

Ex-ante Evaluation

1. Name of the Project

Country: India

Project: Swan River Integrated Watershed Management Project

(Loan Agreement: 03/31/2006; Loan Amount: 3,493 million yen; Borrower: The President of India)

2. Necessity and Relevance of JBIC's Assistance

Efficient usage of limited water resources in order to increase agricultural production is an issue in India because rainfall differs from region to region and from season to season. Meanwhile, in the northern and eastern regions where there is heavy rainfall and snowmelt, serious damage is caused to human life and farm crops due to soil erosion and flooding rivers. Afforestation and flood prevention are highly significant for protection of scarce agricultural land, particularly in the low mountainous area, which extends in-between peripheries from plains to mountains, and where there is not much space for arable land. Moreover, the forest and tree cover in India (2003) is 23.7%, which falls short of the world average of 29.6%. A large number of people including the poor depend on forestland for fodder, fuel, and income, and as the population increases, degradation of forests and decline in the soil and water conservation capacity have become issues.

In order to increase agricultural production while efficiently utilizing limited water resources, the Government of India emphasizes four points in the 10th Five Year Plan (2002-2007): (1) increase in public funding on irrigation facilities and water resource management, (2) rural infrastructure development such as irrigation facilities, (3) development and extension of agricultural technology, and (4) crop diversification. It also places priority on increasing the forest/tree coverage ratio (25% and 33% in the nation by 2007 and 2012, respectively) and recovering the degraded forests. The Common Minimum Programme pledges support for flood-prone area development programme, flood management projects in the interstate rivers and international rivers, and employment-creating forestry projects.

In JBIC's current Medium-Term Strategy for Overseas Economic Cooperation Operations, priority sectors in assistance to India are "Rural Development Benefiting the Poor" and "Environmental Improvement". The assistance provided by this project is consistent with the strategy.

The Swan River watershed in Una district of the State of Himachal Pradesh has the topography of a typical low mountainous area. Because forest degradation is particularly severe on the upper reaches of the river, sand inflow and soil erosion are causing huge damage to agricultural land, and flood damage is frequent. Moreover, this project, composed of afforestation, construction of flood control facilities, soil protection and land reclamation, and agricultural development will stand as a model case of integrated watershed management, which is something that has not been conducted heretofore in India. Therefore, JBIC's assistance is highly necessary and highly relevant.

3. Project Objectives

The objective of this project is to restore degraded forests, protect agricultural land, and increase agricultural and forestry products by carrying out integrated watershed management, including afforestation, construction of flood control facilities, soil protection and land reclamation, agricultural development, and income generating activities, in the Swan River watershed in the Una district of the State of Himachal Pradesh in northern India, thereby improving living standards of

local residents including the poor.

4. Project Description

(1) Target Area

Swan River watershed, Una district, State of Himachal Pradesh

(2) Project Outline

- (a) Afforestation
- (b) Civil works for soil and river management (check dams and embankments, etc.)
- (c) Soil protection and land reclamation (terracing and soil addition, etc.)
- (d) Livelihood improvement activities (agricultural development, small-scale infrastructure installation, income generating activities, etc.)
- (e) Institutional building (purchase of equipments, training, hiring of facilitators, etc.)
- (f) Consulting services

(3) Total Project Cost/Loan Amount

4,153 million yen (Yen Loan Amount: 3,493 million yen)

(4) Schedule

April 2006 – March 2014 (96 months)

(5) Implementation Structure

- (a) Borrower: The President of India
- (b) Executing Agency: Forest Department, Government of Himachal Pradesh. Furthermore, also involved in the implementation will be Irrigation and Public Health Department, Agriculture Department, Horticulture Department, Animal Husbandry Department, and Rural Development Department.
- (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 classified as Category B because it was determined that the project will not have any significant undesirable impact on the environment given the characteristics of the sector, the characteristics of the project, and the characteristics of the region, based on the “Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations” (established April 2002).

(iii) Environmental Permit

The EIA report is not required for the project in India’s relevant rules and regulations.

(iv) Anti-Pollution Measures

The executing agency will provide appropriate guidance when agricultural chemicals and

fertilizers are used, and no significant adverse impact is foreseen.

(v) Natural Environment

The project area is not located in or around any sensitive areas such as nature preserves, etc., and afforestation will be implemented using native species. Therefore, it is likely to have minimal adverse impact on the natural environment.

(vi) Social Environment

The project will be implemented on national forests and on private land chosen through community participation. The project will not involve any land acquisition or involuntary resettlement.

(vii) Other/Monitoring

Monitoring related to the afforestation in the project will be carried out jointly by the executing agency and the Ward Development Committee (WDC).

(b) Promotion of Poverty Reduction

The poverty situation is one criterion that is applied when selecting the project area. The benefits of soil protection and land reclamation and livelihood improvement activities are particularly targeted toward the socially underprivileged (farmers with marginal landholding, the poor, and women).

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

Self-help groups (SHGs) composed mainly of women will be formed and will carry out initiatives in income generating activities, such as processing of non-timber forest products and beekeeping, utilizing microfinance.

(7) Other Important Issues

None

5. Outcome Targets

(1) Evaluation Indicators (Operation and Effect Indicator)

Indicator	Baseline (2004)	Target (2016, 2 years after completion)
Afforestation Area (ha)		9,700 ha
Quantity of Planting		14,900,000
Survival Rate (%) (At the 5th year)		60%
Quantity of Complementary Planting		6,000,000
Number of Established WDC's		300
Number of Established User Groups and Self-Help Groups (SHG's)		900
Rate of Forest Cover (tree crown) (project area)	Degraded Forest (under 10%) or Open Forest (10-40%)	Degraded to Open, Open to Dense Forest (40% or above)

Forestry Products in Monetary Value (project area)		20,000,000
Production Volume of Major Crops (tons/year) (Una district total)	Maize 72,900 Rice 12,000 Wheat 49,600 Barley 2,800 Vegetables 73,100	Maize 94,900 Rice 14,000 Wheat 59,520 Barley 3,220 Vegetables 91,375
Yield of Major Crops per Unit Area (tons/ha) (Una district total)	Maize 2.44 Rice 1.48 Wheat 1.36 Barley 1.16 Vegetables 16.50	Maize 2.94 Rice 1.78 Wheat 1.63 Barley 1.39 Vegetables 20.60
Gross Annual Average Farm and Forest Income (Rs/year/household)	40,000	60,000
Land Area with Reduction in Soil Erosion and Flood Damage (ha)		5,100 *
Length of Tributaries Protected from Erosion (m)		14,100*

*The target will be definitely fixed after the loan agreement is signed and a detailed survey is conducted.

(2) Economic Internal Rate of Return: 14.7%

(a) Cost: Project cost (excluding tax), operation and maintenance expense

(b) Benefit: Increase in agricultural and forest products, income creation through income generating activities, and soil erosion prevention

(c) Project Life: 40 years

6. External Risk Factors

Economic stagnation/deterioration in India and the surrounding area of the project as well as natural disasters

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

In the ex-post evaluations of similar projects in the past, it has been learnt that in participatory afforestation projects, there is a possibility that some villagers will be excluded when village resident associations are formed. In the project, facilitators will be hired from among the village residents, and they will take steps so that specific villagers are not excluded from the planning and implementation of initiatives in each village. The facilitators will also act to ensure fairness because they will be appointed as liaisons between the government and the residents and will notify residents of communications from the government.

8. Plans for Future Evaluation

(1) Indicators for Future Evaluation

(a) Afforestation: Afforestation Area (ha), Quantity of Planting, Survival Rate (%) (At the 5th year), Quantity of Complementary Planting, Number of Established WDC's, Number of

Established User Groups and Self-Help Groups (SHG's), Rate of Forest Cover (tree crown) (project area), Forestry Products in Monetary Value (project area)

(b) Agriculture: Production Volume of Major Crops (tons/year) (Una district total), Yield of Major Crops per Unit Area (tons/ha) (Una district total), Gross Annual Average Farm and Forest Income (Rs/year/household),

(c) Land Area with Reduction in Soil Erosion and Flood Damage (ha), Length of Tributaries Protected from Erosion (m)

(d) Economic Internal Rate of Return (EIRR) (%)

(2) Timing of Next Evaluation

After project completion