

Ex-ante Evaluation

1. Name of the Project

Country: Mongolia

Project: New Ulaanbaatar Airport Construction Project

(Loan Agreement: May 1, 2008; Loan Amount: 28,807 million yen; Borrower: The Government of Mongolia)

2. Necessity and Relevance of JBIC's Assistance

Mongolia has registered strong real GDP growth rates since 1990. This can be attributed to the introduction of a market-oriented economy involving, among other things, privatization of state-owned assets, deregulation of prices and production and introduction of a banking system, as well as to the significant improvement of the international market situation such as in manufacturing and mining industries in recent years. In particular, there has been a sharp rise in foreign travelers visiting the country against the backdrop of growth in the service industry (which accounts for 50% of the GDP growth in 2005) and growing investment for developing abundant underground mineral resources and livestock farming. Amid these developments, international passengers in the country's only international airport in Ulaanbaatar almost doubled from 2003 to 2006. Demand for air traffic, especially international flights, is thus projected to increase further in the years to come.

However, Ulaanbaatar Airport is surrounded by mountains on its southern and eastern sides. This forces planes to land and take off only from the northeastern side of the airport. As a result, landings and takeoffs are often hampered by winds and other climatic conditions. The airport's wind coverage (the event probability of wind direction/speed considered to be safe for landings and takeoffs) is on average only about 86% (and only about 73% during the lowest months), which is significantly lower than the standard 95% wind coverage ICAO¹ requires in its runway plans. Furthermore, since Ulaanbaatar Airport is the only airport in Mongolia with aircraft maintenance facilities, domestic flights in particular tend to land back in Ulaanbaatar Airport even when climatic conditions are problematic. Thus, safety is also a major issue.

For Mongolia, a land-locked country with an area of approximately 1.56 million square kilometers, or about four times the area of Japan, it is imperative that the functional capacity of Ulaanbaatar Airport, its nodal point with foreign countries, be improved if the country is to achieve sustainable economic growth. However, because of geographical constraints mentioned above, there are grave doubts about the reliability and safety of Ulaanbaatar Airport. Under the present site conditions, it will have difficulty meeting the rapidly growing demands for air transport. There is thus an urgent need to construct a new airport of appropriate size in a location where it will be possible to avoid the geographical constraints that have hampered Ulaanbaatar Airport.

The goal of both the Action Plan of the Government of Mongolia for 2004–2008 and the National Development Strategy of Mongolia is to create more jobs and raise the living standard of people by economic growth through promotion of infrastructure development. This project is considered important for both the action plan and the development strategy.

This project falls into the category of “infrastructure development,” which is one of the priority areas

¹ ICAO stands for International Civil Aviation Organization. It was established in April 1947 as a specialized agency of the United Nations to foster the safety and orderly development of civil aviation.

of the Government of Japan's Country Assistance Program for Mongolia (adopted in November 2004), and also that of "foundation for sustained growth," which is one of the priority areas of JBIC's Medium-Term Strategy for Overseas Economic Cooperation Operations (adopted in April 2005). JBIC's support for this project is therefore highly necessary and relevant.

3. Project Objectives

This project aims to improve the safety, reliability and convenience of the capital airport through construction of a new international airport in Ulaanbaatar, thereby contributing to further economic growth in Mongolia.

4. Project Description

(1) Target Area

Sergelen District, in central Tuv Province (located about 50 km south of the urban part of the capital city of Ulaanbaatar)

(2) Project Outline

- (a) Airport construction work: Runways, taxiways, aprons, terminal buildings, airport control tower, airport safety facilities, fire extinguishing and rescue facilities, parking lots, access roads, power generation and water treatment ancillary facilities, vehicles, etc.
- (b) Consulting services: Detailed design, bidding assistance, construction supervision and monitoring, environment management support, etc.

(3) Total Project Cost / Loan Amount

34,244 million yen (Japanese ODA Loan Amount: 28,807 million yen)

(4) Schedule

December 2008–September 2015 (82 months). Project completion is defined as when consulting services are completed.

(5) Implementation Structure

- (a) Borrower: The Government of Mongolia
- (b) Executing Agency: Ministry of Road, Transport, and Tourism
- (c) Operation and Maintenance System: Civil Aviation Authority of Mongolia

(6) Environmental and Social Consideration

(a) Environmental Effects / Land Acquisition and Resident Relocation

(i) Category: A

(ii) Reason for Categorization

This project is categorized as an airport sector project which is likely to have significant adverse impact on the environment 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 A.

(iii) Environmental Permit

The Environmental Impact Assessment (EIA) report concerning this project was approved by the Ministry of Nature and Environment of Mongolia in June 2007.

(iv) Anti-Pollution Measures

In this project, measures to prevent air pollution will be adopted, including placing a limit on the idling of aircraft and operation vehicles, introducing low-emission vehicles, and so on. Wastewater from the airport will be dealt with by installing sewage treatment facilities in a manner that satisfies domestic standards, while waste material will be treated appropriately in accordance with Mongolia's collection and treatment system.

Additionally, on the basis of noise simulation, it is assumed that the noise from aircraft landings and takeoffs will have no significant impact on the inhabited areas surrounding the airport.

(v) Natural Environment

The area targeted by this project is not located in or around sensitive areas, such as national parks, and so adverse impact on the natural environment is assumed to be minimal.

(vi) Social Environment

The entire project site is state-owned land, and neither land acquisition nor resident relocation will be required.

(vii) Other/Monitoring

In this project, the executing agency will monitor the air quality, water quality, noise, vibration and the natural environment while the project is under construction and in service. In addition, monitoring will be carried out once a year by the Professional Inspection Agency (PIA), an independent inspection body of the government of Mongolia.

(b) Promotion of Poverty Reduction

None

(c) Promotion of Social Development (e.g. Gender Perspective, Measure for Infectious Diseases Including AIDS, Participatory Development, Consideration for the Handicapped, etc.)

At the design stage of the project, consideration will be given to universal design that takes into account the needs of the elderly and those of the disabled, based on Mongolia's domestic laws and international standards.

(7) Other Important Issues

None

5. Outcome Targets

(1) Evaluation Indicators (Operation and Effect Indicator)

Indicator	Baseline (2005)	Target (2017, 2 years after completion)
Wind coverage ratio during the lowest months (%)	73	95
Number of passengers per year (of this, international flights) (10,000 persons)	47 (34)	141 (119)
Number of foreign passengers per year (10,000 persons)	11	38

Cargo volume per year (of this, international cargo) (ton)	2,344 (2,334)	10,000 (8,000)
Number of takeoffs and landings per year (of this, international flights)	7,593 (3,546)	18,000 (12,000)
Delays and cancellations caused by weather conditions (%)	2.3	0.5

* Number of passengers per year, number of foreign passengers per year and cargo volume per year represent the sum total of takeoffs and landings.

(2) Number of Beneficiaries

Approx. 1.18 million²

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

Based on the following conditions, the economic internal rate of return (EIRR) is 14.0% and the financial internal rate of return (FIRR) is 0.5%.

[EIRR]

- (a) Cost: Project cost (excluding tax), operation and maintenance expenses
- (b) Benefit: Income generated by foreign tourists, reduction of delays and cancellations, etc.
- (c) Project Life: 40 years

[FIRR]

- (a) Cost: Project cost, operation and maintenance expenses
- (b) Benefit: Aviation income (airport usage fee, landing and takeoff fee, etc.), non-aviation income (tenant income, etc.)
- (c) Project Life: 40 years

6. External Risk Factors

Delays in construction due to changes in the development project the borrower plans to implement with its own funds for airport access roads, etc.

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

Lessons learned from ex-post evaluations of similar projects in the past – including the Mombasa Airport Improvement Project undertaken in Kenya and the Urumuqi International Airport Expansion Project carried out in China – are the importance of carefully analyzing factors that impact demand projection (feasibility of a regional development plan, competition with neighboring airports, etc.), and, on the basis of that analysis, deciding on the time for project implementation and project scale, putting in place an appropriate operation and maintenance system, and securing funds to meet expenses. Although the scale of the project and its operation and maintenance system were determined after careful examination, in the unlikely event that a change is required, the executing agency will, at the project implementation stage, respond appropriately by soliciting advice from the project consultant.

² Represents the difference between the number of passengers per year (1.65 million) assumed in the planned target year (2019) and the number of passengers in 2005.

8. Plans for Future Evaluation

(1) Indicators for Future Evaluation

- (a) Wind coverage ratio during the lowest months (%)
- (b) Number of passengers per year (of this, international flights) (10,000 persons)
- (c) Number of foreign passengers per year (10,000 persons)
- (d) Cargo volume per year (of this, international cargo) (ton)
- (e) Number of takeoffs and landings per year (of this, international flights)
- (f) Delays and cancellations caused by weather conditions (%)
- (g) Economic internal rate of return (%)
- (h) Financial internal rate of return (%)

(2) Timing of Next Evaluation

Two years after project completion