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# IMPLEMENTATION COMPLETION AND RESULTS REPORT
(IBRD-47650)

ON A

LOAN

IN THE AMOUNT OF US$100 MILLION

TO THE

PEOPLE'S REPUBLIC OF CHINA

FOR A

INNER MONGOLIA HIGHWAY AND TRADE CORRIDOR PROJECT

June 29, 2011

China and Mongolia Sustainable Development Unit
Sustainable Development Department
East Asia and Pacific Region

CURRENCY EQUIVALENTS

**Currency = Renminbi Yuan (RMB Y)**
**Appraisal**
Effective January 2005
RMB Y 1.00 = US$ 0.12
US$ 1.00 = Y8.28
**Completion**
Effective June 2010
RMB Y 1.00 = US$0.14
US$ 1.00 = Y 7.25
**FISCAL YEAR**
January 1 - December 31

ABBREVIATIONS AND ACRONYMS

| | | |
|---|---|---|
| BRFT | = | Border Roads for Trade |
| CAS | = | Country Assistance Strategy |
| CTT | = | Cargo Transfer Terminal |
| EA | = | Environmental Assessment |
| EAP | = | Environmental Action Plan |
| EIA | = | Environmental Impact Assessment |
| E&M | = | Electrical and Mechanical |
| HMH | = | Hailar Manzhouli Highway |
| HMEMC | = | Hulunbeier Municipal Environmental Monitoring Center |
| ICR | = | Implementation Completion and Results Report |
| ISR | = | Implementation Supervision Report |
| IST | = | Institutional Strengthening and Training |
| IC | = | International Consultant |
| IMCD | = | Inner Mongolia Communications Department |
| LACI | = | Loan Administration Change Initiative |
| MOC | = | Ministry of Communications |
| MOF | = | Ministry of Finance |
| NTHS | = | National Trunk Highway System |
| OED | = | Operations Evaluation Department |
| PAD | = | Project Appraisal Document |
| PCI | = | Per Capita Income |
| PCD | = | Provincial Communications Department |
| PIC | = | Public Information Center |
| PMO | = | Project Management Office |
| QAG | = | Quality Assurance Group |
| RAP | = | Resettlement Action Plan |
| RDB | = | Road Data Bank |
| RMF | = | Road Maintenance Fee |
| RUC | = | Road User Costs |
| SDPC | = | State Development and Planning Commission |
| TAP | = | Technical Assistance Program |
| TLS | = | Tongda Logistic Service Co. Ltd |
| VOC | = | Vehicle Operating Cost |

| | |
|---|---|
| Vice President: | James W. Adams, EAPVP |
| Country Director: | Klaus Rohland, EACCF |
| Sector Managers: | Ede Jorge Ijjasz-Vasquez, EASCS<br>Vijay Jagannathan, EASIN |
| Project Team Leader: | Simon David Ellis |
| ICR Team Leader: | Simon David Ellis |

**CHINA**
INNER MONGOLIA HIGHWAY AND TRADE CORRIDOR PROJECT

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## A. Basic Information

| | | | |
|---|---|---|---|
| Country: | China | Project Name: | Inner Mongolia Highway and Trade Corridor |
| Project ID: | P068752 | L/C/TF Number(s): | IBRD-47650 |
| ICR Date: | 06/29/2011 | ICR Type: | Core ICR |
| Lending Instrument: | SIL | Borrower: | PEOPLE'S REPUBLIC OF CHINA |
| Original Total Commitment: | USD 100.0M | Disbursed Amount: | USD 100.0M |
| Revised Amount: | USD 100.0M | | |
| **Environmental Category: A** | | | |
| **Implementing Agencies:** Inner Mongolia Communications Department | | | |
| **Cofinanciers and Other External Partners:** | | | |

## B. Key Dates

| Process | Date | Process | Original Date | Revised / Actual Date(s) |
|---|---|---|---|---|
| Concept Review: | 12/17/2003 | Effectiveness: | 07/21/2005 | 07/21/2005 |
| Appraisal: | 09/27/2004 | Restructuring(s): | | 06/05/2007 |
| Approval: | 02/15/2005 | Mid-term Review: | | |
| | | Closing: | 06/30/2010 | 06/30/2010 |

## C. Ratings Summary

**C.1 Performance Rating by ICR**

| | |
|---|---|
| Outcomes: | Moderately Satisfactory |
| Risk to Development Outcome: | Moderate |
| Bank Performance: | Satisfactory |
| Borrower Performance: | Satisfactory |

**C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)**

| Bank | Ratings | Borrower | Ratings |
|---|---|---|---|
| Quality at Entry: | Moderately Satisfactory | Government: | Satisfactory |
| Quality of Supervision: | Satisfactory | Implementing Agency/Agencies: | Satisfactory |
| **Overall Bank Performance:** | Moderately Satisfactory | **Overall Borrower Performance:** | Satisfactory |

| C.3 Quality at Entry and Implementation Performance Indicators | | | |
|---|---|---|---|
| **Implementation Performance** | **Indicators** | **QAG Assessments (if any)** | **Rating** |
| Potential Problem Project at any time (Yes/No): | No | Quality at Entry (QEA): | None |
| Problem Project at any time (Yes/No): | Yes | Quality of Supervision (QSA): | None |
| DO rating before Closing/Inactive status: | Moderately Satisfactory | | |

| D. Sector and Theme Codes | | |
|---|---|---|
| | **Original** | **Actual** |
| **Sector Code (as % of total Bank financing)** | | |
| Roads and highways | 99 | 99 |
| Sub-national government administration | 1 | 1 |
| | | |
| **Theme Code (as % of total Bank financing)** | | |
| Administrative and civil service reform | 33 | 33 |
| Trade facilitation and market access | 67 | 67 |

| E. Bank Staff | | |
|---|---|---|
| **Positions** | **At ICR** | **At Approval** |
| Vice President: | James W. Adams | Jemal-ud-din Kassum |
| Country Director: | Hsiao-Yun Elaine Sun | David R. Dollar |
| Sector Manager: | Ede Jorge Ijjasz-Vasquez | Jitendra N. Bajpai |
| Project Team Leader: | Simon David Ellis | Supee Teravaninthorn |
| ICR Team Leader: | Simon David Ellis | |
| ICR Primary Author: | Alain M. Dube | |

## F. Results Framework Analysis

**Project Development Objectives (from Project Appraisal Document)**

The main objective of the project is to sustain and promote the development of cross-border trade between China on one hand and Russia and Mongolia on the other by improving transport infrastructure and logistics. These improvements, in turn, will lower transport costs, increase income from external trade, and raise incomes in Inner Mongolia, the country's third-largest province and one of the poorest provinces of the western region.

**Revised Project Development Objectives (as approved by original approving authority)**

**(a) PDO Indicator(s)**

| Indicator | Baseline Value | Original Target Values (from approval documents) | Formally Revised Target Values | Actual Value Achieved at Completion or Target Years |
|---|---|---|---|---|
| **Indicator 1 :** | Reduced travel time along the HMH corridor (min.) | | | |
| Value quantitative or Qualitative) | 180 | 100 | | 120 |
| Date achieved | 12/31/2003 | 12/31/2009 | | 12/31/2009 |
| Comments (incl. % achievement) | Because of safety issues, the WB requested that reduced speed be implemented in specific urban area crossed by HMH, hence contributing to the less than anticipated reduction in travel time. | | | |
| **Indicator 2 :** | Increased volume of cargo for import/export at the border (1,000 tons) | | | |
| Value quantitative or Qualitative) | 394.2/43.8 | 850/100 | | 12.4/218.9 |
| Date achieved | 12/31/2003 | 12/31/2009 | | 12/31/2009 |
| Comments (incl. % achievement) | 2003 baseline import value (394.2) was significantly overestimated. Actual 2003 import volume was 89.3 kiloton. The 86% reduction is related to deteriorating trade relations between China and Russia including the clamping down on informal trade, the general economic climate, the unavailability of the CTT in Hailar and increased travel time between Hailar and Manzhouli during construction works. | | | |
| **Indicator 3 :** | Increased tonnage of cargo handled at CTT (1,000 tons) | | | |
| Value quantitative or Qualitative) | 0 | 350 | | 0 |
| Date achieved | 12/31/2003 | 12/31/2009 | | 12/31/2009 |
| Comments (incl. % achievement) | PAD baseline value is 72 which is obviously an error. Real value is 0 since CTT could not handle cargo in 2003. CTT had not opened at time of writing this ICR. | | | |
| **Indicator 4 :** | Increased Cargo Volume (import/export) on railway (1,000 tons) | | | |
| Value quantitative or Qualitative) | 9180/1820 | 12500/2450 | | 21315/2365 |
| Date achieved | 12/31/2003 | 12/31/2009 | | 12/31/2009 |
| Comments (incl. % achievement) | | | | |
| **Indicator 5 :** | Adjusted import share of trade cargo by mode (RW/HW) (1,000 tons) | | | |
| Value quantitative or Qualitative) | 95.9/4.1 | 93.7/6.3 | | 99.9/0.1 |

| | | | | |
|---|---|---|---|---|
| Date achieved | 12/31/2005 | 12/31/2009 | | 12/31/2009 |
| Comments (incl. % achievement) | In addition to the comments formulated in indicator 2, it is suggested that the 2008 high fuel prices has also contributed to the shift from truck to rail for both import and export cargo volume. | | | |
| **Indicator 6 :** | Adjusted export share of trade by mode (RW/HW)(1,000 tons) | | | |
| Value quantitative or Qualitative) | 97.4/2.6 | 96.1/3.9 | | 91.5/8.5 |
| Date achieved | 12/31/2003 | 12/31/2009 | | 12/31/2009 |
| Comments (incl. % achievement) | In addition to the comments formulated in indicator 2, it is suggested that the 2008 high fuel price has also contributed to the shift from truck to rail for both import and export cargo volume. | | | |
| **Indicator 7 :** | Increased AADT on HMH (MTE/day) 1) Hailar-Chenbaerhu 2) Chenbaerhu-Wuzhuer 3) Wuzhuer-Chagang 4) Ghagang-Zhalainuoer 5) Zhalainuoer-Manzhouli 6) Manzhouli-Guomen Port | | | |
| Value quantitative or Qualitative) | 1) 3300 2) 2400 3) 1800 4) 1700 5) 3900 6) 1800 | 1) 6800 2) 4600 3) 3400 4) 2700 5) 7500 6) 4000 | | 1) 1198 2) 1002 3) 754 4) 487 5) 1151 6) 230 |
| Date achieved | 12/31/2003 | 12/31/2009 | | 12/31/2009 |
| Comments (incl. % achievement) | Baseline values were initially significantly overestimated, hence resulting in unreachable target values. | | | |
| **Indicator 8 :** | Increased AADT on BRFT (Mte per day) 1) Dayangshu-Baihupai 2) Zhalainuoer-Heishantou 3) Yimin-Andagai 4) Alatanemole-Arihashate 5) Amugulang-Ebuduge | | | |
| Value quantitative or Qualitative) | 1) 1020 2) 800 3) 820 4) 290 5) 300 | 1) 1800 2) 1200 3) 1320 4) 430 5) 610 | | 1) 630 2) 123 3) 314 4) 246 5) 73 |
| Date achieved | 12/31/2003 | 12/31/2008 | | 12/31/2008 |
| Comments (incl. % achievement) | Baseline values were significantly overestimated, hence resulting in unreachable target values. | | | |

**(b) Intermediate Outcome Indicator(s)**

| Indicator | Baseline Value | Original Target Values (from approval documents) | Formally Revised Target Values | Actual Value Achieved at Completion or Target Years |
|---|---|---|---|---|
| **Indicator 1 :** | % of HMH civil works completed | | | |
| Value (quantitative or Qualitative) | 0 % | 100% | | 100% |
| Date achieved | 12/31/2003 | 12/31/2008 | | 12/31/2008 |
| Comments (incl. % achievement) | Civil works completed 6 months before deadline. | | | |

| | | | | |
|---|---|---|---|---|
| **Indicator 2 :** | % of BRFT civil works completed: a) Dayangshu-Baihuapai; b) Zhalainuer-Heishantou; c) Yimin-Handagai; d) Alatanemole-Arihashate; e) Amulgulang-Ebuduge | | | |
| Value (quantitative or Qualitative) | a) to e) 0% | a) 100; b) 100; c) 100; d) 100; e) 100 | | a) 100; b) 100; c) 100; d) 100; e) 100 |
| Date achieved | 12/31/2003 | 12/31/2007 | | 12/31/2007 |
| Comments (incl. % achievement) | Initial BRFT work program was completed within planned deadlines. | | | |
| **Indicator 3 :** | % of Cargo Transfer Terminal (CTT) completed | | | |
| Value (quantitative or Qualitative) | 0% | 100% | | 60% |
| Date achieved | 12/31/2003 | 12/31/2007 | | 12/31/2007 |
| Comments (incl. % achievement) | Cargo terminal was completed in October 2008. CTT expansion and improvements was completed in October 2010. | | | |
| **Indicator 4 :** | % training program completed (person/months): a) Domestic; b) Overseas | | | |
| Value (quantitative or Qualitative) | a) 0%; b) 0% | a) 100; b) 100 | | a) 100; b) 100 |
| Date achieved | 12/31/2003 | 12/31/2008 | | 12/31/2008 |
| Comments (incl. % achievement) | | | | |
| **Indicator 5 :** | % of study of measures to promote cross border trade completed | | | |
| Value (quantitative or Qualitative) | 0% | 100% | | 100% |
| Date achieved | 12/31/2003 | 12/31/2006 | | 09/30/2007 |
| Comments (incl. % achievement) | | | | |

## G. Ratings of Project Performance in ISRs

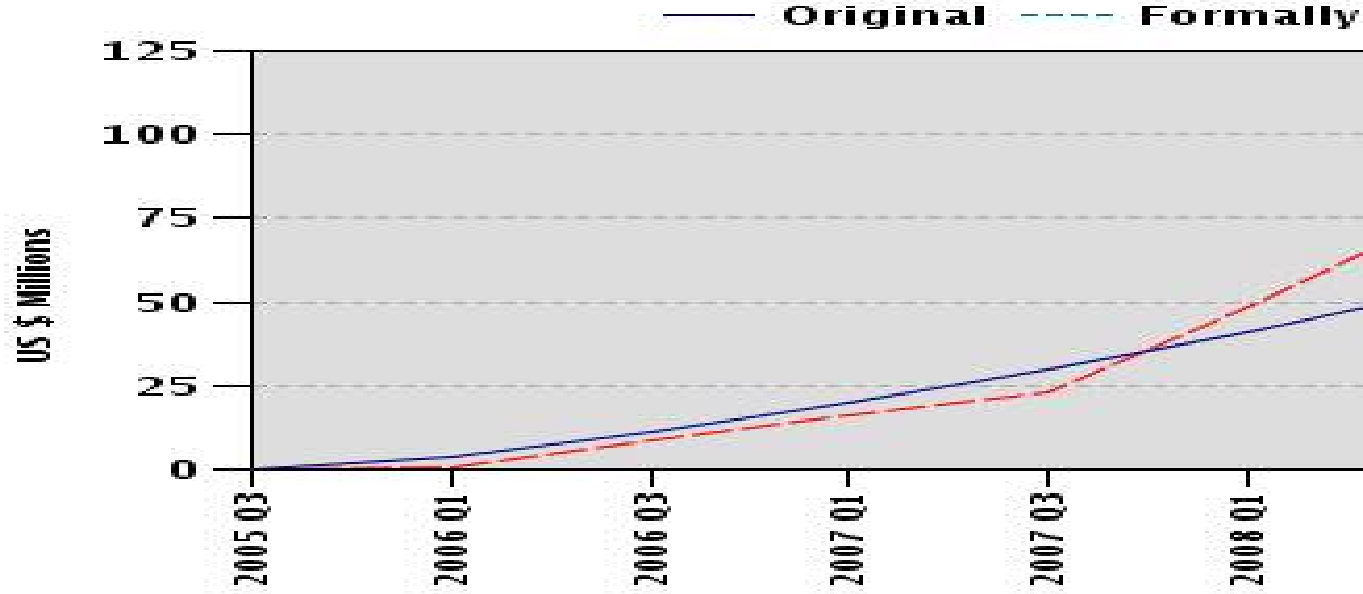
| No. | Date ISR Archived | DO | IP | Actual Disbursements (USD millions) |
|---|---|---|---|---|
| 1 | 06/22/2005 | Satisfactory | Satisfactory | 0.00 |
| 2 | 10/05/2005 | Satisfactory | Satisfactory | 0.50 |
| 3 | 06/21/2006 | Satisfactory | Satisfactory | 10.54 |
| 4 | 01/16/2007 | Satisfactory | Moderately Unsatisfactory | 18.23 |
| 5 | 05/21/2007 | Satisfactory | Satisfactory | 23.07 |
| 6 | 06/28/2008 | Moderately Satisfactory | Satisfactory | 81.82 |

| | | | | |
|---|---|---|---|---|
| 7 | 06/25/2009 | Moderately Satisfactory | Satisfactory | 97.54 |

## H. Restructuring (if any)

| Restructuring Date(s) | Board Approved PDO Change | ISR Ratings at Restructuring | | Amount Disbursed at Restructuring in USD millions | Reason for Restructuring & Key Changes Made |
|---|---|---|---|---|---|
| | | DO | IP | | |
| 06/05/2007 | N | S | S | 23.07 | The project had a second order restructuring to utilize cost savings including a reallocation of loan savings (2%) and the use of the unallocated portion of the loan (10%) to finance the rehabilitation of the 263 km Genhe-Mangui border road for trade. This brought the total estimated kilometers of rehabilitated road under the Border Road For Trade (BRFT) component to almost 700 km from the initial estimated length of 400 km. |

## I. Disbursement Profile



## 1. Project Context, Development Objectives and Design

### 1.1 Context at Appraisal

At the time of preparation of the Inner Mongolia Highway and Trade Corridor Project, the Bank's strategic objective, in line with the Country Assistance Strategy (CAS) adopted in November 2002 was to support China's social and economic development by providing assistance in four key areas: (i) improving the investment climate (ii) accelerating the transition to a market economy (iii) addressing the needs of disadvantaged groups and underdeveloped regions (iv) facilitating a more sustainable development process. Transport infrastructure development, and particularly in China poorest provinces, was identified as a key area to reach these strategic objectives.

In this strategic context, the CAS recommends Bank intervention in the following areas of the transportation sector: (i) financing economic infrastructure in key growth corridors, including seaport and external trade corridors and corridors serving western provinces; and to reduce inter- and intra-regional development disparities (ii) financing infrastructure to serve poorer communities, thereby improving productivity in rural areas (iii) facilitating the development of institutions necessary for managing and planning the infrastructure network in China's rapidly growing market economy.

Exports have played an important role in China's strong economic growth in recent years. However, because internal transport costs are high, coastal provinces have benefited more from this growth than have inland provinces. Costs are high in part because of distance, but also because of inefficient or inappropriate pricing and weak intermodal logistics. If inland provinces are to have a meaningful share of China's booming export trade, access to these provinces must improve, and constraints on the transportation of goods and services must be overcome.

The government's transportation policy emphasizes improving access for inland provinces and fostering the development of trade through lower transport costs and improved logistics services. This is particularly true for China's trade with Russia, in which Hulunbeier League in Inner Mongolia, on China's north-eastern border with Russia and Mongolia, plays a key role. Border trade between China and Russia had been growing rapidly and with significant increase in trade volume expected, and railways badly overburdened, serious consideration must be given now to investment in transport links and facilities to move and handle cargo in Hulunbeier notably between Manzhouli, the second largest international land port in China and Hailar.

The project was designed to help meet the sector-related CAS objectives of facilitating trade (domestic and international), improving regional and market integration, and fostering the development of western regions, whose development lags behind that of coastal areas.

### 1.2 Original Project Development Objectives (PDO) and Key Indicators (*as approved*)

The main objective of the project is to sustain and promote the development of cross-border trade between China on one hand and Russia and Mongolia on the other by improving transport infrastructure and logistics. These improvements, in turn, will lower transport costs, increase income from external trade, and raise incomes in Inner Mongolia, the country's third-largest province and one of the poorest provinces of the western region.

The principal outcome or impact indicators selected for monitoring progress in achieving the project development objective are:

- *For the Hailar-Manzhouli Highway (HMH) and the Border Roads for Trade (BRFT) components:*
  - Travel time (projected to be reduced by at least 50 percent after HMH completion)
  - Traffic volume served by the corridor, especially of trade cargo, projected to increase by 100 percent after HMH completion
  - Share of trade cargo transported by highway will be increased as railway will be dedicated for transportation of petroleum imported from Russia. Timber, mineral products and other general cargo will have to be offloaded from the overburdened rail mode of transport to road, and is projected to be at least 10 percent of total trade volume.

- *For the Cargo Transfer Terminal (CTT)* - volume of cargo passing through the CTT (projected to increase by factor of four by 2008)

- *For the Institutional Strengthening and Training (IST) component* - improvement in efficiency and capacity of local governments to manage the HMH and BRFT infrastructure facilities and promote border trade, measured in numbers of staff trained who remain in the jobs for which they received training (projected at least half those trained).

**1.3 Revised PDO (as approved by original approving authority) and Key Indicators, and reasons/justification**

The PDO and Key Performance Indicators remained the same throughout the project.

**1.4 Main Beneficiaries**

The project aims to accelerate economic growth and thus improve living standards in Inner Mongolia and more specifically for the 2.68 million inhabitants of Hulunbeier. The project is expected to benefit all local populations, including ethnic minority groups, through i) improved transportation conditions, particularly through the BRFT component, ii) improved employment opportunities under the project, iii) promotion of better use of natural resources and development of livestock industries. The major quantifiable benefits are reductions in vehicle operating costs (VOC) and time costs of road users. Cars and trucks traffic from the HMH and the various BRFT constitute the majority of the roads user benefits. The non-quantified benefits include a reduction in traffic accidents and improved accessibility to poorer areas in Inner Mongolia. This improved accessibility and the new CTT, in turn, will generate both direct and indirect benefits of improved access to markets, job opportunities, education and health-care facilities.

**1.5 Original Components (***as approved***)**

The project includes the following components:

**COMPONENT 1—HIGHWAY CAPACITY EXPANSION (US$172.69 MILLION)**

**Construction of the Hailar–Manzhouli Highway: US$163.38 million**

1. Construction of the approximately 177 km Hailar–Manzhouli Highway (HMH) is the project's main component. This does not include the 4 km Jalannuer–Manzhouli section built under a public–private investment scheme, but does include a city road section connecting to the customs area in Manzhouli. Of the 177 km, 110 km will be reconstructed and widened, and 56

km will be new construction on a new alignment. The last section bypassing Manzhouli will be also widened to four lanes.

2. The HMH is a divided, four-lane, partially access-controlled highway that could be operated as an open toll highway if IMCD finally decided to toll the highway. It will include two interchanges and three toll stations, service areas, and parking bays, as well as facilities for highway administration and maintenance.

### Equipment: US$3.94 million

3. Equipment will be procured for maintaining national and provincial highways (including expressways) and other lower-class roads. Equipment needed for controlling construction quality and monitoring and for institutional strengthening will be procured or supplied before civil works begin and will be financed locally. The equipment list, which includes cost estimates, is available in the project file.

### Supervision of construction: US$5.37 million

4. A supervision team composed of local firms and international consultants and headed by a chief supervision engineer will supervise the construction of HMH in accordance with FIDIC provisions.

## COMPONENT 2—BORDER ROADS FOR TRADE (US$51.30 MILLION)

5. The Border Roads for Trade (BRFT) component has been designed to connect with ports and international border crossings to promote trade with Russia and Mongolia and fill in missing links in the critical road network. Inner Mongolia recognizes that eastern Russia's and Mongolia's trade with countries beyond China conceivably could transit Chinese territory for shipments through Chinese seaports. Five sections with a total length of about 413 km were selected for inclusion in the project, of which 71 km will be Class II highway and 342 km will be Class III roads.

## COMPONENT 3—TRADE FACILITATION COMPONENT (US$2.64 MILLION)

6. The trade facilitation component of the project consists of the development of a cargo transfer terminal (CTT) and a diagnostic study on measures to promote cross-border trade between China and its neighbors.

### CTT (US$2.54 million)

7. The purpose of the CTT is to provide the facilities and services necessary for the transfer of cargo from Russian trucks to Chinese trucks as well as for the distribution and consolidation of cargo. The CTT will be developed in phases. The first phase of the proposed CTT is designed to have the capacity to handle 850,000 tons of cargo per year.

8. The CTT, located in the Haidong Industrial Development Zone in Hailar, will have basic facilities and utilities such as warehouses (temperature-controlled for conventional products and fruits and vegetables) cargo handling facilities, office blocks and facilities for truck drivers. Customs officers, stationed in the Haidong Industrial Economic Zone, will be available to clear cargo at the CTT. A rail siding provides access to the Binzhou Line (Harbin–Manzouli).

### Study on measures to promote trade (US$0.10 million)

9. The diagnostic study will identify measures that will help develop the full potential for cross-border trade between China, Russia, and Mongolia. These measures will include the development of infrastructure facilities and transportation network necessary to handle the movement of cargo between the two countries as well as trade facilitation measures to promote the conduct and

development of trade. The trade facilitation component is estimated to cost RMB 22 million (US$2.64 million) and will be financed locally.

**COMPONENT 4—INSTITUTIONAL STRENGTHENING AND TRAINING (US$1.17 MILLION)**

10. The IST component of the proposed project was designed to improve the efficiency and sustainability of road sector management in Inner Mongolia and strengthen institutional and policy development, focusing on logistics arrangements with neighboring countries.

11. A training program under previous projects has started strengthening the capacity of IMCD and related agencies. The program will build on training begun under these projects without duplicating it. New courses will take into consideration the activities of the ongoing Inner Mongolia Highway Project while relating directly to the implementation of project components. Subjects under overseas training and study tours include development and promotion of international trade activities, trade logistic planning and management, planning and design of trade processing zone, and container transport management in additional to the usual and conventional technical subjects of highway design and project management.

12. The training program will include overseas study tours (36 person-months), training courses abroad (40 person-months) and domestic courses (294 person-months). It will be updated periodically during project implementation.

### 1.6 Revised Components

*Component 1 – Highway Capacity Expansion.* Maintenance equipment to be procured for national and provincial highways (including expressways) and other lower-class roads was cancelled, the client favoring the addition of another road improvement to the BRFT program.

*Component 2 - Border Roads for Trade.* The BRFT program was modified by a loan amendment on June 5, 2007, to allow for the "Upgrading and rehabilitation of about 700 km of road sections identified either as key links for international trade facilitation at smaller border crossings with the Russian Federation and Mongolia, or as critical missing links in the highway network in Inner-Mongolia". This allowed for the financing under the loan of the proposed Genhe-Mangui 263 km road. This increase in total road km was rendered possible by lower than anticipated initial contract cost for civil works components which were respectively 26% and 19% lower than PAD estimates for the HMH and the BRFT. These savings and the unallocated portion (US$ 10.05 million) of the loan were to be used to finance this additional BRFT as requested in 2006 by MOF and NDRC.

All other components remained the same.

### 1.7 Other significant changes

**Yimin-Handagai BRFT**

This substandard road was to be upgraded to class III. However, in 2005, IMCD requested the road be upgraded to class II, in continuity with adjacent road segments being also class II. This change resulted in a final construction cost of 230.43 RMBY million which represented an increase of 161% increase over the PAD estimate.

**Reallocation of loan amounts**

The request by IMCD supported by MOF for the additional Genhe-Mangui BRFT and the decision not to apply for variations above 15% for HMH civil work costs led the Bank to agree to a relocation of savings and the use of the Part 6 (unallocated US$ 10.05 million) of the loan between various categories. Reallocated amounts included an adjustment of Part A (i) (HMH - civil works) from US$63.5 million to US$61.5 million and Part B (BRFT - civil works) from US$18 million to US$30 million.

## 2. Key Factors Affecting Implementation and Outcomes

### 2.1 Project Preparation, Design and Quality at Entry

The project was predicated on the premise that maximizing the use of transport infrastructure, to promote international trade through Inner Mongolia, and building additional cargo transfer facilities, would generate economic development, alleviate poverty and improve the quality of life in the project area.

The quality at entry is rated as **Moderately Satisfactory.** This assessment is based on the following:

***Project consistency with Government priorities and CAS:*** The project objectives were fully consistent with the government's priorities and the CAS as set out in Section 1.1 of this ICR. The project included within its design the improvement of a major transport corridor. The corridor was designed to serve one of China's poorest provinces by linking a major land port with key trade corridors in Western China. The improved links would enhance infrastructure to serve poorer communities, increase the productivity of rural areas, and improve trade facilitation.

***Client Project commitment:*** Discussions with the Borrower at appraisal and local fund commitments indicated strong ownership of the project and a very strong interest in improving trade corridors with Russia and Mongolia and other neighboring provinces of China. The national, provincial, and local government was very committed to support the proposed highway because it is a strategic artery to promote trade with Russia. The government of Inner Mongolia has shown an especially strong commitment to this project. The project is an integral and key component of the State Council's plan to expand border trade with Russia through the Hailar-Manzhouli corridor.

***Potential Risks:*** The project was deemed sustainable with an overall **moderate risk** rating. A number of agreements were reached with the Borrower which translated into legal covenants described in the project agreement. Identified potential risks included 1) the availability of scarce management resources considering the workload of previously ongoing Inner Mongolia Highway Project and 2) the transport services and trade facilitation component was a departure from IMCDs traditional focus on transport infrastructures. Mitigation measures were proposed for each of the identified risks.

***Technical analysis:*** Much of the analysis related to the design of the HMH was predicated on the expected increase in trade between Russia and China generated both because of more liberal trade laws allowing Russian trucks to enter further into China and because of the improved infrastructure. The technical analysis undertaken during project identification and preparation has now been shown to be overly optimistic in terms of the assumptions made for generated traffic. Baseline values (cargo volumes import and export, shares per transport modes) were also over/underestimated which compounded the problems in estimating target traffic volumes.

Traffic forecasts would have benefited from an external audit by an international expert supported by independent traffic counts. This may have altered standards of construction for some BRFT and a different construction approach for HMH. Concerns over the accuracy of the traffic forecasts led to the downgrading of the rating. The technical and environmental justifications for the optimized alignment of HMH were found satisfactory, taking into account both possible bypass of urbanized area, environmentally protected and tourism areas and identified unfavorable geological conditions for part of the initial alignment. This was an environmental **category A project**, hence EIA, public consultations, EAP, RAP were completed, submitted to the Bank, reviewed and found acceptable and disclosed.

The project was designed taking into account the relevant economic, financial and institutional factors. For the BRFT, the financial evaluation focused on the availability of sufficient counterpart funds. More than 1290 million CNY were approved by MOC and the government of Inner Mongolia for the project prior to its start.

The project was not reviewed for quality at entry by the Quality Assurance Group.

### 2.2 Implementation

The project was implemented fairly smoothly, with the highway, the BRFT and the CTT completed well within the project timeframe, mostly because of strong commitment by IMCD.

Project implementation was slightly delayed by a series of unforeseeable events (poor weather conditions) and significant work variations mostly related to i) differences between actual geological conditions and those adopted in design drawings and ii) modification of the construction standard from class III to class II for the Yiming-Handagai BRFT. In January 2007, a moderately unsatisfactory rating was entered for the implementation progress based on slow loan disbursement and delays in producing reports on work variations. The project was however considered substantially completed by November 2008 with the exception of the additional Genhe-Mangui BRFT, added in 2006, which was completed in October 2009 or 8 months before the loan closing date. Important delays were recorded in reporting the status of cost overruns and approving variation orders. These delays were mostly related to internal clearance hurdles at various government levels and between different government agencies.

***Management:*** As proposed in the initial Project Implementation Plan, a sensible project management and supervision structure was implemented early in the project with sufficient staff (more than 40) to properly support project activities both at local and central level. Additional management support and training was provided by an international consultant (IC). This support was however very minimal and it is suggested that because: i) most international consultant lack sufficient knowledge of Chinese standards and technical challenges and ii) that construction quality in China is generally high, IC activities should be limited to specific short term technical or specialized tasks.

***Procurement:*** Procurement plan were submitted for approval along with relevant contractual documents for prior review clearance when needed. Civil works, consultants and equipments contracts were procured early in the project with some of the works (BRFT) being retro-financed (November 2004 to May 2005). There were no major procurement issues during the project.

### 2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization

The project was monitored through monthly progress reports for civil works of HMH and quarterly progress reports for all other components. An annual monitoring report was developed

covering all components and assessing the extent to which various implementation and development objectives were achieved. Annual accounts for the project for each fiscal year were audited by independent auditors and reviewed by the Bank's task team.

The project design adopted a series of physical targets for measuring progress. The outcome indicators were selected so that they were meaningful, and the data was available or could be reasonably collected and reliable. Baseline value estimates for traffic on HMH were made on the basis of routine traffic counts and a comprehensive origin and destination (OD) survey that took place on June 2001 (updated on October 2002 and December 2003). Those forecasts were further reviewed and confirmed by an independent transport institute in Beijing to review regional transport demand and traffic on this highway corridor. The selected M&E indicators were appropriate although both baseline and target values for the indicators proved to be either incorrect or overly optimistic. As shown in the client ICR (Annex 7) other indicators such as per capita income growth and passenger increases were also monitored to evaluate the benefits of the BRFT on poverty reduction.

Bank review missions were organized regularly to monitor progress and quality of work on site and to provide advice and support on overcoming difficulties and issues arising from project implementation.

In retrospect, and considering external influences of the economy and trade relations, cargo volumes and ratios between various transport modes proved inconclusive in evaluating the project contribution of the project transport investments in poverty reduction.

## 2.4 Safeguard and Fiduciary Compliance

*Environment*: The policy and administrative requirements for environmental assessments of development projects in China were followed, as were the Bank's OP 4.01 on Environmental Assessment. During preparation, the Environmental Impact Assessment (EIA) and EMP were reviewed and found satisfactory. Environmental impacts and mitigation measures were fully considered during project design, construction and operation phase. A particular emphasis was given to the Erka Wetlands (see Box below).

The potential environmental impacts anticipated in the EIA report include noise and air pollution during the construction and operation phases, water flow disruption, water pollution and soil erosion during the construction phase. A framework including environmental management and supervision organizational setup, monitoring approach and methodology, and institutional strengthening and training was established to ensure smooth implementation and quality performance. Considerable efforts were made to follow the EMP, and to mitigate and monitor the project's adverse impacts. The mitigation measures taken include appropriate alignment selection, road crossing, bridges and culverts, drainages, slope protection and greening work, and restoration of disturbed areas etc.

Hulunbeier Municipal Environmental Monitoring Center (HMEMC) was entrusted to conduct environmental monitoring for the project during the construction and operation phase. Environmental monitoring was carried out regularly, in compliance with the EMP recommendations. HMEMC conducted a detailed survey on the areas disturbed by construction, including borrow sites, spoil disposal sites, quarry sites and temporarily occupied sites, side slopes, and recorded the location, area, type, status and restoration measures adopted, name of contractors, etc. HMEMC concluded that all the disturbed areas were satisfactorily restored after the construction activities were completed.

Public consultations and information disclosure were a continuous process during the entire project cycle. Total expenditure on environment protection and water and soil conservation was estimated to be about 16.41 million CNY or 1.62 percent of the total project cost. No unforeseen environmental problems arose during project implementation.

Based on the factors mentioned above, environmental safeguard performance was concluded as ***Highly Satisfactory***.

## THE ERKA WETLANDS

The Erka wetlands are an internationally important nesting area for several species of birds, including the red-crowned and white-naped cranes, great bustard, swan goose and greater spotted eagles. It is adjacent to the Russia-Mongolia-China Dauria International Protected Area (DIPA) which was founded at the junction of the borders between Russia, Mongolia and China on March 29, 1994 and combines four specially protected nature areas in those three countries.

During appraisal and implementation, there were a number of critics of the project who were concerned that building a freeway could carve a bird-free corridor through rich marshland. The WB environmental specialist and a bird expert had agreed that the EMP include a six-year special ecological monitoring.

In the spring of 2010, the same expert visited the site and noted the following: "Found a rich wetland, with good numbers of water birds, including some that were pretty much right next to the highway".

Disruption of the waterflow through the Erka wetland was also a concern and this led to a recommendation of widening bridges and culverts including the main bridge over the Hailar River. These recommendations were followed by IMCD and during the latest 2010 visit no such disruption was apparent, nor does it appear the highway had affected the water flow based on recent Landsat images.

*Social:* Project resettlement was fully implemented. With complete implementation of the RAP, all the affected people were informed and consulted, and were to some extent participating in relevant resettlement decisions and specific actions. All the affected households have restored their housing, with better quality than before relocation as well as better surrounding environment. All the land was fully compensated and the livelihood of the affected is restored. The affected infrastructure and public facilities are fully paid and restored.

Based on the evaluation of the monitor as well as the continuous site visits and observation of the mission, it is concluded that the RAP and related resettlement implementation of the project is **satisfactory**, and that the resettlement objective of improving the livelihood of the project affected people after resettlement implementation was met.

Fiduciary compliance was **satisfactory**. The procurement carried out under the project was in compliance with Bank policies and procedures. There were significant delays in preparing and approving variation orders and reporting status of cost overruns. Considering the importance of these changes, counterpart's funds availability of counterpart funds also resulted in delays in contractor payments. Project financial statements were prepared in the format agreed with the Bank. The audited project financial statements, as required by the legal agreements, were submitted to the Bank on time.

### 2.5 Post-completion Operation/Next Phase

***Hailar-Manzhouli Highway***: Following the final inspection in 2007, the operation of the highway was transferred to the Hulumbeir Highway Administration Bureau (supervised by the Eastern High Class Highway Management Division) which is conducting appropriate maintenance operations. The one year defect liability ended in November 2008, and a 2010 site visit confirmed the highway has been well operated and maintained. Toll revenue for the HMH has been scarce and will not be sufficient by 2012 to meet loan payments unless a significant increase in traffic volume materializes. Considering the low traffic volume on HMH (see Annex 2), it was not deemed necessary at this time to procure and install weight stations on the highway. It is however recommended that a new assessment of toll rates versus predicted traffic volume be done in order to maximize both toll revenues and the operations of the Hailar CTT. IMCD will continue to monitor traffic volume at toll stations as a routine operation.

***Border roads for trade:*** The BRFT rehabilitated or improved by the project are now under regular maintenance schemes.

***Cargo transfer Terminal:*** The initial CTT construction work was completed in October 2008. The infrastructure was however plagued with several problems which were related to poor design. Hence in October 2008, Hulumbeir Transport Management Division (HTMD) decided to move forward with the privatization of the CTT to Tongda Logistic Service Co. Ltd (TLS). This company aside from promoting the CTT to transport companies and potential clients was mandated to improve the existing infrastructure based on their future clients needs. TLS also planned to undertake a first phase expansion of 6300m2 that was to be followed in 2010 by a second phase 4500 m2 expansion. CTT operations had not started at the time of writing this ICR and on its own is unlikely to have any significant impact on the traffic volumes using the HMH. An easing of restrictions on allowing Russian trucks to travel farther inland to the Hailar CTT will also be important for the CTT to become a transport hub. Both cargo and traffic volumes should be monitored to optimize these infrastructure investments.

On the **Institutional Development** side, all training program were completed and contributed positively to the project success. The overseas training program was reduced because of delays in getting travel visas; however the domestic training program was significantly sized-up. The trade facilitation study was successfully completed but IMCD will need to continue an open dialogue with the other government agencies involved in trade, if there is to be improvement in optimizing trade with neighboring countries.

## 3. Assessment of Outcomes

### 3.1 Relevance of Objectives, Design and Implementation

The project objectives were clear and in accordance with the long term development goals of the Government of China. They remain in line with the May 2006 CPS, which reflects the Bank's strategic objective to foster growth, reduce poverty, encourage good governance and improve the

environment, as well as support China's development agenda by infrastructure improvement. The objectives of this project also conform with the Chinese government's strategy, including poverty and regulatory reforms with special attention to financing issues and ensuring efficient fund utilization; the development of all-weather roads to remote/low income areas in poor counties; and the rapid development of highway network including provincial roads feeding into the system.

### 3.2 Achievement of Project Development Objectives

The main objective of the project is to sustain and promote the development of cross-border trade between China on one hand and Russia and Mongolia on the other by improving transport infrastructure and logistics. These improvements, in turn, will lower transport costs, increase income from external trade, and raise incomes in Inner Mongolia, the country's third-largest province and one of the poorest provinces of the western region.

The project outcome is rated as **moderately satisfactory** based on having achieved satisfactory outcomes on most components of the project, including implementation of the trade facilitation component, general borrower performance, and the overall partial achievements in meeting the project development objectives as outlines in the Project Appraisal Document (PAD).

Project outcome is rated moderately satisfactory specifically for the following reasons:

**A. Improved trade between Inner Mongolia, Russia and Mongolia through improved transportation capacity and improved trade facilities in Hulunbeier.**

The HMH has enhanced the overall transport capacity (cargo and person) and mobility between Hailar and Manzhouli, a major land port with Russia in the northern part of China.

The completion of the HMH has provided a high grade transport infrastructure between Hailar and Manzhouli, a major land port in northern China, linking hub cities within this region to neighbouring Russia. Travel time (-30% or 60 minutes less) and distances have been reduced on this main highway of the Hulumbeir banner, thereby reducing vehicle operating and transport costs.

The HMH did not succeed however in promoting additional trade with Russia which actually shows an overall decrease of 16% for imported/exported cargo volume by road between 2003 and 2009 (see annex 2 for details). It is considered that several events contributed to this lack of trade benefits from improved access to Manzhouli. During the implementation of the project, hardening trade relations between China and Russia including the clamping down on informal trade, the general economic climate, and the lack of availability of the CTT in Hailar have all contributed to this situation. These events also resulted in significantly less than anticipated traffic volume (-83%) for which initial estimate were also too optimistic (over 200%). It is also believed that travel delays during the civil works on HMH and the elevated fuel price of 2008 may also have contributed to a favorable shift from truck to rail cargo transport as shown by the 56% increase in cargo volume by rail between 2003 and 2009.

Nevertheless, it is anticipated that once i) trade relations with Russia improves; ii) the overall economic climate become positive and iii) the full potential of the Hailar CTT comes to fruition, trade and traffic volume on the HMH should increase significantly.

Through the BRFT, missing or less performing transport links were upgraded to promote trade with Russia and Mongolia. These improvements succeeded in reducing travel time and vehicle

operating costs. Benefits for these upgraded links also included better access for local populations to trade markets, health and education facilities and in the case of the Genhe-Mangui BRFT more efficient access to prevent and fight forest fires.

**B. Enhanced public sector management and trade facilitation training**

The capacity of the highway sector entity—the IMCD—improved during the implementation of the project through domestic and overseas training, study tours and execution experience which gave the IMCD staff exposure to new concepts and opportunities to learn new practices and technical approaches. The training covered a wide range of subjects related to highway construction, supervision, maintenance and management, financial management, project management, toll management, trade facilitation, human resources and auditing, procurement, environmental monitoring, resettlement and compensation. The overseas program was reduced due to delays in obtaining travel visas while the local program was significantly sized-up. Overseas training reports were prepared by trainees and submitted to the Science and Education division of IMCD Human Resources department for potential development opportunities and dissemination. Trainees were expected to disseminate findings at domestic seminars and workshops and some are maintaining contact with specialists abroad.

A trade facilitation study followed by an international trade workshop in Russia was also conducted although it is unclear how the findings from these visits were integrated in daily practices or ended up in changes to trade policies. The report is well organized and clearly illustrates the increasing demand for the new Highway, border crossing infrastructures and the cargo transfer terminal (CTT) facility as well as the training requirements. The report however fell short of addressing major trade issues such as intermodalism, trade programs and CTT operations, infrastructures compatibility and regulations between trade partners. In order to elaborate on some of these trade issues, a study tour to Russia was completed in August 2009 to improve knowledge of logistic provision and to support trade dialogue between the two countries.

The project also provided for the procurement of laboratory equipments for which IMCD's staff was trained.

**3.3 Efficiency**

***Economic Internal Rate of Return***

The economic internal rate of return (EIRR) of the HMH and the border roads for trade components is lower than the estimated at appraisal stage. The EIRR for the HMH is estimated at 0.8%, compared to the PAD estimate of 15.7%. The EIRR for the border roads for trade component is estimated at 10.2%, with values ranging from 1.0% and 19.5%. This compared to an EIRR value in the PAD of 21.3%, ranging from 16.3% and 28.7% at appraisal. The table below summarizes the results of the economic analysis.

Economic Evaluation Summary

| Component | Road Section | PAD Estimate | ICR Actual | Difference (%) |
|---|---|---|---|---|
| HMH | Hailar - Wuzhour | 20.5% | 4.1% | -80% |
| | Wuzhour - Jalainur | 13.5% | -0.1% | -101% |
| | Jalainur - Manzhouli | 10.7% | 0.2% | -98% |
| | Subtotal | 15.7% | 0.8% | -95% |
| BRFT | Dayangshu - Baihuapai | 28.7% | 19.5% | -32% |
| | Zhalannuoer - Heishantou | 16.3% | 6.0% | -63% |
| | Yiminsumu - Handdagai | 17.3% | 5.8% | -66% |
| | Alatanelemo - Arihashate | 23.6% | 7.7% | -67% |
| | Amugulong - Erbuduge | 20.4% | 1.0% | -95% |
| | Subtotal | 21.3% | 10.2% | -52% |
| Overall Project | | 17.0% | 3.8% | -77% |

The combined EIRR for the entire project is estimated to be 3.8%, compared to an EIRR at appraisal of 17.0%. The decrease in the EIRR is mainly because of the much lower than estimated traffic volumes on all sections of the HMH as well as on the border roads for trade and the higher than estimated (at appraisal) project costs. Traffic volumes in 2009 on HMH are around 86% lower than the ones estimated at appraisal and on the border roads for trade are around 48% lower. The actual project costs of HMH is around 17% higher than the appraisal estimates, while the actual costs of the border roads for trade is around 47% higher.

**3.4 Justification of Overall Outcome Rating**
Rating: **Moderately Satisfactory**

This assessment is based on a review of achievements for the two main objectives given in section 3.2 and the economic and financial returns presented in section 3.3

Although several key performance indicator benchmarks were not met, it is believed that over time the expected traffic will emerge. For example, in less densely populated areas such as Inner Mongolia, traffic is not induced by local population motorization. It is rather a function of economic activities which were negatively impacted by several factors in 2008 and 2009. As previously mentioned in chapter 3.2, economic activities and trade with Russia have slowed in 2008 and 2009. The increased travel time during construction and the fuel price surge of 2008, also contributed to a shift from road to rail cargo transport.

Improved trade infrastructures of good quality were built and are in place and ready to fulfill their objectives. Proper maintenance is being performed on the HMH.

Ex-post EIRR is 3.8% lower than the initial 17%. Although this is a positive return, it is not sufficient to make this investment economically viable. HMH will not generate sufficient revenues from toll to cover the loan reimbursement; hence IMCD will need to use a small portion of its own budget to repay the investment.

The project remains highly relevant. It has contributed in implementing infrastructure that will promote trade at the national, provincial and rural level. IMCD has acquired new insights into trade facilitation measures, policy and possible reforms.

### 3.5 Overarching Themes, Other Outcomes and Impacts

**(a) Poverty Impacts, Gender Aspects, and Social Development**
Rating: **Satisfactory**

Although not classified as a "poverty reduction project", the project had a poverty alleviation dimension through the Border Road for Trade program component as follows:

- ◊ Accessibility to poor counties and townships and other villages, have been increased by improving about 690 km of local roads (60% more than the original program);
- ◊ The reliability, the vehicle operating cost and the travel time were all significantly improved for all the BRFT, hence allowing easier access for local population to markets, health and education facilities;
- ◊ Growth in economic activity and per capita income as provided in the Client ICR (see Annex 7) in the BRFT area was positively impacted.

**(b) Institutional Change/Strengthening**
Rating: **Moderately Satisfactory**

The institutional development impact, defined as the extent to which the project has improved the IMCD's ability to make optimal use of its human and financial resources is rated as moderately satisfactory. As described in Section 3.2, there were two main areas of focus: i) Training programs and ii) a Trade facilitation study. Although the training program was successful, it was felt that the diagnostic study designed to identify measures to help develop the full potential for cross-border trade between China, Russia and Mongolia fell short of loading to the implementation of effective solutions.

**(c) Other Unintended Outcomes and Impacts (positive or negative)**

None

### 3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

Not applicable

## 4. Assessment of Risk to Development Outcome
Rating: **Moderate**

The project aimed at promoting trade by improving the efficiency and cost effectiveness of the transport infrastructure to support the social and economic development of the Inner Mongolia Autonomous Region. The risk that the development outcome will not be reached is moderate for the following reasons:

- ◊ The physical investments have resulted in good transport infrastructure for the HMH, the BRFT and the CTT that are being used for the benefit of the targeted population;
- ◊ Traffic in these corridors, although significantly lower than anticipated, will grow with reduced vehicle operating costs and fewer accidents once there has been an improvement in the overall economic environment;
- ◊ BRFT have shown a positive impact on per capita income for the various regions they serve and this increase is expected to be sustained.

Considering the overall quality of civil works for HMH and the BRFT, routine and periodic maintenance budget will be reduced, and is considered to be at sustainable levels since it do not represent a significant portion of IMCD's total revenues (less than 2%), even though user charges are significantly lower than anticipated.

## 5. Assessment of Bank and Borrower Performance

### 5.1 Bank Performance

**(a) Bank Performance in Ensuring Quality at Entry**

Rating: **Moderately Satisfactory**

The Bank's Quality Assurance Group did not review the project for quality at entry.

The task team ensured that the project objectives were consistent with the Government of China and Bank's strategies. The project components, both physical and institutional, effectively addressed the major issues identified in the CAS and the Governments five year plan. The Bank team was led by an experienced highway engineer and included specialists covering environment, social/resettlement, economics, rural roads, highway engineering, institutional strengthening, and international trade regulations. Potential risks were identified. Project components were well defined and optimized. The Bank's safeguards policies and rules were followed. However, several technical issues (baseline values, traffic forecast, geological surveys) were insufficiently scrutinized which led to the moderately satisfactory rating above. Preventing such issues will require more thorough verifications, especially in less densely populated provinces in China. If any doubt arises from the validity of data, an independent international audit by a specialist is recommended. Related to this has been the problem that the PDO indicators were set too high because they related to impacts that were beyond the control of the project such as trade relations between China and Russia and the general economic climate.

**(b) Quality of Supervision**

Rating: **Satisfactory**

The Bank's supervision is rated satisfactory. Over the duration of the supervision phase the project had three different task team leaders (TTL). The first one was responsible for preparation of the project appraisal; loan and project agreement between 2003 and 2005. The second TTL was responsible for the first 2 years (2005-07) of implementation, while the third one supervised the final three years of implementation, closed the project and led the project evaluation. The TTL management transition went relatively smoothly, with previous TTL providing support and advice to the next one.

The Bank's policies and procedures were applied consistently. World Bank missions were conducted in a professional and constructive manner. Mission teams included experts needed to discuss relevant supervision topics and issues. The timing of missions (on average twice a year) was appropriate and comments received from IMCD staff indicated a respectful working relationship and flexible approach by Bank staff. Aide Memoires, Management Letters, ISRs and other project communications and documents were completed in a timely manner with clear references to needed actions covering all aspects of project component, safeguards and fiduciary issues.

**(c) Justification of Rating for Overall Bank Performance**
Rating: **Moderately Satisfactory**

The overall Bank performance is rated moderately satisfactory. The rating for overall Bank performance is based on the moderately satisfactory quality at entry and the satisfactory quality of supervision. Although the project was highly relevant with the CAS, some technical aspect (traffic forecast, cargo volume forecast and geological surveys) of the project would have benefited from an independent audit which could have led to design changes that would have contributed to a more successful project. The supervision team paid adequate attention to compliance with the Bank policies on environment and resettlement. The advice of the preparation and supervision team was appreciated and generally followed by the borrower.

**5.2 Borrower Performance**
**(a) Government Performance**
Rating: **Satisfactory**

The satisfactory performance is based on the commitment of both the central and Inner Mongolia government to i) support the project throughout its implementation, ii) to deliver within the agreed deadlines good quality reports and project outputs; and (iii) show strong and continuous commitment to complete all project components, including the CTT and institutional development components.

**(b) Implementing Agency or Agencies Performance**
Rating: **Satisfactory**

**Implementing agency**
**Inner Mongolia Communications Department (PMO)**

The performance of the implementing agency was satisfactory. IMCD demonstrated continuous commitment to achieving the project objectives, including not only construction, but also institutional development through project financed studies, workshops and training programs. Construction of the HMH, BRFT and CTT was completed in due time and the quality of the engineering work was high. Recommendations made during the missions and field visits were taken into account.

As in the previous Inner Mongolia Highway Project, significant variations orders and cost overruns led to some delays in the approval procedures of IMCD. It is reiterated, in this ICR, that to avoid long delays in the approval of contract changes and the resulting payments to contractors, Inner Mongolia will need a simplified, yet efficient internal clearance procedure and a streamlined approval process between multiple government agencies.

This satisfactory rating is also based on the excellent communication lines between IMCD and the Bank, and between IMCD and other government agencies (MOC, MOF, etc) involved in the project which helped solve issues arising during project implementation in a timely fashion.

**(c) Justification of Rating for Overall Borrower Performance**
Rating: **Satisfactory**

The overall borrower performance is rated as satisfactory. This is based on the ratings of the government and the implementing agency and also considering that all the original civil works

and institutional components were completed and most project outcomes are deemed to be sustainable considering once: 1) trade relations between Russia and China improves; 2) the overall economic situation recovers; and 3) the full potential of the Hailar CTT comes to fruition, trade, traffic volume and toll revenues on the HMH should increase significantly.

## 6. Lessons Learned

**International independent audit of current traffic volumes and projected traffic growth.** This project has highlighted the optimistic estimation of current traffic and estimated traffic growth; a major economic factor in the evaluation of the viability of transport infrastructure. Although this issue is seldom raised in previous ICR, it is often the subject of discussions with the Bank's client at project identification and appraisal. The PAD does mention traffic counts, Origin/Destination survey, and even an independent review of forecast by a transport institute in Beijing. Hence it is difficult to explain the significant difference (83% lower) between traffic forecast and actual traffic. It is recommended that new projects in low population density areas such as the northern provinces of China, would benefit from an independent international audit of actual and forecasted traffic, supported by an independent traffic count. Based on audited traffic results at identification and appraisal stages, the Bank Team would be better equipped to discuss design standards and construction approach.

**Reduced and more focused use of international supervision consultants for shorter, more specific or specialized technical tasks.** The contribution of the international consultant (IC) was mainly related to project management support and training. This support was however minimal and it is suggested that because: i) most international consultants lack sufficient knowledge of Chinese standards and technical challenges, and ii) construction quality in China is generally high, IC activities should be limited to specific short term technical or specialized tasks.

**Climate changes and Improved Geological / Hydrogeological surveys at design stage**. With current trends in climate change, we are prone to see unusual weather conditions such as prolonged heavy rain. This situation coupled with insufficient geotechnical information could lead to an increase in unfavorable soils conditions. Current boreholes (500 meters apart) intervals needs to be adjusted based on soil variation and it is suggested the geotechnical survey standards be upgraded to take into account the climate conditions of China's Northern provinces. In these provinces frost penetration in road structure and subgrade can create important damages which are all well documented in the current international geotechnical literature. Proper soil compaction or consolidation, adequate drainage and sufficient insulation must all be considered at design stage in order for a road to survive long winters. Design of projects should also take into consideration climate changes which could mean higher rainfall and colder winter temperatures.

**Further efforts needed to overcome institutional barriers and achieve better coordination across department involved in road transport.** The inclusion of reform or policy related issues within a project often face problems because their implementation often falls outside the jurisdiction of the implementation institution. This is the case for the trade facilitation component for which most of the discussion and work needed to be done at the national level. In the Inner Mongolia Highway and Trade Corridor Project, this situation was present in the elaboration of the trade facilitation study and the implementation of its recommendations. Road and CTT as trade vectors are locally built and managed, while trade policies that can significantly affect their performance are managed at the national level. There is no single recipe for achieving such coordination, but it has been demonstrated in previous projects that the establishment of multi-agency coordination teams have been the key to successfully address these challenges.

**Simplified internal clearance procedure for variation orders.** Internal delays in the approval of variation orders have led to late payments to contractors, hence delays in finalizing contracts. A simplified yet efficient internal clearance procedure in Inner Mongolia is needed to streamline the approvals process between agencies to avoid long delays. Such a process could be based on a two step approach: The first step being an authorization to perform the work based on technical justification and a work cost estimate, while the second step is a final consent that includes final cost approval based on the agreed price with the supplier/contractor.

## 7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners

### (a) Borrower/implementing agencies

IMCD has reviewed the ICR and found the content to be acceptable. They indicated a number of editorial changes which have been reflected in the text.

### (b) Cofinanciers

NONE

### (c) Other partners and stakeholders

NONE

## Annex 1. Project Costs and Financing

### (a) Project Cost by Component (in USD Million equivalent)

| Components | Appraisal Estimate (USD millions) | Actual/Latest Estimate (USD millions) | Percentage of Appraisal |
|---|---|---|---|
| 1) Construction of the Hailar-Manzhouli Highway | 172.69 | 214.53 | 124% |
| 2) Border Roads for Trade | 51.30 | 117.02 | 228% |
| 3) Cargo transfer terminal and trade facilitation program | 2.64 | 4.93 | 172% |
| 4) Institutional strengthening and training | 0.67 * | 0.39 | 58% |
| | | | |
| **Total Baseline Cost** | 227.30 | 336.87 | 148% |
| Physical Contingencies | 20.75 | | |
| Price Contingencies | 5.93 | | |
| **Total Project Costs** | 253.98 | 336.87 | 133% |
| Interest during construction | 8.18 | | |
| Front-end fee IBRD | 0.50 | 0.50 | 100% |
| **Total Financing Required** | 262.66 | 337.37 | 128% |
| | | | |

*** Project appraisal estimate for component 4) of 1.17M US$ included a 0.5M US$ for equipment already included in 172.69M US$ of component 1).**

### (b) Financing

| Source of Funds | Type of Cofinancing | Appraisal Estimate (USD millions) | Actual/Latest Estimate (USD millions) | Percentage of Appraisal |
|---|---|---|---|---|
| Borrower | | 162.66 | 237.37 | 146% |
| International Bank for Reconstruction and Development | | 100.00 | 100.00 | 100 |

## Annex 2. Outputs by Component

| Project Development Objectives | Monitoring Indicators | Planned results for 2009 (PAD 2005) | Actual results on completion (2009) | ICR/PAD |
|---|---|---|---|---|
| Promote trade expansion by providing convenient transport and relevant trade facilitation | **HMH corridor performance** | | | |
| | **Reduced travel time** | 100 minutes | 120 minutes | 120% |
| | **AADT of Hailaer-Manzhouli (MTE)** | | | |
| | Hailaer-Chenbaerhuqi | 6800 | 1198 | 17.6% |
| | Chenbaerhuqi-Wuzhuer | 4600 | 1002 | 21.8% |
| | Wuzhuer-Chagang | 3400 | 754 | 22.2% |
| | Chagang-Zhalainuoer | 2700 | 487 | 18.0% |
| | Zhalainuoer-Manzhouli | 7500 | 1151 | 15.3% |
| | Manzhouli-port | 4000 | 230 | 5.8% |
| | **Increased cargo volume at the border** | | | |
| | **Cargo volume - highway (1000t□** | | | |
| | Import | 850 | 12,4 | 1.5% |
| | Export | 100 | 218,9 | 218.9% |
| | Total | 950 | 231,3 | 24.3% |
| | **Cargo volume - railway (1000t□** | | | |
| | Import | 12500 | 21315 | 170.5% |
| | Export | 2450 | 2365 | 96.5% |
| | Total | 14950 | 23350 | 156.2% |
| | **Share by mode of Import/Export (%)** | | | |
| | Import-Railway | 93,7 | 99,9% | 106.7% |
| | Import-Highway | 6,3 | 0,1% | 0.9% |
| | Export-Railway | 96,1 | 91,5% | 95.2% |
| | Export-Highway | 3,9 | 8,5% | 217.2% |
| | **Cargo processing at CTT□1000T□** | 350 | 0 | 0% |
| | **BRFT performance** | **Planned results for 2008 (PAD 2005)** | **Actual results on completion (2008)** | |
| | AADT on BRFT (MTE per day) | | | |
| | Dayanshu-Baihuapai | 1,800 | 630 | 35.0% |
| | Zhalainuoer-Heishantou | 1,200 | 123 | 10.3% |
| | Yimin-Handagai | 1,320 | 314 | 23.8% |
| | Alatanemole-Arihashate | 430 | 246 | 57.2% |
| | Amugulang-Edbuduge | 610 | 73 | 12.0% |
| | Genhe-Mangui * | N/A | N/A | N/A |
| * The Genhe-Mangui road was added to the BRFT component in 2006 | | | | |

| Intermediate Results | Monitoring Indicators | Planned results for 2009 (PAD 2005) | Actual results on completion (2009) |
|---|---|---|---|
| Component 1 : HMH improved capacity | Progress of work completed (%) | 100% | 100% |
| Component 2 : BRFT improvement to handle increasing traffic volume | Progress of work completed (%) | 100% | 100% |
| Component 3 : CTT construction and trade facilitation | Progress of work completed (%) | 100% | 100% |
| Component 4: Built up institutional capacity | Domestic trained staff (person-months) | 294 | 454 |
| | Overseas trained staff (person-months) | 76 | 28 |
| | Diagnostic study (%) | 100% | 100% |

**Component 1: HIGHWAY CAPACITY EXPANSION – (PAD estimate US$172.69 million, ICR actual: US$214.53 million)**

**a) Construction of the Hailar-Manzhouli Highway – (PAD estimate: 177km - US$163.38 million, ICR actual: 178.73km - US$210.41 million)**

The 190.98-km Hailar-Manzhouli Highway (HMH) has been designed as a four-lane, partially access-controlled highway that could be operated as an open toll highway. It also included two interchanges and three toll stations, service areas, and parking bays, as well as facilities for highway administration and maintenance.

Civil works started in May 2005 and was substantially completed by November 2007, or about 6 months before the scheduled May 2008 initial operation date. The HMH included a 12.25 km section financed by private funds; hence the WB funded highway section was 178.73km.

This project component included a challenging 6.8 km highway construction into the Erka wetland. Despite various unfavorable geological and weather conditions (heavy rain in the summer and short construction season), which later translated into significant work variations and cost increases, the quality of the final work was rated very good.

Important delays were recorded in approving variation orders and reporting status of cost overruns. This situation was mostly due to slow and stringent internal clearance procedures

Final cost (including land acquisition, resettlement and environmental protection costs) of the highway is US$210.41 million which represents a 29% increase over the appraisal estimate.

The construction of this strategic highway link between Hailar and Manzhouli, while reducing travel time by about 33% (or about 60 minutes), did not succeed in promoting additional trade with Russia has shown in the following table.

| Outcome indicators | Base year 2003 | | | Year 2009 | | |
|---|---|---|---|---|---|---|
| | baseline | actual | Ratio | Target | actual | Ratio 2003-2009 |
| **Travel time（shortest）min.** | 180 | | 0% | 100 | 120 | -30% |
| | | | | | | |
| **Cargo volume at the border – highway (1000t)** | | | | | | |
| Import | 394,2 | 89,3 | 23% | 850 | 12,4 | -86% |
| Export | 43,8 | 186,9 | 427% | 100 | 218,9 | +17% |
| Total | 438 | 276,2 | 63% | 950 | 231,3 | -16% |

It is considered that several events contributed to this lack of trade benefits from improved access to Manzhouli. During the implementation of the project, hardening trade relations between China and Russia including the clamping down on informal trade, the general economic climate and the unavailability of the CTT in Hailar have all contributed to this situation. These events also resulted in significantly less than anticipated traffic volume for which initial estimate were also too optimistic as shown below.

| Outcome indicators | Base year 2003 | | | Year 2009 | | |
|---|---|---|---|---|---|---|
| | baseline | actual | Ratio | Target | actual | Ratio |
| **AADT of Hailaer-Manzhouli (MTE)** | | | | | | |
| Hailaer-Chenbaerhuqi | 3300 | 1689 | 51% | 6800 | 1198 | 18% |
| Chenbaerhuqi-Wuzhuer | 2400 | 1092 | 46% | 4600 | 1002 | 22% |
| Wuzhuer-Chagang | 1800 | 690 | 38% | 3400 | 754 | 22% |
| Chagang-Zhalainuoer | 1700 | 641 | 38% | 2700 | 487 | 18% |
| Zhalainuoer-Manzhouli | 3900 | 1954 | 50% | 7500 | 1151 | 15% |
| Manzhouli-port | 1800 | 750 | 42% | 4000 | 230 | 6% |

Nevertheless, it is anticipated that once trade relations between Russia and China and the overall economic situation improves and the full potential of the Hailar CTT comes to fruition, trade and traffic volume on the HMH should increase significantly.

Considering the overall growth of Inner Mongolia and the small fraction of IMCD's fund flow this project represents, there is no long term risk to the sustainability of the project. However, these data would suggest the need for more modest standards in other part of the network. New projects should conduct proper traffic survey and have an independent audit of the figures provided.

It is worth mentioning that the civil works on HMH also seem to have created a favorable momentum for cargo by rail, which more than doubled over the same period as shown in the following table.

| Outcome indicators | Base year 2003 | | | Year 2009 | | |
|---|---|---|---|---|---|---|
| | baseline | actual | Ratio | target | actual | Ratio 2003-2009 |
| **Cargo volume at the border - railway (1000t)** | | | | | | |
| Import | 9180 | 9170 | 100% | 12500 | 21315 | 132% |
| Export | 1820 | 660 | 36% | 2450 | 2365 | 258% |
| Total | | 9830 | | 14950 | 23350 | 138% |

Operation of the highway was transferred to the Hulumbeir Highway Administration Bureau (supervised by the Eastern High Class Highway Management Division) which is conducting appropriate maintenance operations.

**b) Equipment – (PAD estimate: US$3.94 million, ICR actual: US$0.092 million)**

Two (2) vehicles, 31 office IT equipment, 20 laboratory testing equipments were procured in 2005 for an aggregated value of US$92 664. Procurement of the initially planned maintenance equipment was cancelled.

**c) Supervision of construction – (PAD estimate: US$5.37 million, ICR actual: US$4.03 million)**

The HMH construction was supervised in accordance with FIDIC provision by a supervision team composed of local firms assisted by two international consultants (IC). The IC role was limited to project management training and supporting the client with the preparation of monthly and quarterly progress reports.

**Component 2: BORDER ROADS FOR TRADE – (PAD estimate 431 km - US$51.30 million, ICR actual: 690 km - US$117.02 million)**

Civil works for the BRFT (14 contracts – 5 road sections) started in November 2004 and the initial program was substantially completed by October 2008.

Considering available loan proceeds resulting from lower initial price contract, IMCD requested the addition of the Genhe- Mangui (263 km) road section. This request was approved by a letter of amendment (November 2006) bringing the total length of improved/upgraded road for this component to about 690 km. Ge-Man works started in June 2006 and were completed in October 2009.

Final cost of the BRFT is US$ 117.02 million which is 168% above the initial appraisal estimate. This significant increase of US$ 65.72 million in contract costs are related to IMCD's decision to (1) upgrade Yimin-Handagai from class III to class II (US$18.55 million or 28%); (2) the added GeMan BRFT (US$37.89 million or 58%); and (3) work variations such as soft soil treatment, changes in borrow pits location for other BRFT (US$ 9.28 million or 14%).

Overall quality of work was good. Per capita income (PCI) also rose significantly between 2003 and 2008 in the vicinity of the region served by the BRFT ranging to as much as 287% for villagers of the Eluncun banner along the Dayangshu - Baihuapai road.

Baseline and targeted traffic volumes were also too optimistic with actual values for 2008 being on average, 72% lower than anticipated

**Component 3: CARGO TERMINAL AND TRADE FACILITATION STUDY – (PAD estimate US$2.64 million, ICR actual: US$4.93 million)**

**a) Cargo terminal construction - (PAD estimate US$2.54 million, ICR actual: US$4.90 million)**

Construction of the initial 9610 m2 Cargo Transfer Terminal phase started in June 2006 and was completed in October 2008. This CTT (not financed by WB) was to provide the facilities and services necessary for cargo transfer between Russian and Chinese trucks as well as for cargo distribution and consolidation.

In October 2008, Hulumbeir Transport Management Division (HTMD) decided to move forward with the privatization of the CTT to Tongda Logistic Service Co. Ltd. which undertook a first phase expansion of 6300m2 that was to be followed in 2010 by a second phase 4500 m2 expansion. CTT operations were scheduled to start in August 2010.

**b) Study on measures to promote trade - (PAD estimate US$0.10 million, ICR actual: US$0.03 million)**

This diagnostic study was to identify measures to help develop the full potential for cross-border trade between China, Russia and Mongolia. The study TOR was approved in 2005 and the study entrusted to Jilin University and was completed in September 2007 for US$33,951.

The report is well organized and clearly illustrates the increasing demand for the new Highway, border crossing infrastructures, and the cargo transfer terminal (CTT) facility, as well as the training requirements. The report however fell short of addressing major trade issues such as intermodalism, trade programs and CTT operations, infrastructure compatibility, and regulations between trade partners.

In order to elaborate on some of these trade issues, a study tour to Russia was completed in August 2009 to improve knowledge of logistic provision and to support trade dialogue between the two countries.

**Component 4: INSTITUTIONAL STRENGTHENING AND TRAINING – (PAD estimate US$0.67 million, ICR actual: US$0.39 million)**

The training program was satisfactorily completed in 2008 and 2009. The initial program was to include overseas study tours (36 person-months); abroad training courses (40 person-months); and domestic courses (294 person-months). The internal training program proved to be an effective tool in transferring technology and management know-how, and gave staff exposure to new concepts and modern construction procedures. A total of 454 and 28 person-months of training were received respectively locally or abroad.

| Domestic training | | | |
|---|---|---|---|
| **Training activity** | **Training Description** | **Number of trainees** | **Nb of Man-Months** |
| 1 | Contract Management & International Procurement Bidding | 4 | 2 |
| 2 | File Management | 1 | 1 |
| 3 | Financial Management | 14 | 8 |
| 4 | Resettlement and Compensation Management | 30 | 7 |
| 5 | Highway Construction Management | 150 | 43 |
| 6 | Environmental Protection | 230 | 45 |
| 7 | Software Management | 40 | 10 |
| 8 | Project Management | | |
| 9 | Highway Administration | 175 | 65 |
| 10 | Road Maintenance | 320 | 160 |
| 11 | Continuing Education | 120 | 28 |
| 12 | Trade Facilitation Study | 10 | 10 |
| 13 | Toll Management | 150 | 75 |
| | | 1244 | 454 |

| Overseas training | | | | |
|---|---|---|---|---|
| **Training activity** | **Training Description / Location** | | **Number of trainnees** | **Nb of Man-Months** |
| 1 | Trade Facility | France | 12 | 6 |
| 2 | Financial Management | England | 10 | 5 |
| 3 | Project Financing Management | South Africa | 10 | 5 |
| 4 | Human Ressources and Auditing | Australia | 12 | 9 |
| 5 | Trade Facilitation | Russia | 6 | 3 |
| | | | 50 | 28 |

The training covered a wide range of subject related to highway construction, supervision, maintenance and management, financial management, project management, toll management, trade facilitation, human resources and auditing, procurement, environmental monitoring, resettlement and compensation.

Overseas training reports were prepared by trainees and submitted to the Science and Education division of IMCD Human Resources department for potential development opportunities and dissemination. Trainees are expected to disseminate finding at domestic seminars and workshops and some are maintaining contact with specialist abroad.

## Annex 3. Economic and Financial Analysis

### Introduction

At project appraisal, the economic analysis comprised the evaluation of the two major components of the project: (a) the construction of the Hailar - Manzhouli Class I highway (HMH), with three sections Hailar-Wuzhour, WuzhourJalainur and Jalainur-Manzhouli that total 178.73 km; and (b) upgrade and improvement of five rural roads (432 km) under the Border Roads For Trade Component (BRFT).

The analysis is based on the actual and forecasted operating data on traffic, road user costs savings (transport user benefits comparing the old and new roads), and project economic cost. The ICR economic evaluation first replicated the appraisal evaluation, obtaining the same results with the appraisal estimates, and then the ICR evaluation considered the actual values.

### Traffic

#### *Traffic on the HMH*

The traffic volume on the Hailar - Manzhouli Highway is much lower than expected at appraisal. The HMH works started in 2005 when it was upgraded to a Class I road standard. In 2009, actual traffic volumes on HMH were on average about 86% lower than the ones estimated at appraisal (see Table 1). The actual traffic is lower due to the fact that the export trade traffic going through the highway has not increased as expected. The toll rates are not considered to be affecting the low traffic.

**Table 1: 2009 Traffic on the New HMH (vehicles per day)**

| Road Section | PAD Estimate | ICR Actual | Difference (%) |
|---|---|---|---|
| Hailar – Wuzhour | 4,435 | 1,102 | -75% |
| Wuzhour – Jalainur | 2,667 | 536 | -80% |
| Jalainur – Manzhouli | 4,770 | 1,266 | -73% |

#### *Traffic on the BRFT*

The five improved rural roads comprise the Dayangshu – Baihuapai, Zhalannuoer – Heishantou, Yiminsumu – Handdagai, Alatanelemo – Arihashate, and Amugulong - Erbuduge roads. The first two roads were upgraded to Class II road standard, and the remainder three to Class III road standard.

In 2009, the traffic volume for the five roads was lower than the ones estimated at appraisal stage. The average traffic for the five roads was about 48% lower than the ones estimated at appraisal, ranging from a 25% to 74% reduction in traffic. The average annual traffic growth rate on the roads from 2005-2009, grew at an annual rate of 15%. Table 2 presents the 2009 BRFT traffic.

**Table 2: 2009 Traffic on Border Roads (vehicles per day)**

| Road Section | PAD Estimate | ICR Actual | Difference (%) |
|---|---|---|---|
| Dayangshu – Baihuapai | 1,085 | 747 | -31% |
| Zhalannuoer – Heishantou | 389 | 164 | -58% |
| Yiminsumu – Handdagai | 401 | 300 | -25% |
| Alatanelemo – Arihashate | 310 | 151 | -51% |
| Amugulong – Erbuduge | 316 | 81 | -74% |

### *Road User Costs*

The Road User Costs (RUC) savings compares the transport user benefits on the old and new road for different vehicle type. The RUC savings consists of time and vehicle operation costs. The time savings are mainly based on the difference in road length between the old and new road and traffic volume, i.e. high traffic volumes can reduce speed and increase travel time. The vehicle operation costs savings are mainly based on savings in fuel consumption, depreciation, vehicle maintenance costs, etc, which also depend on the road length, road conditions, and traffic volume and composition. With help of the HMD-4 model, the savings on the old and new road are calculated for seven vehicle types: small bus, medium bus, big bus, small truck, medium truck, big truck, and trailer.

### *Project Costs*

The project costs over the evaluation period consist of costs for construction civil works, routine maintenance costs, and for the HMH management costs. The construction civil works have a large impact on the final project costs. The civil works costs for the HMH are given on the Table 3. The actual civil costs works are around 17% higher than the appraisal estimates. The 190.98 kilometer HMH has been designed as a four-lane, partially access-controlled highway that could be operated as an open toll highway. It also included four interchanges and three toll stations, service areas, and parking bays, as well as facilities for highway administration and maintenance. Civil works started in May 2005 and was substantially completed by November 2007 or about 6 months before the scheduled May 2008 initial operation date. The HMH included a 12.25 km section financed by private funds; hence the World Bank funded highway section was 178.73km and the actual unit construction cost is RMBY 8.84 million per kilometer.

**Table 3: HMH Civil Works Costs (RMB Million)**

| Road Section | PAD Estimate | ICR Actual | Difference (%) |
|---|---|---|---|
| Hailar – Manzhouli | 1,352.0 | 1580.0 | 17% |

The civil works costs for the BRFT are given on the Table 4. The actual civil costs works are around 47% higher than the appraisal estimates. The cost of the Yiminsumu – Handdagai road is 161 percent higher than estimated at appraisal because it was upgraded to Class II road standard instead of Class III standard as originally planned. The cost of the Alatanelemo – Arihashate road is 59% higher due to additional subgrade and pavement works.

**Table 4: BRFT Civil Works Costs (RMB Million)**

| Road Section | PAD Estimate | ICR Actual | Difference (%) |
|---|---|---|---|
| Dayangshu – Baihuapai | 109.5 | 132.9 | 21% |
| Zhalannuoer – Heishantou | 135.0 | 128.2 | -5% |
| Yiminsumu – Handdagai | 88.4 | 230.4 | 161% |
| Alatanelemo – Arihashate | 44.0 | 69.8 | 59% |
| Amugulong – Erbuduge | 16.4 | 16.9 | 3% |
| Total | 393 | 578 | 47% |

Table 5 shows the actual civil works costs per kilometer.

**Table 5: BRFT Actual Civil Works Costs per Km (RMB Million/km)**

| Road Section | Length (km) | Cost (M RMB/km) |
|---|---|---|
| Dayangshu – Baihuapai | 74.2 | 1.79 |
| Zhalannuoer – Heishantou | 135.9 | 0.94 |
| Yiminsumu – Handdagai | 118.0 | 1.95 |
| Alatanelemo – Arihashate | 81.7 | 0.86 |
| Amugulong – Erbuduge | 21.5 | 0.79 |
| Total | 431.2 | 1.34 |

## Economic Internal Rate of Return

The economic internal rate of return (EIRR) of the HMH and the BRFT roads is based on the actual values given above. The actual EIRR for all roads are lower than the ones estimated at appraisal stage due to higher than expected civil work costs and lower actual traffic. The EIRR for the HMH is estimated at 0.8%, compared to the PAD estimate of 15.7%. The EIRR for the BRFT component is estimated at 10.2%, with values ranging from 1.0% and 19.5%. This compared to an EIRR value in the PAD of 21.3%, ranging from 16.3% and 28.7% at appraisal. Table 6 summarizes the results of the economic analysis. The combined EIRR for the entire project is estimated to be 3.8%, compared to an EIRR at appraisal of 17.0%.

**Table 6: Economic Evaluation Summary**

| Component | Road Section | PAD Estimate | ICR Actual | Difference (%) |
|---|---|---|---|---|
| HMH | Hailar - Wuzhour | 20.5% | 4.1% | -80% |
| | Wuzhour - Jalainur | 13.5% | -0.1% | -101% |
| | Jalainur - Manzhouli | 10.7% | 0.2% | -98% |
| | Subtotal | 15.7% | 0.8% | -95% |
| BRFT | Dayangshu - Baihuapai | 28.7% | 19.5% | -32% |
| | Zhalannuoer - Heishantou | 16.3% | 6.0% | -63% |
| | Yiminsumu - Handdagai | 17.3% | 5.8% | -66% |
| | Alatanelemo - Arihashate | 23.6% | 7.7% | -67% |
| | Amugulong - Erbuduge | 20.4% | 1.0% | -95% |
| | Subtotal | 21.3% | 10.2% | -52% |
| Overall Project | | 17.0% | 3.8% | -77% |

## Annex 4. Bank Lending and Implementation Support/Supervision Processes

**(a) Task Team members**

| Names | Title | Unit | Responsibility/ Specialty |
|---|---|---|---|
| **Lending** | | | |
| Yi Dong | Sr. Financial Management Specialist | EAPFM | Financial audit |
| Yasuhiro Kawabata | Consultant | EXTTK | Environment |
| Xiaoping Li | Senior Procurement Specialist | AFTPC | Procurement |
| Naoya Tsukamoto | Sr. Environmental Engr. | EASEN-HIS | Environment |
| Peishen Wang | Consultant | EASCS | Resettlement/Social |
| Jing Xu | Team Assistant | EACCF | |
| Dawei Yang | Consultant | EASCS | Procurement |
| Han-Kang Yen | Research Analyst | EASTE - HIS | Trade |
| Chaohua Zhang | Sr. Social Sector Spec. | SASDS | Resettlement/Social |
| **Supervision/ICR** | | | |
| Alain M. Dube | Consultant | EASCS | TTL / ICR |
| Yiren Feng | Environmental Spec. | EASCS | Environment |
| Boping Gao | Consultant | EASCS | Transport |
| Yi Geng | Sr. Financial Management Specialist | EAPFM | Financial audit |
| Cornelia Klijn | Junior Professional Associate | EASTE - HIS | ICR |
| Yan Lu | Transport Specialist | EASCS | Transport |
| Teresita Ortega | Program Assistant | EASIN | Admin. Assistant |
| Wen Pan | Consultant | EASTE - HIS | Transport |
| Michel Savard | Consultant | EASTE - HIS | Transport / ITS |
| Sreypov Tep | Program Assistant | ECSHD | Admin. Assistant |
| Robert Louis Wallack | Consultant | EASCS | Trade specialist |
| Peishen Wang | Consultant | EASCS | Resettlement/Social |
| Haiyan Wang | Finance Officer | CTRDM | Financial audit |
| Hongkun Yang | Consultant | EASCS | Transport |
| Dawei Yang | Consultant | EASCS | Procurement |
| Songling Yao | Social Development Spec. | EASCS | Resettlement/Social |
| Jun Zeng | Social Development Spec. | EASCS | Resettlement/Social |
| Youlan Zou | Consultant | EASCS | Transport |

**(b) Staff Time and Cost**

| Stage of Project Cycle | Staff Time and Cost (Bank Budget Only) | |
|---|---|---|
| | No. of staff weeks | USD Thousands (including travel and consultant costs) |
| **Lending** | | |
| FY03 | | 40.64 |
| FY04 | | 224.03 |
| FY05 | | 125.06 |
| **Total:** | | 389.73 |
| **Supervision/ICR** | | |
| FY05 | | 0.73 |
| FY06 | | 53.14 |
| FY07 | | 66.94 |
| FY08 | | 50.59 |
| **Total:** | | 171.40 |

**Annex 5. Beneficiary Survey Results**
*None*

## Annex 6. Stakeholder Workshop Report and Results

*None*

**Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR**

**PRC World Bank Financed Inner Mongolia**
**Transport and Trade Corridor Project**

# Project Implementation Completion Report

Loan No. **Ln 4765-CHA**

Inner Mongolia Hai-Man Highway Construction and Management Office

August 2010

1. Project Background
2. Brief Description of the Project Objectives and Components.
3. Assessment of the Achievement of Project Development Objective
4. Outputs of Project Components
5. Impact on Institutional Development
6. Justification of Sustainability of the Project Achievements
7. Arrangements for Operation and Future Maintenance of the Assets
8. Evaluation of the Performance of the World Bank
9. Evaluation of the Performance of the Borrower and Implementing Agencies
10. Lessons Learned

**1□Project Description**

**1.1 Name of Project**

Name□World Bank Financed Inner Mongolia Transport and Trade Corridor Project Loan No.□4765-CHA

The Board of the World Bank has approved to provide loan of 100million US dollars for the Project on Feb 15, 2005□Loan Agreement and Project Agreement have been signed between Ministry of Finance and the World Bank on May 18, 2005□the project got effective on July 21, 2005□and closing date of the project was on June 30, 2010.

**1.2 Components of the project□**

1） **Construction of Class I highway** from Hailaer to Manzhouli with the total length of 190.98km□19.23km link road of Class III to East Wuzhuer□1.168km port cargo transport passage□promoted the development and booming of border trade which is benefited for further development of local economy.

2） **Construction of 6 road networks**(Highway Network Improvement Program)□total length 691km□which have improved the capabilities of 4 seasonal land ports between China and Russia, China and Mongolia and meanwhile facilitate the travel condition for the residents from the remote area.
□1□Class II highway from Dayangshu—Baihuapai ,66.05km□link road 8.13km□
□2□Class II highway of Yimin-Handagai 101.183km□link road 16.8km□
□3□Class III highway of Zhalainuoer to Heishantou 135.92km;
□4□Class III highway of Alatanemole to Arihashate port 81.66km;
□5□Class III highway of Amugulang to Ebuduge 21.45km;
（6）Class III highway of Genhe——Mangui 260km;

3）**Construction of Cargo Terminal Transfer** station (CTT) for import and export, facilitates the collection, distribution, dispatch of cargo, and promote trade development.

4）**Purchasing of equipment**：Used for the highway maintenance under bad weather condition, including the management and testing equipment.

5）**Training of staffs**：including domestic and overseas training on the subjects of construction management, highway maintenance, environmental protection, trade facilitation, human resources development and utilizing, as well as the training for financial management etc.

6）**Trade subject study**： Study the promote function of transport facilitation of Hulunbeier to the regional economy and border trade, and the adaptability of border trade.

**2. Objective and main content of the project**

The main objective of the project is to make full use of the transport infrastructures to promote the development of international trade in Inner Mongolia, especially in Hulunbeier. The project would benefit for the overall development of Hulunbeier to become the main trade port with Russia and Mongolia as required by the central government. Therefore, the project would improve the capability of basic transport infrastructures and the road network planning to meet the demand of increasing of border international cargo transportation in Northeast China. To make cargo transfer and trade facilitation program with a view to meet the increasing border trade； Provide technical assistant for Inner Mongolia Communications Department (IMCD) and Hulunbeier city focus on the strengthening of capability of plan, procedure and management in the increasing demand for international trade.

**2.1 Hailaer-Manzhouli highway**

Hailaer to Manzhouli highway is constructed as the standard of Class I with the total length of 190.98km□the width of subgrade is 24m for integrated style, 2×12m for separation style□ the upper layer is adopting 4cm fine grain asphalt concrete, the lower layer is adopting coarse grain asphalt concrete of 8cm. Base level is adopting cement stable gravel of 20cm□sub-base is adopting cement stable gravel of 20cm□the layer is adopting un-screened gravel of 20cm or 40cm. Three toll gates have been constructed. One service area, one parking area, one management sub-center, and two maintenance area also have been constructed under the project.

**2.2 Highway Network Improvement Program**

**1□Class II highway from Dayangshu—Baihuapai**

National highway111 Dayangshu to Baihuapai highway is located within the Eluncun banner with the total length of 66.05km, and link road of 8.13km□the standard would adopt class II highway standard of heavy hilly area with the designed vehicle speed of 60km/hour□the width of subgrade8.5m□the width of pavement 7.0m□the designed loading capability for bridge is highway class II.

**2. Yimin- Handagai highway**

PH202Yimin-Handagai highway is located in the territory of Ewenke and Xinbaerhu banner with the total length of 101.183km□link road16.8km□adopting technical standard of class III flat – rolling area. The designed vehicle speed is 30km/hour□the width of subgrade is 7.5m and the width of pavement is 6.0m□the loading capacity of the bridge is highway class II.

**3□ Zhalainuoer to Heishantou highway**

Zhalainuoer to Heishantou port highway is located at Xinbaerhu left banner with total length of 135.92km□adopting the technical standard of class III flat rolling area with the designed speed of

30km/hour□the width of subgrade 7.5m□the width of pavement 6.0m□loading capacity of bridge is highway class II.

**4. Alatanemole-Arihashate port highway**

Alatanemole to Arihashate highway is located at the Xinbaerhu right banner with the total length of 81.66km□adopting the technical standard of highway class III flat rolling area, with the designed vehicle speed of 30km/hour□the width of subgrade is 7.5m□the width of pavement is 6.0m□the loading capacity of bridge and culverts is highway class II.

**5. Amugulang-Ebuduge highway**

Amugulang-Ebuduge highway is located in Xinbaerhu left banner with total length of 21.45km adopting the highway technical standard of class III flat rolling area with the designed vehicle speed of 60km. The width of subgrade is 8.5m□width of pavement is 7.0m□loading capacity of bridges and culverts is highway class II.

**6. Genhe-Mangui class III highway 259.8km**

Genhe-Mangui highway is located at Genhe city with total length of 259.8km□adopting the highway technical standard of class III heavy hilly area, the width of subgrade is 7.5m□width of pavement is 6.5m. Designed loading capacity of bridges and culverts is highway class II.

**2.3 Cargo transfer terminal of Import/Export trade**

Construct the cargo transfer terminal for import and export trade with the total building area of 9610 square meters, with a view to vacillate the collection, distribution, and dispatch of cargo, promoting the trade development .

**2.4 Procurement of equipment**

The procurement and adjustment of maintenance equipment would improve the level of mechanization for maintenance, strengthen the facilities of management institution and improve the effectiveness of the project.

**2.5 Training**

Through the domestic training and overseas training, the management level of construction management□highway maintenance, and the capability of financial staffs have been strengthened. Through the training of environmental protection, trade facilitation, and development of human resources, the staffs of PMO have got the international experience used for project management and development

**2.6 Trade study**

The objective is to study the promotion function of Hulunbeier transport facilities to the border trade and the adaptability to the regional economy and border trade with a view to promote the trade development of China and the neighbored countries.

**3. Achievement of project objectives**

**3.1 Hailaer-Manzhouli class I highway**

The total length of Hailaer-Manzhouli highway is 190.98 km, the operation started from November 2007.

The travel time after operation has been reduced, and the travel cost also reduced. The traffic volume is under the anticipated value□the rate of traffic volume is oscillating□the increasing trend is not obvious, lower than the anticipated value. The import and export volume of highway is stable, no big increase, but is still lower than the anticipated value.

Achieved Indictors of the Project

| Target | Base year 2003 | | 2007 | | 2008 | |
|---|---|---|---|---|---|---|
| | | actual | plan | actual | plan | actual |
| Travel time□shortest□min. | 180 | | 120 | 150 | 100 | 150 |
| Import/Export cargo from highway□1000t□ | 438 | 276.2 | 826 | 265.3 | 900 | 250.2 |
| Import | 394.2 | 89.3 | 743 | 128.6 | 810 | 58.3 |
| Export | 43.8 | 186.9 | 83 | 136.7 | 90 | 191.9 |
| Import/Export cargo from railway□1000t□ | | 9830 | | | | 23350 |
| Import | 9180 | 9170 | 11280 | 21500 | 11700 | 20170 |
| Export | 1820 | 660 | 2220 | 1780 | 2300 | 3180 |
| Mode of Import/Export | | | | | | |
| Import-Railway | 95.9 | 99.04 | 93.8 | 99.41 | 93.5 | 99.71 |
| Import-Highway | 4.1 | 0.96 | 6.3 | 0.59 | 6.5 | 0.29 |
| Export-Railway | 97.4 | 77.93 | 96.4 | 92.87 | 96.2 | 94.31 |
| Export-Highway | 2.6 | 22.07 | 3.6 | 7.13 | 3.8 | 5.69 |
| Cargo processing at CTT□1000T□ | 72 | | | | 150 | |
| AADT of Hailaer-Manzhouli | 2458 | 1123 | 3801 | 1377 | 4197 | 965 |
| Hailaer-Chenbaerhuqi | 3300 | 1689 | 5400 | 2150 | 6000 | 1257 |
| Chenbaerhuqi-Wuzhuer | 2400 | 1092 | 3700 | 1418 | 4100 | 1054 |
| Wuzhuer-Chagang | 1800 | 690 | 2700 | 1045 | 3000 | 889 |
| Chagang-Zhalainuoer | 1700 | 641 | 2280 | 776 | 2400 | 521 |
| Zhalainuoer-Manzhouli | 3900 | 1954 | 6100 | 1907 | 6800 | 1421 |
| Manzhouli-port | 1800 | 750 | 3200 | 713 | 3600 | 491 |

The gross output value along Hailaer-Manzhouli highway has been increased from 6.1billion yuan in 2003 to 23.6billlion yuan in 2008.

### 3.2 Highway network improvement program

The total length of highway network improvement is 691km, the program has been completed on Oct. 2009□ the road capability in the project area has been greatly strengthened, basic infrastructure get improved, the social and economic benefit also have been improved as well.

**Summary Sheet of Road Network Improvement Program**

| No. | Item | Class | Length（KM） | Date of commence | Date of completion |
|---|---|---|---|---|---|
| 1 | Dayangshu - Baihuapai | Class II | 74.18 | 2004.11.30 | 2006.10.30 |

| | | | | | |
|---|---|---|---|---|---|
| 2 | Yimin - Handagai | Class II | 117.98 | 2005.4.10 | 2007.10.30 |
| 3 | Zhalainuoer - Heishantou | Class III | 135.92 | 2005.4.10 | 2006.10.30 |
| 4 | Alatanemole - Arihashate | Class III | 81.66 | 2005.4.10 | 2006.10.30 |
| 5 | Amugulang - Ebuduge | Class III | 21.45 | 2004.11.30 | 2005.10.30 |
| 6 | Genhe-Mangui | Class III | 259.8 | 2007.6.20 | 2009.10.30 |

**Dayangshu~Baihuapai highway** is located in Eluncun autonomous banner. The construction of the highway would speed up the economy development and improve the local traffic condition by reducing the cost of travel. There are 3 townships along the highway, the living condition of over 150,000 residents has been improved including education and medical service. The construction also has pulled forward the industries of agriculture, tourism, as well as transportation. The economic benefit of social and economic is obvious. The annual per capita income of citizens in Eluncun banner in 2008 is 9825 yuan, which is 183% compared with 2003□the annual per capita income of villagers is 3715 yuan□which is 287% compared with 2003.

**Yimin~Handagai highway** is located at Ewenke autonomous banner and Xinbaerhu left banner. The construction of the project would speed up the economic development of minority nationalities□bring up the service level and traffic capabilities, reducing the transportation cost, promote the local industry development including agriculture, animal-husbandry, forestry and tourism. Promote the local economic construction. The per capita income in Ewenke banner in 2008 is 10726 yuan, which is 179% compared with 2003□the per capita income of villagers is 7050 yuan□which is 168% compared with 2003. The per capita income in Xinbaerhu left banner in 2008 is 10415 yuan, which is 199% compared with 2003. The per capita income of villagers in 2008 is 7085 yuan, which is 228% compared with 2003.

**Zhalainuoer ~ Heishantou highway**, the service level and traffic capacity have been strengthened, the transport cost has been reduced. The development and prosperous of border trade also been promoted. The cargo transportation volume in 2003 is 13108ton□ passenger transportation volume is 7051person time. The cargo transportation volume in 2008 is 15771ton, which is 120% compared with 2003□the passenger transportation volume is 1059 person time, reduced 85% compared with 2003.

**Alatanemole ~ Arihashate highway**, the completion of the project would greatly promote the easy access of the townships. The government of sumu moved to Arihashate, the local economic development has been promoted, contained the damage of vehicles to the grassland, helped the flowing herdsman to settle down□ provide impetus for the development and booming of border ports. The cargo transportation volume in 2003 is 7832ton□ passenger transportation volume is 18932person time; while the cargo transportation volume in 2008 is 20252ton, which is 258% of 2003□ the passenger transport volume is 30712 person time, which is 183% of 2003.

**Amugulang ~Ebuduge highway,** after the completion of the project, the service level and traffic capacity have been strengthened, the transport cost has been reduced. The development and prosperous of border trade also been promoted. Cargo transport volume in 2005 is 25ton□ passenger transportation volume is 105 person times, the cargo transportation volume in 2008 is 56495ton, which is 2259 times compared with 2003, passenger transportation volume is 2317person time□which is 22 times compared with 2005.

**Genhe-Mangui highway**, after the completion of the project, the transportation cost has been greatly reduced, the travel condition also been greatly improved□ the service of education and

medicine has been improved along the 5 townships of over 160,000 residents. The construction also has pulled forward the industries of agriculture, tourism, as well as transportation. The economic benefit of social and economic is obvious. The annual per capita income of Ewnke banner in 2008 is 10645 yuan, which is 177% compared with 2003.

### 3.3 Cargo transfer terminal of import and export trade

The CTT has been completed in Oct 2008, but not operating yet, the direct transfer between China and Russia has not achieved, the full function of CTT has not bring into play.

### 3.4 Procurement of equipment

The procurement of equipment including testing and institution strengthening have been completed on June 2005 which could meet the demand of management and testing.

### 3.5 Training

The plan for overseas training is 85 person-time with total cost of USD 570,000. The training of financial management, project financing management, trade facilities construction, human resources management, border trade facilities have been conducted for 31 person time, with the total cost of USD254698.

### 3.6 Trade study

Trade study has been completed, the construction of CTT would improve the overall trade facilitation in Hulunbeir, facilitie the distribution of cargo and reduce the cost of logistic, improve the overall service level, promote the development of border trade .

## 4. Output of the project

The total traffic flow in 2008 of the three toll gates is 1202286□23.6335million yuan has been collected□ the management cost of toll collection units is 3.8million yuan. The total traffic flow in 2009 of the three toll gates is 1244448□22.7241million yuan has been collected, the management cost of toll collection units is 4.14million yuan.

The payback time in Loan agreement starts from Oct 15, 2010□the total amount payback is USD2770000, which equivalent to RMB18.80million. Total amount pay back in 2011 would be USD5645000, which equivalent to RMB38.38million yuan. Based on the calculation of existing traffic, the toll collection charge would not exceed 35million yuan in 2011□the toll collection charge would be lower than the amount of payback loan. The total amount of the toll collection of the project is lower, and is difficult to meet the amount of payback.

**5. Impact of project to the institution development**

To ensure the smooth implementation of the project, Inner Mongolia Communications Depart set up the "Inner Mongolia Autonomous Region Hai-Man Highway Construction and Management Office ( PMO)" in November 2004□PMO is composed of the experienced staffs from IMCD and Hulunbeier Communications Bureau. Their work is highly efficient including the preparation of the project in the early stage, organize the bidding process of civil works and goods, management of construction of Hailaer-Manzhouli highway, guide the construction management of each sub-components, prepare the method of engineering management and financial management, organize the handover of the project etc. This agency is operated very satisfactory.

After completion of Hai-Man highway□PMO has purchased maintenance machinery and equipment cost 13.55million yuan responsible by Hulunbeier highway administration bureau. There are two maintenance working section responsible for the maintenance of Hailaer-Manzhouli highway to ensure the smooth traffic all year round.

There are three toll gates along Hailaer-Manzhouli highway which have provided 100 employment opportunities.

After completion of road network program of the project, PMO has purchased maintenance machinery costs 4.3million yuan, the distance of maintenance has been increased and has provided over 400 employment opportunities to ensure the smooth traffic all year round.

Hailaer Tongda logistic Company was established on the basis of the Cargo Transfer Terminal mainly handle the business of transportation, warehousing, and management of transport vehicles.

There were 31 person-time overseas survey and training during the implementation of the project. Through these training courses, the experience for project management of the staffs have been greatly improved including planning, financing, construction, consulting services, auditing, environment protection etc.

The domestic training including World Bank financed project management training and domestic project management of 1244 person-time have been conducted. The technical capability of construction and supervision staffs has been improved.

**6.The justification for the sustainable development for the project**

The direct economic benefit is reducing the operation time between Manzhouli and Hailaer. The travel time after completion is 120 minutes compared with 180 minutes before construction. The completion of road networks would facilitate the travel, education, and health services of local residents. Economic benefits and social benefits would be greatly improved. The project is basic infrastructure, which will bring up the development of industry, agriculture, animal husbandry, tourism and transportation industries with the condition and potential for sustainable development.

**7. Operation and maintenance asset management in the future**

The service area and parking area have been handed over to Inner Mongolia Eastern High-grade Highway Administration Division for maintenance and management, however, the operation has

not started yet.□ the toll gates have been handed over to Inner Mongolia Levy Bureau Hulunbeier branch under IMCD□the total vehicle flow in the three toll gates during 2008 is 1202286□collected toll charge of 23.6335million yuan□ the total vehicle flow in 2009 is 244448, collected toll charge of 22.7241million yuan.

**Budget management of project maintenance cost.** It was invested 3.567million yuan for maintenance of Hailaer-Manzhouli highway in 2008, 1.017million yuan for Dayangshu to Baihuapai, 1.563million for Yimin-Handaggai highway; and it was invested 3.567million yuan for the maintenance of Hailaer-Manzhouli highway, 1.054million yuan for Dayangshu-Baihuapai highway, 1.621million for Yimin-Handaggai highway; The maintenance of Zhalainuoer-Heishantou, Alatanemole - Arihashate to Ebuduge, and Genhe-Mangui highway will be responsible by the local maintenance units of each banners. As the impact of local financial income, the maintenance cost has not been invested yet.

## 8. Evaluation of the Performance of Bank

The staffs of the World Bank have provided many beneficial guidance and assistance on the aspects of techniques, management, and staff training, etc. from the preparation to the implementation of the project. They conducted site survey twice a year for inspection and have provided effective comments and suggestion. Their attitude to work is very serious, and their work style is practical and highly effective. Our evaluation of the performance of Bank is very satisfactory.

During the project pre- appraisal in June 2003 to the closing date in June 2010, there have been 3 task managers responsible for the project. The frequent shift of staffs would cause the un-continuous of the management staffs and information exchanges.

## 9. Evaluation of the Performance of the Borrower

The staffs of PMO of Hailaer-Manzhouli highway and Sub-projects of road networks worked very hard, the project goes very smoothly and completed in due time with good quality. The achievements have been acknowledged by the experts of Bank and Inner Mongolia Communications Department.

## 10. Experiences and Lessons learned

1. Involving the staffs those have been working for World Bank financed projects to improve the efficiency. During preparation of the project, PMO involved the experienced staffs from Inner Mongolia Communications Department Foreign Capital Utilizing Office who are familiar with Bank procedure, reduced many roundabout way and speed up the progress of the project; this also has provided better facilitation for the good communication between PMO and World Bank.

2. Through project management, a batch of talents get well understand of the procurement process and method of Bank have been trained.

3. During the preparation and implementation of the project, various units have been involved including Development and Reform Commission, Financial units, Auditing, Environmental protection, Water conservation, Land administration etc. The close cooperation of these units is important condition for successful implementation of the project.

4. The geology survey conducted by design institute is not detailed enough. Geology selection of alignment have not been made, therefore, there are big variation in design.
5. The design of gas station in the service area and parking area need to be conducted by Petroleum Management units, which is more in consistent with the requirements of industry.

6. The lowest price principle of World Bank is not suitable for Chinese situation.

## Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders

None

## Annex 9. List of Supporting Documents

1. The World Bank, *Inner Mongolia Highway and Trade Corridor Project: Project Appraisal Document* (No. 30004-CHA), January, 2005

2. The World Bank, *Inner Mongolia Highway and Trade Corridor Project: Loan Agreement* (No 4567-CHA) between the People's Republic of China and the International Bank for Reconstruction and Development, May 18, 2005

3. The World Bank, *Inner Mongolia Highway and Trade Corridor Project: Project Agreement* (No 4567-CHA) between Inner Mongolia Autonomous Region and the International Bank for Reconstruction and Development, May 18, 2005

4. The World Bank, *Inner Mongolia Highway and Trade Corridor Project, Letter of amendment,* (No 4567-CHA) June 15, 2007

5. The World Bank, *Back to office reports and Aide-memoires of the Inner Mongolia Highway and Trade Corridor Project* from 2005 to 2010

6. The World Bank, *Project Status Report and Implementation Supervision Reports for the Inner Mongolia Highway Project* from 2005 to 2010

7. Inner Mongolia Communication Department, *Work Progress (monthly and quarterly) and Annual Monitoring reports*, from 2005 to 2008.

8. Inner Mongolia Communication Department, *Haiman Highway Traffic & Trade Diagnosis Research Report of Hulunbeir City Inner Mongolia Autonomous Region,* from January 5, 2007.

9. Inner Mongolia Communication Department, *Implementation Completion Report and Summary*, February 2007

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# CHINA
# INNER MONGOLIA TRANSPORT AND TRADE FACILITATION PROJECT
## HULUNBEIER TRANSPORT SYSTEM

HAILAR - MANZHOULI HIGHWAY

RURAL ROAD IMPROVEMENT PROGRAM:

| | | | |
|---|---|---|---|
| 1 | Dayangshu - Baihuapai | 70.5 | II |
| 2 | Yimin - Handagai | 99.0 | III |
| 3 | Heishantou - Zhalainuoer | 158.0 | III |
| 4 | Alatanemole - Arihashate | 82.5 | III |
| 5 | Amugulang - Ebuduge | 19.3 | III |
| 6 | Genhe - Mangui | | |

PROVINCIAL ROADS
NATIONAL ROADS
RAILROADS
AIRPORTS
RIVERS
SELECTED CITIES
LEAGUE (PREFECTURE) CAPITALS
COUNTY (XIAN) BOUNDARIES
PROVINCE BOUNDARIES
INTERNATIONAL BOUNDARIES



OCTOBER 2010

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CHINA

# INNER MONGOLIA TRANSPORT AND TRADE FACILITATION PROJECT

## HAILAR - MANZHOULI HIGHWAY

- PROPOSED HIGHWAY
- INTERCHANGES
- REST AREAS
- KILOMETER POSTS (K-470)
- CARGO TRANSFER CENTER
- NATIONAL ROADS
- PROVINCIAL ROADS
- RAILROADS
- RIVERS
- LAKES/ RESERVOIRS

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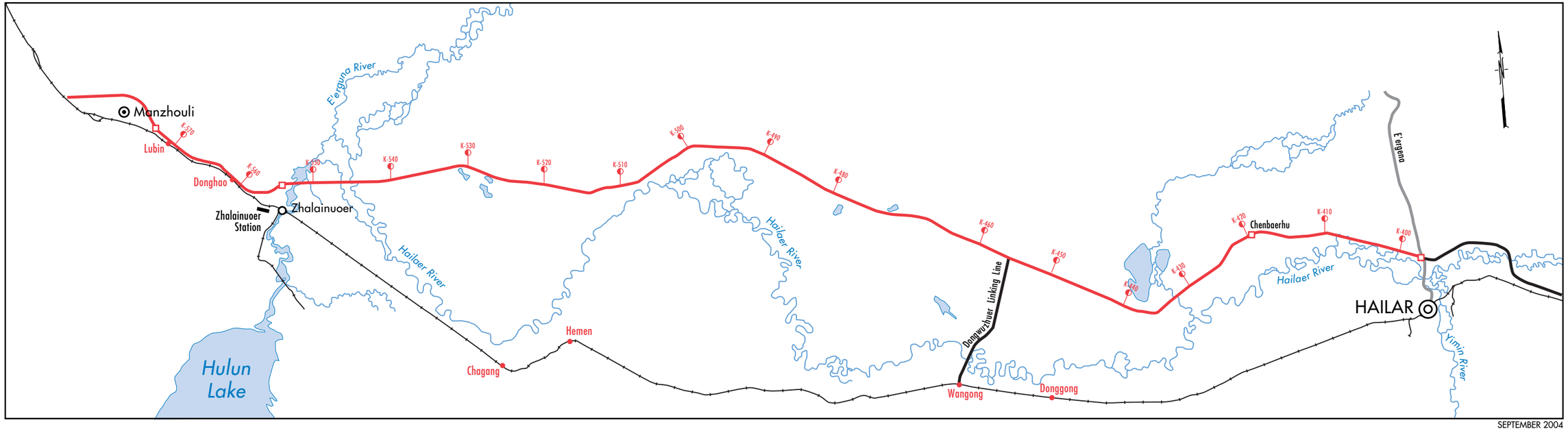


SEPTEMBER 2004