

Ex-ante Evaluation

1. Name of the Project

Country: People's Republic of China

Project: Henan Province Afforestation Project

(Loan Agreement: June 23, 2006; Loan Amount: 7,434 million yen; Borrower: The Government of the People's Republic of China)

2. Necessity and Relevance of JBIC's Assistance

Henan Province, where this project is to take place, has a population of 97.17 million and a surface area of 166,000km². The province is located in the central region of China, and is situated in a climate zone that straddles the border between the subtropical and temperate zones of the northern hemisphere. Some 44% of the province's surface area is hilly or mountainous, and it lies in the upper and midstream reaches of four major rivers—namely, the Yellow River, Yangtze River, the Huai River, and the Hai River. In 2004, Henan's forest coverage was 16.2%, placing the province 21st out of 31 provinces in the nation, and below the national average of 18.2%. This shortfall is said to result from excessive deforestation to cope with the increased demand for lumber and to expand cultivated land areas. Soil erosion is occurring from mountain slopes on which the ground surface has been exposed due to excessive deforestation, and on account of the resulting silting of river beds and dammed lakes, the functionality of river banks and dams is reduced. As a result, flood damage in the region is increasing. In the 71 counties that constitute the project's target area (population: 51.76 million people; surface area: 96,000km², equivalent to the population and surface area of South Korea), some 140 million tons of eroded soil are discharged annually. In addition, on account of extensive exposure of the ground surface in plain areas as well, roads and cultivated lands are buried by sandstorms, and because forests no longer serve to sufficiently block winds, cultivated lands suffer damage such as soil erosion under strong wind conditions (In the 71 counties that constitute the project's target area, the annual economic loss stemming from such natural disasters has risen to 26.6 billion yuan—roughly 350 billion yen—annually). In 2003, repeated heavy rains led to extensive flooding, with the result that 35.87 million people in the province suffered damage, 73 people died, and 420,000 buildings collapsed. Economic losses reached 18.2 billion yuan (approx. 250 billion yen).

This project corresponds to the activity of environmental conservation, a priority area stipulated both in the Economic Cooperation Program for China by the Japanese Government, and in the Medium-Term Strategy for Overseas Economic Cooperation Operations by the JBIC. Thus, JBIC's assistance for this project is highly necessary and relevant.

3. Project Objectives

By implementing afforestation in 71 counties of Henan province, this project aims to control strong winds in plain areas and soil erosion from mountainous regions, and thereby help to reduce damage in the region from natural disasters such as sandstorms and floods, and thus improve the area's living environment.

4. Project Description

(1) Target Area

71 counties of Henan Province

(2) Project Outline

To conduct afforestation, provide the associated materials and machinery required, and provide training in the above-described area.

(3) Total Project Cost/Loan Amount

11,444 million yen (Yen Loan Amount: 7,434 million yen)

(4) Schedule

Expected to run August 2006-end of September 2011 (62 months)

(5) Implementation Structure

- (a) Borrower: The Government of the People's Republic of China
- (b) Executing Agency: Henan Provincial People's Government
- (c) Operation and Maintenance System: Same as (b) above.

(6) Environmental and Social Consideration

(a) Environmental Effects/Land Acquisition and Resident Relocation

(i) Category: B

(ii) Reason for Categorization

This project is classified as Category B according to the "Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations" (established April 2002). This categorization is assigned because, when taking the sector, project, and regional characteristics into account, the work is not expected to have a significant harmful impact on the environment.

(iii) Environmental Permit

The drawing up of an Environmental Impact Assessment (EIA) report was not obligatory for this project under the civil laws of China.

(iv) Anti-Pollution Measures

Because measures such as the comprehensive management of potential damage from diseases and insects will be adopted, this project is not expected to pose a significant burden on the environment.

(v) Natural Environment

This project is designed to improve the natural environment by planting native tree species in regions subject to flood damage and soil erosion. As such, the project is expected to have minimal adverse impact on the natural environment.

(vi) Social Environment

Because the participants in this project will be reforesting land to which they already have ownership rights, there is no need to acquire land or relocate residents.

(vii) Other/Monitoring

In this project, the Henan Province Forestry Bureau will monitor the extent to which saplings take root.

(b) Promotion of Poverty Reduction

Some 3.0% of the population (1.34 million) in the project's target area live in poverty. This figure exceeds the national average of 2.8%. The benefits expected by conducting afforestation activities in the region include a reduction in flooding and sandstorm damage as well as improved living environments (25 million people are expected to benefit). Should those living in poverty wish to participate in the project, it is felt that more stable income will be obtained by raising the ratio of income-generating forests and lumber forests relative to that of shelter forests.

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

None.

(7) Other Important Issues

None.

5. Outcome Targets

(1) Evaluation Indicators (Operation and Effect Indicators)

Indicators	Baseline (2004)	Target (2011 after completion of project)
Area planted for shelter forests (ha)*	-	163,610
Area planted for incoming-generating forests (ha)*	-	11,880
Area planted for lumber forests (ha)*	-	18,700
Newly planted areas (ha)**	-	131,840
Percentage of trees taking root (%)**	-	85
Accumulative area of afforestation (m ³ /ha) ***	38	53
Forestation rate (%) ****	18.4	20.1
Forest coverage rate (%) ****	60	70
Soil erosion area (km ²) ****	33,300	30,000
Soil erosion volume (t/km ² per year) ****	0.32	0.26

*The target comprises the target area for afforestation in this project.

** The target comprises those areas newly planted under this project (excluding the areas where the nurturing of mountain-cover forests, forest improvement, and the nurturing of small saplings and young trees take place).

*** The target area comprises the areas where the nurturing of mountain-cover forests, forest improvement, and the nurturing of small saplings and young trees take place.

**** The target comprises the entire project target area (71 counties).

- (2) Economic Internal Rate of Return (EIRR): 24.5%
- (a) Cost: Project costs (excluding taxes), operation and maintenance costs
 - (b) Benefit: Revenue from lumber and fruit/nut/berry sales, reduction in flood damage
 - (c) Project life: 40 years

6. External Risk Factors

A reduction in the rate of planted saplings taking root on account of large-scale drought, and a resultant reduction in project efficacy.

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

Based on supervision of afforestation projects in the past, we have learned that it is desirable to obtain the agreement of the other party's government in question beforehand regarding who will bear the loss of saplings that wash away in heavy rains after planting. For this project, the Henan Provincial People's Government has agreed to provide financial support to those participants recognized as having suffered disaster,

8. Plans for Future Evaluation

- (1) Indicators for Future Evaluation
- (a) Planted area (ha)
 - (b) Percentage of trees taking root (%)
 - (c) Accumulative area of afforestation (m³/ha)
 - (d) Forestation rate (%)
 - (e) Forest coverage percentage (%)
 - (f) Soil erosion area (km²)
 - (g) Soil erosion volume (t/km² per year)
 - (h) EIRR (%)

- (2) Timing of Next Evaluation
After completion of project