

## Ex-ante Evaluation

### **1. Name of the Project**

Country: The Republic of Tunisia

Project: Integrated Reforestation Project (II)

(Loan Agreement: March 31, 2008; Loan Amount: 3,128 million yen; Borrower: The Government of the Republic of Tunisia )

### **2. Necessity and Relevance of JBIC's Assistance**

Located in an arid and semi-arid zone, Tunisia had 1.25 million ha of forest area at the beginning of the 20<sup>th</sup> century, but by the 1950s, this figure had been reduced to 400,000 ha due to natural aridification, excess logging and other factors. Since then, the government of Tunisia has adopted forest expansion measures, with the result that by 2006, the forest ratio had returned to the level observed at the beginning of the 20<sup>th</sup> century, and now forests account for about 12.5% (about 1.25 million ha) of the land area of Tunisia, excluding the part that is in the Sahara desert. But in its National Forest and Grazing Land Development Strategy, the government set a goal of raising to 16% the ratio of forestland to total land area by 2011. Further reforestation effort will be needed to reach this goal. However, because there were many areas where post reforestation operations were executed inadequately, there was hardly any evidence of improvement in the quality of forests. At present, 40.5% of forestland is comprised of low-quality forests with low shrubs. These forests have low water and soil conservation capacity, and are in many cases factors that trigger soil runoff from mountainous areas and flood damage. For these reasons, they pose a serious challenge for Tunisia.

In recent years, aridification is advancing in Tunisia, which may be considered an effect of climate change, resulting in a higher incidence of fire-related disasters. Consequently, in addition to the diminishing area of forestland, there are now concerns that forest areas may be losing their biodiversity as well. In order to meet the fire disaster countermeasure standards (e.g., limiting the area lost due to a fire to 1 ha) adopted by all countries along the Mediterranean coast, enhancement of infrastructure for protection against fire, including firebreaks, forest roads, and water tanks, is urgently needed.

Reducing the burden that inhabitants of forest areas impose on forests is indispensable for forest conservation. Since many residents of Tunisia's forest areas (mountainous areas stretching from northwest to central Tunisia) earn their living by relying on forest resources including pasturage, for successful forest conservation it is important not only to prohibit grazing livestock in newly-forested areas, but also to incorporate a resident support component that is designed to improve their livelihood by encouraging them to engage in economic activities that will provide them with a source of income other than relying on forest resources as they do now.

Having adopted its National Forest and Grazing Land Development Strategy (2002–2011), the government is now taking steps to promote forest development in an integrated manner. Four basic policies are cited in this national strategy: (1) expansion of forests and other areas covered with vegetation, (2) sustainable forest management, (3) protection of flora and fauna and (4) improvement of systems related to the forestry sector. Specifically, the strategy calls for the expansion of the area of new forests to 190,000 ha; thereby raising the forest ratio, including pasturage, to 16% by 2011. This policy is continued in the 11<sup>th</sup> Five-Year Economic and Social Development Plan (2007–2011),

which sets as its goals (1) expansion of the area of land covered with vegetation by 150,000 ha, (2) fire disaster countermeasures, and (3) improvement of the living conditions of residents of forest areas.

In the Medium-Term Strategy for Overseas Economic Cooperation Operations (FY2005–2007), JBIC has positioned “global issues and peace-building” as a priority area. Additionally, in its assistance for Tunisia, JBIC also calls for “development and management of water resources” and “stronger environmental protection.” JBIC’s support for this project is therefore highly necessary and relevant. Moreover, in 2000, JBIC signed a loan agreement for the Integrated Reforestation Project, and in four governorates (Beja, Jendouba, Kasserine and Kef), it supported comprehensive forest development that includes a component for improving the living conditions of forest area residents. In this project, on the strength of the success of the previous project, JBIC will adopt the same method and strive to expand the area benefited by forest development.

### **3. Project Objectives**

This project aims to promote forest restoration and sustainable forest management in five governorates of Tunisia (Beja, Jendouba, Kef, Siliana and Zaghouan) by undertaking comprehensive forest conservation activities such as reforestation, fire disaster countermeasures, and improvements in the living conditions of local residents; thereby contributing to the improvement of the natural environment of the said areas.

### **4. Project Description**

#### (1) Target Area

Governorates of Beja, Jendouba, Kef, Siliana and Zaghouan

#### (2) Project Outline

This project will implement the following comprehensive forest conservation activities in the aforementioned target areas:

- (a) Development of forests and conservation of biodiversity (reforestation, forest care, fire disaster countermeasures, etc.)
- (b) Improvement of living conditions of local residents (employment of educational activists, support for efforts to organize residents, implementation of regional development plans, etc.)
- (c) Enhancement of systems and organizations (survey, research and development, training)
- (d) Consulting services (support for project implementation, etc.)

#### (3) Total Project Cost / Loan Amount

3,696 million yen (Yen Loan Amount: 3,128 million yen)

#### (4) Schedule

April 2008–December 2014 (81 months). Project completion is defined as when the forest conservation activities are completed.

#### (5) Implementation Structure

- (a) Borrower: The Government of the Republic of Tunisia
- (b) Executing Agency: Ministry of Agriculture and Water Resources

(c) Operation and Maintenance System: Same as (b)

(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 Considerations” (established in April 2002). Thus, this project is classified as Category B.

(iii) Environmental Permit

The Environmental Impact Assessment (EIA) report concerning this project is not required under the domestic laws of Tunisia.

(iv) Anti-Pollution Measures

Basically, there are no plans to use agricultural chemicals, fertilizer and the like, so no adverse impact on the environment is foreseen.

(v) Natural Environment

In this project, out of consideration for the ecosystem, reforestation will be carried out using mainly local species. Thus, adverse impact on the natural environment is assumed to be minimal.

(vi) Social Environment

Since this project will be implemented mainly in state-owned land, neither land acquisition nor resident relocation will be required.

(vii) Other/Monitoring

In this project, the executing agency and others will monitor reforestation, civil works for the prevention of arable land from turning into wasteland, etc.

(b) Promotion of Poverty Reduction

In this project, regional development plans, including livelihood improvement activities, will be implemented for local residents. Thus, the project is expected to help residents of forest areas, many of whom are poor.

(c) Promotion of Social Development (gender perspective, measures for infectious diseases including AIDS, participatory development, consideration for persons with disabilities, etc.)

With the support of consultants and educational activists (hired for the main component of this project), the executing agency will strive to meet the wide range of needs of local residents by strengthening and supporting efforts to organize residents and enhance their capacity, as well as by adopting and implementing participatory regional development plans. About 40% of the educational activists are expected to be women, and support will be given to efforts to meet women’s needs including reduction of firewood gathering and water drawing labor.

(7) Other Important Issues

None

## 5. Outcome Targets

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

Indicator	Baseline (2007 actual)	Target (2016, 2 years after completion)
1-1. Afforestation area (ha)	–	14,249
1-2. Survival rate (%)	80	80
2. Forest care implemented area (ha)	–	18,520
3. Number of national parks and wildlife preserves targeted for development	–	4/5
4-1. Number of resident organizations founded / number strengthened (number of beneficiaries)	–	9 (8,452) / 1 (600)
4-2. Number of regional development plans adopted	–	8

### (2) Number of Beneficiaries

9,000

### (3) Internal Rate of Return (Financial and Economic Internal Rate of Return)

Based on the conditions indicated below, this project's economic internal rate of return (FIRR) is 12.4%.

- (a) Cost: Project cost (excluding tax), operation and maintenance expenses
- (b) Benefit: Amount of forest products that increased as a result of reforestation, forest care, water and soil conservation, fire disaster countermeasures, etc.
- (c) Project Life: 75 years

## 6. External Risk Factors

None

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

The lesson learned from projects conducted in forestry sectors in the past is that mountain fire countermeasures are important for raising the survival rate of trees after reforestation, and that educating stockbreeders is especially important in preventing the outbreak of mountain fires due to the deliberate setting of fires in stockbreeding. In the area targeted by this project, the local residents themselves, not stockbreeders, engage in small-scale pasturage. Thus, in this project, in addition to training residents in proper pasturage methods, sustainability of the project will be enhanced by developing infrastructure for coping with fire disasters (forest roads for carrying out firefighting activities, water tanks, etc.).

In projects comprised of many small-scale components covering a widespread area, it is troublesome to monitor and supervise their implementation. Consequently, another lesson learned from past projects is the necessity and importance of adopting measures such as those that include in the scope of projects the support of consulting services in the monitoring and supervision of project implementation. In this project, an adequate operation and maintenance system will be provided by setting up a project management team in the Forestry Service of the Ministry of Agriculture and

Water Resources, as well as by having consulting services and educational activists support the executing agency (central/local).

### **8. Plans for Future Evaluation**

#### (1) Indicators for Future Evaluation

- (a) Afforestation area (ha)
- (b) Survival rate (%)
- (c) Forest care implemented area (ha)
- (d) Number of national parks and wildlife preserves targeted for development
- (e) Number of resident organizations founded / number strengthened (number of beneficiaries)
- (f) Number of regional development plans adopted
- (g) Economic internal rate of return (%)

#### (2) Timing of Next Evaluation

Two years after project completion