Loan Amount: 5,054 million yen)

(4) Schedule

April 2007 – December 2012 (69 months)

(5) Implementation Structure

(a) Borrower: Office National de l’Eau Potable (ONEP)

(b) Executing Agency: Same as (a)

(c) Operation and Maintenance System: Same as (a) (ONEP will conduct operation and maintenance on consignment from the communes)

(6) Environmental and Social Consideration

(a) Environmental Effects/Land Acquisition and Resident Relocation

(i) Category: B

(ii) Reason for Categorization

This project is not likely to have significant adverse impact on the environment due to the fact that the project sector and project characteristics are not likely to exert impact and the project is not located in a sensitive area under the “Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Consideration” (established in April 2002). Thus this project is classified as Category B.

(iii) Environmental Permit

The Ministry of Land Management, Water, and Environment approved the Environmental Impact Assessment (EIA) report for the project in March 2007.

(iv) Anti-Pollution Measures

Water leaving sewage facilities will be treated to meet the the domestic water discharge

standards before being discharged into rivers, where it is not foreseen to have any adverse impact.

(v) Natural Environment

The project site is not located in or around sensitive areas, such as national parks, and so adverse impacts on the natural environment are assumed to be minimal.

(vi) Social Environment

This project requires land acquisition of approx. 103 ha, and acquisition is proceeding in accordance with the domestic procedures of Morocco. The project requires no resident relocation.

(vii) Other/Monitoring

ONEP will monitor the water quality of the water discharged in this project.

(b) Promotion of Poverty Reduction

None

(c) Promotion of Social Development (e.g. Gender Perspective)

None

(7) Other Important Issues

None

5. Outcome Targets

(1) Evaluation Indicators (Operation and Effect Indicator)

Indicator	Baseline (2004)		Target (2013, 1 year after completion)	
Population treated (thousand persons)	El Kelaa des Sraghna:	0	El Kelaa des Sraghna:	86
	Ben Guerir:	0	Ben Guerir:	65
	Ait Aourir:	0	Ait Aourir:	24
	Amizmiz:	0	Amizmiz:	11
Rate of facility utilization (%)	El Kelaa des Sraghna:	0	El Kelaa des Sraghna:	84
	Ben Guerir:	0	Ben Guerir:	74
	Ait Aourir:	0	Ait Aourir:	86
	Amizmiz:	0	Amizmiz:	88
Amount of wastewater treated (m ³ /day)	El Kelaa des Sraghna:	0	El Kelaa des Sraghna:	7,600
	Ben Guerir:	0	Ben Guerir:	5,400
	Ait Aourir:	0	Ait Aourir:	1,500
	Amizmiz:	0	Amizmiz:	750
BOD Concentration of influent of STP (mg/l)	El Kelaa des Sraghna:	N.A.	El Kelaa des Sraghna:	430
	Ben Guerir:	N.A.	Ben Guerir:	440
	Ait Aourir:	N.A.	Ait Aourir:	630
	Amizmiz:	N.A.	Amizmiz:	600
BOD Concentration of discharge of STP* (mg/l)	El Kelaa des Sraghna:	N.A.	El Kelaa des Sraghna:	44
	Ben Guerir:	N.A.	Ben Guerir:	69
	Ait Aourir:	N.A.	Ait Aourir:	98
	Amizmiz:	N.A.	Amizmiz:	97
Population served ratio (%)	El Kelaa des Sraghna:	87	El Kelaa des Sraghna:	92
	Ben Guerir:	78	Ben Guerir:	80
	Ait Aourir:	85	Ait Aourir:	91

	Amizmiz:	76	Amizmiz:	92
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*The emission standard in Moroccan cities is BOD 120 mg/l

(2) Internal Rate of Return

Economic Internal Rate of Return (EIRR): 13.0%

- (a) Cost: Project costs (excluding tax), operation and maintenance expenses
- (b) Benefit: Amount of willingness to pay
- (c) Project Life: 40 years

6. External Risk Factors

Henceforth ONEP plans to undertake small-scale sewer projects in regional areas where the profitability is relatively low, and as with the existing ODA loan project known as the “Sewage System Development Project”, it is necessary to continue to give consideration to the financial soundness of ONEP. Based on a study (2005) by a French consultant, ONEP implemented a sewer fee hike in March 2006, then significantly revised sewer fees in January 2007 and prescribed uniform sewer fees for all cities. ONEP plans to conduct fee revisions henceforth, and it is necessary to carefully watch that trend.

7. Lessons Learned from Findings of Similar Projects Undertaken in the Past

In similar sewage system development projects, it has been learned that the effectiveness of cooperation at the local government level should be recognized in order to ensure that the project’s effects are sustained after project completion. In this project, for the 15 years following the signing of the consignment contract between ONEP and the communes, ONEP is to conduct operation and maintenance of sewer-related facilities. Because the consignment contract will normally be extended at the end of its term, operation and maintenance of the facilities following project completion will essentially be conducted by ONEP.

ONEP is currently pursuing the establishment of departments to be in charge of the sewer project at the regional and prefectural/provincial office level, and the operation and maintenance system for the four target cities is being developed by assigning staff who have received training on the subject of sewage systems. In addition, for operation and maintenance of the existing sewer pipes in the four target cities, it is planned to transfer commune staff who have conducted operation and maintenance heretofore into ONEP. For this, just as in the “Sewage System Development Project”, in this project the plan is to work with ONEP so that the transfer of commune staff into ONEP is smooth, together with receiving progress reports from ONEP so as to keep informed concerning the training involving the operation and maintenance of sewer-related facilities which ONEP implements on its own.

8. Plans for Future Evaluation

(1) Indicators for Future Evaluation

- (a) Population treated (thousand persons)
- (b) Rate of facility utilization (%)
- (c) Amount of wastewater treated (m³/day)
- (d) BOD concentration of water treated (mg/l)
- (e) Population served ratio (%)
- (f) Economic internal rate of return (EIRR) (%)

(2) Timing of Next Evaluation
After project completion