

ASIAN DEVELOPMENT BANK

TAR: PRC 39038

TECHNICAL ASSISTANCE

TO THE

PEOPLE'S REPUBLIC OF CHINA

FOR PREPARING THE

HEILONGJIANG ROAD NETWORK DEVELOPMENT PROJECT

June 2005

CURRENCY EQUIVALENTS

(as of 1 May 2005)

| | | |
|---------------|---|------------|
| Currency Unit | – | yuan (CNY) |
| CNY1.00 | = | \$0.1208 |
| \$1.00 | = | CNY8.2765 |

ABBREVIATIONS

| | | |
|------|---|--|
| ADB | – | Asian Development Bank |
| EIA | – | environmental impact assessment |
| EMDP | – | ethnic minorities development plan |
| HPCD | – | Heilongjiang Provincial Communications Department |
| IPSA | – | initial poverty and social assessment |
| MOC | – | Ministry of Communications |
| PRC | – | People's Republic of China |
| REA | – | rapid environmental assessment |
| RP | – | resettlement plan |
| TA | – | technical assistance |
| TOR | – | terms of reference |
| TNDP | – | transport network development plan |

TECHNICAL ASSISTANCE CLASSIFICATION

| | | |
|---------------------------------|---|---|
| Targeting Classification | – | General intervention |
| Sector | – | Transport and communications |
| Subsector | – | Roads and highways |
| Theme | – | Sustainable economic growth |
| Subtheme | – | Promoting economic efficiency and enabling markets |

NOTE

In this report, "\$" refers to US dollars.

This report was prepared by E. Kwon (team leader), S. Ferguson, and S. Noda.

I. INTRODUCTION

1. During the 2005 Country Programming Mission of the Asian Development Bank (ADB), the Government of the People's Republic of China (PRC) confirmed its request for technical assistance (TA) to prepare an integrated roads development project (the Project) in Heilongjiang Province.¹ ADB's fact-finding mission visited the project area in March 2005, carried out an initial poverty and social assessment (IPSA) and rapid environmental assessment (REA), and collected other necessary information. This paper is based on the understanding reached with the Government regarding the objectives, scope, costs, consultants' terms of reference (TOR), and implementation arrangements for the TA, as well as the Mission's observations in the field. The design and monitoring framework is in Appendix 1.

II. ISSUES

2. The PRC's economic growth since the 1980s has resulted in an unprecedented expansion in intra- and inter-provincial traffic. The economy's changing structure and increasing diversification have altered the transport demand pattern, in which the demand for road transport has increased faster than that for other transport modes.² The movement of goods and passengers by road is increasing rapidly, as road transport is more flexible and responsive than other modes to the needs of a market economy. The shift in transport demand also reflects the loosening of anticompetitive restrictions in the road transport industry. With the country's robust economic growth, the expansion of vehicle fleets will maintain its fast pace in the coming years. However, the road network is still underdeveloped in both quality and extent. High-class highways³ account for only 12% of the total network. The remaining 88% are medium- to low-grade paved roads and gravel roads. The growing demand for road transport has thus put a strain on the road infrastructure, as manifested by the congestion and bottlenecks in the network. Weaknesses in the road network have jacked up transport and logistics costs in plying between the interior provinces and the coastal ports.⁴

3. Inadequate transport conditions bloat transportation costs to the rural poor and restrict their access to basic goods and services, especially since many of them reside in partial or full isolation. Thus, they are unable to take advantage of job opportunities generated by the country's economic growth. Reliable transport would facilitate their access to input and output markets, thereby stimulating higher cash-crop production and speeding up the transition from subsistence farming to a market economy. Upgraded rural transport would also spur the creation of nonfarm income opportunities for the poor and make education and health facilities more easily available to them.

4. The Government has infused massive investments in road infrastructure, in a concerted effort to boost the country's road capacity. The Government's road development policies are (i) constructing expressways to expand the national trunk highway system to link all cities with a population of more than 500,000 and (ii) developing secondary roads, particularly those that will help reduce poverty and promote rural markets. To support the policies, the Government has also prepared the Rural Road Development Plan to (i) link all county centers through high-class

¹ The TA was first listed in *ADB Business Opportunities* (Internet edition) on 18 February 2005.

² Between 1990 and 2004, road traffic grew around 9.0% per annum for passenger traffic, to reach 876.5 billion passenger-kilometers (km); and around 6.0% per annum for freight, to reach 759.7 billion ton-km. In 2004, road traffic accounted for 53.7% of the country's total passenger traffic and 11.4% of total freight traffic.

³ High-class highways include expressways, and class I and II highways.

⁴ The shortage of adequate road networks has slowed economic growth and regional development. A World Bank study argued that the annual economic costs of not having adequate transport infrastructure in the PRC in the 1980s amounted to 1% of its gross national product (World Bank. 1994. *World Development Report 1994*. Washington, DC).

highways, (ii) connect all township centers with paved roads, and (iii) ensure that all administrative villages are serviced by all-weather roads.

5. As a result, the road network has grown from 1.16 million km in 1995 to 1.86 million km in 2004, an average annual increment of 81,300 km. Expressways have increased from 147 km in 1988 to 34,200 km in 2004. Road density has grown from 12.1 km per 100 square kilometers (km²) in 1995 to 19.4 km per 100 km² in 2004. The New Road Development Program (2003-2020) will expand the road network to over 3 million km, under which expressways will be further increased to 70,000 km. In 2004, Heilongjiang had a total road length of 66,821 km, (0.4% of the PRC total), of which 13.2% were high-class highways: 1.1%, expressways; 1.6%, class I; and 10.5%, class II. The province's road density in 2004 was 14.7 km per 100 km².

6. Heilongjiang province is bounded by the PRC's Inner Mongolia Autonomous Region on the west, the Russian Federation on the north, the Democratic People's Republic of Korea on the east, and Jilin Province on the south. The province stands out for its fertile land and abundant natural resources. Of its 454,000 km² area—the 6th largest in the country—42% is forestland, and its cultivated land area (9.7 million hectares) is the largest in the country. Heilongjiang's population in 2003 was 38.2 million, of which 53% was urban, and its per capita GDP was CNY 11,615—28% higher than the national average. The industrial share of the GDP is 12%, 56%, and 33% for the primary, secondary, and tertiary industries. About half of the total labor force is absorbed by the primary industries, mainly agriculture and mining. The main industrial sectors are petroleum, coal, power plant equipment, metallurgical, heavy machinery, special-hard steel, timber, and woodworking. Foreign trade is vital to Heilongjiang's economy; both the international and domestic demand for its products have consistently risen. The total value of goods traded comprised about 10% of the province's GDP, and has grown over 20% per annum over the last 5 years. The province has 11 national ports open for foreign trade, located in the northern and eastern borders.

7. Despite its strategic importance and economic potential, Heilongjiang has been left behind by the coastal provinces, which have been pacing the country's economic growth. Its per capita GDP in 2003 was only 50–70% of that of coastal provinces. In November 2003, the Government embarked on a grand plan of revitalizing the northeast region—including Heilongjiang—as an industrial hub, thereby attaining and sustaining economic growth of over 10%. In support of the plan, the Ministry of Communications (MOC) drafted the northeast regional transport network development plan (TNDP) in September 2004, in collaboration with Heilongjiang, Jilin, and Liaoning provinces. The plan aims to construct an integrated road-waterway network in the region to catalyze economic development.⁵ The Heilongjiang Provincial Communications Department (HPCD) launched the province's implementation plan for the TNDP (2005–2017), to stretch the improved trunk network to the major ports to facilitate international and regional trade.⁶ The key components are three radiate, four east-west, and six south-north highways, totaling 6,162 km.⁷ When the network is completed, an economic circle will be formed, centered at Harbin, the provincial capital. Eleven out of the 13 cities or districts will be within five hours' drive from Harbin.⁸

⁵ The network consists of 5 south-north highways, 8 east-west highways, 2 circumferential roads, and 10 linking roads. The combined length will stretch to 14,000 km, of which two-thirds will be expressways.

⁶ The HPCD had prepared the 30-year investment program in 1998 under ADB. 1994. *Technical Assistance to the People's Republic of China for Provincial Highway Network Planning*. Manila. The outcome of this TA provided the basis of the provincial implementation plan for 2005–2017.

⁷ By the time the network is completed in 2017, high-class highways will extend to 17,170 km in Heilongjiang.

⁸ The economic circle will cover 47 counties and 86% of Heilongjiang's population; the area will produce 91% of the province's GDP.

8. The proposed Project will upgrade or construct 459 km of the Jixi-Nehe highway. The 828-km Jixi-Nehe highway is one of eight key east-west highways included in the TNDP; cutting across the middle of Heilongjiang through 11 counties, this highway is a major route connecting the eastern and western parts of the province. However, more than a half of the corridor falls under class III or IV highways, or gravel roads, in poor condition. Sections without any drainage system are impassable during winter or wet seasons. Traffic congestion due to bad road conditions often causes transport costs to spiral. Likewise, the expansion of economic activities, including agricultural and industrial trade, is severely hampered by poor transport conditions. The Project, consisting of five sections, will upgrade three sections urgently needing improvement to two-lane class II highways and construct two new sections⁹ with class II standard—the missing links in the Jixi-Nehe highway—to strengthen integrated road networks in Heilongjiang, where the poverty incidence is high.

9. The project roads will link Jixi City, a coal producer in the east, four forest counties in the middle, and six agricultural counties in the west. The Project is connected with one expressway (Tongsan expressway), four national highways, and six provincial highways, forming part of the trunk network that is vital to Heilongjiang and the northeast region. The travel time saved will be substantial, trimming around 24 hours off the trip from Jixi to Nehe. At present, the sections of the roads that will comprise the Project are saturated with traffic, carrying a volume of 2,700–3,500 medium truck equivalents per day. Traffic in some sections has been growing at more than 12% annually in the past years. Overall, traffic in the project roads will grow 8–9% yearly by 2014. The Project is expected to increase the transport capacity and efficiency of the network in Heilongjiang, thereby catalyzing economic growth, spurring interregional trade, and reducing poverty in the project area.

10. The project area has limited accessibility; its 11 counties, including two poverty-designated counties, are mostly rural—67% of a population of 5.3 million. In 2004, the per capita rural income was CNY 2,180 and the per capita GDP was CNY 5,400, less than half of the provincial average of CNY 11,615. Above 18% of the rural population is defined as poor, with annual per capita incomes of below CNY 900. Of 1,023 villages in the project area, 393 are poverty-designated. About 90% of the villages in the project area do not have adequate access to all-weather roads. Due to difficult transport conditions, rural people in the area have to pay high rates for motorized transport, have insufficient access to markets, and have little mobility beyond their immediate communities. The main causes of poverty in the project area include (i) limited road access to markets where farming products are sold, (ii) a decline in the timber industry due to restrictions on tree cutting, and (iii) inadequate delivery of road infrastructure and services. During the fact-finding mission, the IPSA reviewed the need for a comprehensive assessment of the social context and concluded that the key issues to be analyzed during project preparation are a full resettlement plan (RP) and the socioeconomic impacts of the Project.

11. ADB's operating strategy in the PRC's road sector is designed to remove infrastructure constraints and support policy and institutional reforms. Since 1991, ADB has provided 30 loans totaling \$5.6 billion to finance about 4,100 km of highway development. To make ADB's road projects more pro-poor, the local roads have been included in project scopes since 1995. A portion of some ADB loans has been used to finance the local road component.¹⁰ To promote pro-poor economic growth, ADB strategy extends its operations to the local roads at the provincial, county, and municipal levels. In line with ADB's policy dialogue, the Project will finance

⁹ The Project will construct a 2.2 km bridge across the Songhua River to connect Tonghe County to the expressway network, and a 22-km new road in the mountainous Tonghe County.

¹⁰ Ningxia Roads Development Project, Hunan Roads Development II Project, and Guangxi Road Development II Project.

the upgrading of the provincial roads to class II highways (para. 8), and the improvement of 11 township roads (totaling 60 km) linking the towns to the county center will be integrated into the project. The local road component will ensure the favorable distribution of the Project's benefits to the poor in the area.

12. The strategy supports (i) the construction of the roads that connect major growth centers with hinterland economies; (ii) the integration of the network, so that the major trunk highways are supported by a system of local roads, particularly those that provide access to poor areas; (iii) the adequate delivery of affordable transport services to the poor; (iv) adequate road maintenance; (v) the promotion of road safety; (vi) private sector participation in the road sector; (vii) institutional strengthening to increase financial and managerial efficiency in operation and maintenance; and (viii) the adoption of appropriate pricing policies to ensure the optimum use of road transport capacity.

13. The feasibility study for the Project was submitted to MOC in March 2005 and its approval is expected by March 2006. The completion of the preliminary design is expected by August 2005. An environmental impact assessment (EIA) will be completed by July 2005. The preparation of the RP will start in June 2005 and be completed by October 2005. The IPSA and REA carried out during fact-finding identified the key social and environmental issues that will need to be analyzed further during project preparation (Appendix 2).

III. THE TECHNICAL ASSISTANCE

A. Purpose and Output

14. The project preparatory technical assistance will help the Government prepare a road network development project to support pro-poor economic growth and reduce poverty in the project area.

B. Methodology and Key Activities

15. The TA will assist HPCD in (i) refining the feasibility study, including an EIA and summary EIA, RP, and poverty impact analysis for the proposed Project, in conformity with ADB's requirements; (ii) designing the project log framework, identifying performance targets and socioeconomic impact indicators, and baseline data, and establishing measuring/monitoring mechanism; (iii) confirming the technical, economic, and financial viability of the proposed investments; (iv) updating transport and road profiles; and (v) reviewing the road sector issues and providing the basis for strengthening the ongoing policy dialogue with the Government in key areas, such as the impact of road projects on poverty reduction, road safety and vehicle emissions, local road maintenance, public transport services, intelligent transport system and asset management, and private sector participation in the road sector.

C. Cost and Financing

16. The total cost of the TA is estimated at \$625,000, of which \$357,000 is the foreign exchange component and the equivalent of \$268,000, the local currency cost. ADB's TA funding program will provide a \$500,000 grant to cover the entire foreign exchange cost and a portion of the local currency cost (the equivalent of \$143,000). HPCD will finance the remainder of the total TA cost (the equivalent of \$125,000), which will be used to cover office accommodation and support services, local communications, local transport, office supplies, and other facilities and services required for the implementation of the TA. The detailed cost estimates are in

Appendix 3. The Government has been advised that approval of the TA does not commit ADB to finance any ensuing project.

D. Implementation Arrangements

17. A team of international consultants, in association with domestic consulting firm(s), will be engaged, using the simplified technical proposal procedures based on the quality- and cost-based selection method, ADB's *Guidelines on the Use of Consultants*, and other arrangements satisfactory to ADB for the selection and engagement of domestic consultants. The TA will require a total of 30 person-months of consulting services, including 13 person-months of international and 17 person-months of domestic consultancy, to carry out the study, as defined in the outline TOR (Appendix 4). The international consultants will provide expertise in (i) highway and structural engineering, including traffic forecast and maintenance; (ii) transport economics; (iii) financial analysis and private sector participation in the road sector; (iv) poverty and socioeconomic analyses including transport services and roadside stations; and (v) environmental aspects. The domestic consultants will have expertise in (i) highway and structural engineering, (ii) transport economics and financial analysis, (iii) socioeconomic and poverty impact analysis, (iv) resettlement, and (v) environment engineering.

18. HPCD will be the Executing Agency for the TA and will be responsible for the supervision and monitoring of TA activities and liaison with government agencies and organizations. HPCD will also provide office accommodation and transport arrangements. The fielding of consultants is scheduled for early September 2005; consulting services will be carried out over a 6-month period, to be completed in February 2006. HPCD will provide ADB and the consultants with the feasibility study; engineering studies; EIA; RP; and all other materials, recent studies, and reports required to implement the TA. The consultants will maintain close contact with the Government and HPCD, and keep them informed of the progress and findings. Tripartite meetings involving HPCD, ADB staff, and the consultants will be held in the PRC to advise and guide the consultants and review their reports. The consultants will procure the equipment they need under the TA in accordance with ADB's *Guidelines for Procurement*.

19. The consultants will submit to ADB and HPCD the following reports: (i) an inception report, including a survey implementation plan with a proposed questionnaire for socioeconomic, resettlement, and poverty-reduction impacts, 2 weeks after commencement of their services; (ii) an interim report, 8 weeks after commencement of services, which will provide a draft project log framework along with socioeconomic impact indicators and their baseline values, assess the need for an ethnic minorities development plan (EMDP) in accordance with ADB's *Policy on Indigenous Peoples*, and present an initial assessment in the areas of economic, financial, and poverty analyses; (iii) a draft final report, the final project framework, summary EIA, draft RP, draft EMDP, and draft social and poverty assessment report, 14 weeks after commencement of services; and (vi) the final report, summary EIA, RP, social and poverty assessment report, and EMDP, 2 weeks after receiving comments from ADB and HPCD. ADB requires five copies of each report in the English language.

IV. THE PRESIDENT'S DECISION

20. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of \$500,000 on a grant basis to the Government of the People's Republic of China for preparing the Heilongjiang Road Network Development Project, and hereby reports this action to the Board.

DESIGN AND MONITORING FRAMEWORK

| Design Summary | Performance Targets/Indicators | Data Sources/Reporting Mechanisms | Assumptions and Risks |
|---|--|---|--|
| <p>Impact An integrated road transport network is strengthened in Heilongjiang and the northeast region, catalyzing economic growth in the province</p> | <p>Increase in passenger and freight traffic volumes by 50% in 2015</p> <p>Reduction in travel time by 24 hours Jixi-Nehe in 2010</p> <p>Reduction in transport cost by 10% by 2015</p> <p>Gross domestic product growth rate of 8–10% during 2010–2017 for Heilongjiang and 12–15% for the project area</p> <p>Increase in total value of goods traded by 20% during 2010–2015</p> <p>Per capita rural income of CNY3,000 by 2015. Decline in poverty incidence in the project area to 12% by 2015.</p> | <p>Traffic counts and travel time survey by the Heilongjiang Provincial Communications Department (HPCD)</p> <p>Project administration missions and project completion report</p> <p>Postevaluation surveys and reports from HPCD</p> <p>Local government statistics</p> <p>Monitoring of fares and rates by HPCD</p> <p>Heilongjiang Statistics yearbook</p> | <p>Assumptions</p> <ul style="list-style-type: none"> • The Heilongjiang transport network development plan (2005–2017) is implemented according to plan • Traffic forecasts for the Jixi-Nehe highway are realized • The reduction in vehicle operating cost is passed on to road users • Commitment of local governments to local road development • Forecast economic growth rates are achieved • Demonstrated implementation capacity of HPCD |
| <p>Outcome Project design and feasibility study improved to a level suitable for Asian Development Bank (ADB) financing and agreed by Government and ADB</p> | <p>Memorandum of understanding signed by Government and ADB during appraisal mission of June 2006</p> | <p>Memorandum of understanding</p> | <p>Assumptions</p> <ul style="list-style-type: none"> • Government willing to address necessary changes in priorities • Government obtains necessary additional sources of funding |
| <p>Outputs 1. Technical assessments completed</p> <p>2. Design and monitoring framework completed</p> | <p>Inception report submitted to HPCD and ADB by September 2005</p> <p>Interim report submitted to HPCD and ADB by November 2005 and draft final report, by December 2005</p> | <p>ADB document registration</p> <p>Government document registration</p> | <p>Assumptions</p> <ul style="list-style-type: none"> • Effective stakeholder participation and ownership developed <p>Risks</p> <ul style="list-style-type: none"> • Restricted availability and access to information and government personnel • Restricted access to geographical sites |

| Design Summary | Performance Targets/Indicators | Data Sources/Reporting Mechanisms | Assumptions and Risks |
|--|--|--|------------------------------|
| <p>3. Project design requirements accomplished</p> | <p>Summary environmental impact assessment, poverty and social analysis, resettlement plan, and ethnic minorities development plan, if required, submitted to HPCD and ADB by December 2005</p> <p>Draft final report submitted to HPCD and ADB by December 2005</p> | | |
| <p>Activities with Milestones</p> <p>1.1 Assess adequacy of road infrastructure (by September 2005)</p> <p>1.2 Design project log framework (by September 2005)</p> <p>1.3 Assess adequacy of transport services (by October 2005)</p> <p>1.4 Analyze transport demand in the region (by November 2005)</p> <p>1.5 Review technical and financial aspects related to local road maintenance (by October 2005)</p> <p>1.6 Identify performance targets, socioeconomic impact indicators, and risks and assumptions (by October 2005)</p> <p>1.7 Establish baseline data and monitoring mechanism (by November 2005)</p> <p>1.8 Recommend policy reform measures and institutional development needs (by November 2005)</p> <p>1.9 Review the potential for private sector participation (by November 2005)</p> <p>2.1 Hold consultations with stakeholders, including government officials; project beneficiaries; and affected people, including ethnic minority groups, women, and the poor (September–October 2005)</p> <p>2.2 Carry out social and poverty assessment (by November 2005)</p> <p>2.3 Complete baseline survey (by October 2005)</p> <p>2.4 Carry out financial and economic analysis (by November 2005)</p> <p>2.5 Carry out institutional analysis (by November 2005)</p> <p>2.6 Complete summary initial environmental examination (by November 2005)</p> <p>2.7 Prepare resettlement plan, and ethnic minorities development plan, if required (by November 2005)</p> <p>2.8 Finalize project design and monitoring framework (by December 2005)</p> | | <p>Inputs</p> <ul style="list-style-type: none"> • 13 person-months of international and 17 person-months of domestic consultant services • ADB: \$500,000 • Government: \$125,000 | |

SOCIAL AND ENVIRONMENTAL ASSESSMENTS

A. Rapid Environmental Assessment

1. Table A2.1 shows the result of rapid environmental screening.

Table A2.1: Rapid Environmental Assessment

| Screening Questions | Answer | | Remarks |
|--|--------|----|--|
| | Yes | No | |
| A. Siting | | | |
| Is the project area near to or within any of the following environmentally sensitive areas? | | | |
| Cultural heritage site | | X | No cultural relics are reported along the proposed alignment. This will be confirmed during technical assistance (TA). |
| Protected area | | X | No protected areas exist around the proposed alignment. |
| Wetland | | X | Several rivers will be crossed but no wetland areas will be affected. |
| Mangrove | | X | None of these are reported. To be confirmed after receiving the environmental impact assessment report. |
| Estuarine | | X | |
| Buffer zone of protected area | | X | |
| Special area for protecting biodiversity | | X | |
| B. Potential Environmental Impacts | | | |
| Will the Project cause... | | | |
| encroachment on historical/cultural area? | | X | None on the alignment. |
| disfiguration of the landscape by road embankments, cuts, fills, and quarries? | X | | Some new alignment sections will occur in mountainous terrain, but they are limited in the afforested area. |
| encroachment on precious ecology (e.g., sensitive or protected areas)? | | X | None are reported along the proposed alignment. |
| alteration of surface water hydrology of waterways crossed by roads, resulting in increased sediment in streams affected by increased soil erosion at construction site? | X | | There is a risk, but mitigation will be included in the environmental management plan. |
| deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction? | X | | Appropriate sanitation measures will be required to prevent water pollution. |
| increased local air pollution due to rock crushing, cutting and filling works, and chemicals from asphalt processing? | X | | There is a risk but very limited because of the nature of this project. The project mainly improves existing roads. Improvement works are mainly pavement and drainage and new alignment sections are expected to be constructed following the existing terrain; few sections require large earthworks. |
| noise and vibration due to blasting and other civil works? | X | | |
| dislocation or involuntary resettlement of people? | | | |
| other social concerns relating to inconveniences in living conditions in the project areas that may trigger cases of upper respiratory problems and stress? | X | | |
| hazardous driving conditions where construction interferes with preexisting roads? | X | | |

| Screening Questions | Answer | | Remarks |
|--|--------|----|--|
| | Yes | No | |
| poor sanitation and solid waste disposal in construction camps and work sites; and possible transmission of communicable diseases from workers to local populations? | X | | Appropriate sanitation and solid waste facilities will be provided. Public health awareness will be provided to construction workers. |
| creation of temporary breeding habitats for mosquito vectors of disease? | X | | During the construction, prevention is required. |
| dislocation and compulsory resettlement of people living in right-of-way? | X | | At this stage, the preliminary design is not conducted, so the number of resettled people is not estimated though the expected number will be small. |
| accident risks associated with increased vehicular traffic, leading to accidental spills of toxic materials and loss of life? | X | | Road safety program will be strengthened with the project, thereby reducing an accident risk. |
| increased noise and air pollution resulting from traffic volume? | X | | Noise and air pollution are expected to increase but far below the national standards. |
| increased risk of water pollution from oil, grease, and fuel spills, and other materials from vehicles using the road? | | X | Road conditions will be improved, thereby reducing an accident risk. |

2. After reviewing the answers above, the mission leader and environment specialist agree that the Project should be categorized as an A project.

Report Required:

For PPTA: X
 For RETA:
 For Loan/Investment:

Report Circulation Required:

To be attached to RRP: []
 To be circulated to the Board
 120 days prior to loan/investment approval: [X]

3. The terms of reference of the summary environmental impact assessment should include (at least) examination of the Project's impacts on (i) land use and protected areas, (ii) noise and air quality, (iii) water, (iv) traffic safety, (v) local community disturbances, and (vi) cultural relics. The terms of reference should also ensure that appropriate mitigation measures and management procedures are specified and their costs are estimated and included in the civil works contracts in conformity with the Asian Development Bank's guidelines.

B. Summary Initial Poverty and Social Analysis

4. The summary initial poverty and social analysis is given in Table A2.2.

Table A2.2: Summary Initial Poverty and Social Analysis

A. Linkages to the Country Poverty Analysis

| Sector identified as a national priority in country poverty analysis? | Yes | Sector identified as a national priority in country poverty partnership agreement? | Yes |
|--|-----|--|-----|
| Contribution of the sector/subsector to reduce poverty in People's Republic of China (PRC): | | | |
| The Project aims to stimulate economic growth and reduce poverty in the central part of Heilongjiang province through improved access to markets and social services, lower transportation costs of agricultural inputs and products, and increased employment opportunities. The Project will promote the farming of agricultural cash crops and production of minerals, facilitate the flows of goods and services, and increase interaction with other regions. | | | |

B. Poverty Analysis**Targeting Classification: General intervention****What type of poverty analysis is needed?**

Poverty is caused by (i) geographical remoteness and isolation; (ii) inadequate and irregular irrigation; (iii) collapse of the timber industry due to restrictions on cutting trees (iii) lack of knowledge and technical skills in cash-crop farming and animal husbandry, (iv) limited access to credit and development investment; and (v) poor infrastructure. The project area includes one national level poverty county, one provincial level poverty county and other low income counties.

Poverty analysis will be carried out to identify causes of poverty, prepare a complementary local roads program, quantify how the Project will help reduce poverty and incorporate other social measures within the project scope. It will focus on the poverty impact of the proposed interventions on the poor and disadvantaged, including the impact of enhanced provision of transport services for the poor. The analysis will follow the *Handbook on Poverty and Social Analysis* and *Handbook for Integrating Poverty Impact on Assessment in the Economic Analysis of Projects*. Poverty mapping will help determine the correlation between poverty, minority nationality, topography, and transport systems. Recommendations from the analysis will be considered for possible inclusion into project design.

C. Participation Process

Stakeholder analysis. A stakeholder analysis will be conducted to identify key project stakeholders, their project-related interests, and the ways in which they affect project feasibility and success. Public consultation will be carried out by the Executing Agency, local government officials, design institute, and other institutes during preparation of the feasibility study, poverty and social assessment, environmental impact assessment, resettlement plan, and ethnic minority assessment. Primary stakeholders include farmers, people and institutions affected by land acquisition and resettlement, minority people, vulnerable groups, freight and passenger enterprises, drivers and passengers, tourism, and mining enterprises. It is suggested that the role of NGOs be considered during project planning and implementation.

Participation strategy required. A participation strategy will be required to take into account different levels of cooperation and collaboration of stakeholders vertically and laterally. This will help ensure political support, active participation and consultation of concerned groups, productive feedback, and project success. The participatory process will involve information sharing, consultation, focus group meetings, and collaborative decision-making. Participation and consultation efforts should be enhanced during project preparation, and consultation recorded and disseminated.

D. Gender and Development

Transport infrastructure is often considered gender-neutral, as the impacts and benefits will be felt at the household level. However, past experience has shown that socioeconomic development statistics for rural women--especially from ethnic minority groups--such as education, employment, and mobility are lower than for men. This limits women's ability to partake in and fully benefit from economic development. A gender analysis in line with ADB's *Policy on Gender and Development* is required. Data will be disaggregated by gender. Ways for incorporating gender aspects or mitigating adverse impacts will be investigated for inclusion in the project design, the measures for ethnic minorities, and the resettlement plan.

E. Social Safeguards and other Social Risks

| | Significant, Not Significant, Uncertain, None | Strategy to Address Issues | Plan Required |
|---------------|--|--|---------------|
| Resettlement | Significant | A resettlement plan (RP) will be prepared following the Land Administration Law and ADB's <i>Policy on Involuntary Resettlement</i> . The RP will be disclosed to the public and affected people. Internal and external monitoring arrangements will be put in place. | A full RP |
| Affordability | Uncertain | Heilongjiang Provincial Communications Department (HPCD) has implemented other road projects. HPCD will be able to finance the project with similar tolls, and local people will be able to afford to use transport services. This will be verified in the economic and financial assessments. | None |

| | | | |
|-----------------------------|-----------------|---|-------------------------------|
| Labor | Not significant | There is a surplus of laborers in the project area. The Project will generate work opportunities during construction and operation, and will hire unskilled labor. The local government will help to identify available labor, with priority to the poor. | None |
| Indigenous Peoples | Uncertain | The project area has some minority nationalities (3%), mainly the Xiaochun and Manchu. The only potential adverse impact on ethnic minority people is land acquisition and resettlement, and this is under investigation. Where necessary, mitigation measures will be addressed in the RP. Measures will be taken to target minority villages to maximize benefits from the project. | An ethnic minority assessment |
| Other risks/vulnerabilities | Uncertain | HIV/AIDS. ¹ | None |

¹ Human immunodeficiency virus/acquired immunodeficiency syndrome.

COST ESTIMATES AND FINANCING PLAN
(\$)

| Item | Foreign Exchange | Local Currency | Total Cost |
|---|---------------------|-------------------|----------------|
| A. Asian Development Bank (ADB) Financing^a | | | |
| 1. Consultants | | | |
| a. Remuneration and Per Diem | | | |
| i. International Consultants | 277,500 | 0 | 277,500 |
| ii. Domestic Consultants | 0 | 102,000 | 102,000 |
| b. International and Local Travel | 30,000 | 5,000 | 35,000 |
| c. Reports and Communications | 2,000 | 6,000 | 8,000 |
| 2. Office Equipment ^b | 4,500 | 0 | 4,500 |
| 3. Surveys, Miscellaneous Administration and Support Costs | 5,000 | 14,000 | 19,000 |
| 4. Government Representatives for Contract Negotiations ^c | 5,000 | 0 | 5,000 |
| 5. Contingency | 33,000 | 16,000 | 49,000 |
| Subtotal (A) | 357,000 | 143,000 | 500,000 |
| B. Government Financing | | | |
| 1. Office Accommodation and Support Services | 0 | 70,000 | 70,000 |
| 2. Remuneration and Per Diem of Counterpart Staff | 0 | 40,000 | 40,000 |
| 3. Others | 0 | 15,000 | 15,000 |
| Subtotal (B) | 0 | 125,000 | 125,000 |
| Total | 357,000 | 268,000 | 625,000 |

^a Financed by ADB's technical assistance funding program.

^b Including computer hardware/software, photocopier, fax machine, and other office equipment to be procured under the consultant's contract, but ownership will be transferred to Heilongjiang Provincial Communications Department at the completion of the technical assistance.

^c Includes the cost of Government observers to attend contract negotiations at ADB headquarters.

Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

1. The services to be provided by the consultants will cover, but not be limited to, the following areas.

A. Highway and Structural Engineer/Team Leader

2. The consultant will do the following:

- (i) Review all technical aspects of the feasibility study and preliminary engineering designs of the project roads from planning to maintenance, including road safety aspects. Review capacity, geometric design, and road safety features based on the traffic forecasts. Assess the design of each structure on the basis of construction method, material supply, maintenance, and road safety. Recommend design changes and road safety equipment and facilities to improve road safety. Prepare the justifications of the route based on social acceptability, environmental soundness, and construction and maintenance cost.
- (ii) Based on the ADB format, carefully design a design and monitoring framework for the Project, including impact, outcome, outputs, activities, and inputs, with the particular attention to identifying (a) performance targets and socioeconomic impact indicators, (b) baseline data, (c) measuring/monitoring mechanism; and (d) assumptions and risks.
- (iii) Review and update the road sector analysis for the country and province, covering road network; vehicle fleet and traffic; road administration; road sector revenues and expenditures; road engineering, construction, and maintenance; Government's plan to develop road sector including rural roads; and road transport services. Describe a current inventory of the road network and the development plan for the province and the project area. The local road development program to be incorporated into the Project will be designed to enhance the distribution of the project benefits to the hinterland and the rural population. Undertake axle load surveys and traffic surveys. Assess the current level of vehicle loading along the existing highway and local roads.
- (iv) Review traffic counts and origin-destination surveys. In collaboration with the transport economist, undertake detailed traffic forecasts along the project roads for each type of vehicle for normal, generated, and diverted traffic. Assess the adequacy of the access control of the Jixi-Nehe highway and determine the location of toll stations and interchanges considering community and regional planning, impacts of traffic flow around the interchanges, and poverty alleviation impacts.
- (v) Prepare a project implementation schedule and review the proposed contract packaging to be procured under the Project in accordance with the schedule. Review bills of quantities, unit prices, and costs of (a) civil works for the project roads and local road improvement, and (b) equipment and other facilities to be procured under the Project. Review and update the project cost estimates and indicate the foreign exchange and local currency costs. Review construction supervision requirements, recommend appropriate international and domestic supervision consultants' inputs, and estimate the associated costs. Prepare terms of references for consulting services.
- (vi) Review the current road maintenance operation and management systems. Describe the organization, financing and implementation of local road

maintenance in the project area. Assist the Executing Agency (EA) in developing a sound road maintenance management system, which will (a) develop a database on road maintenance costs; (b) refine a functional classification for the road system; (c) compile a comprehensive road inventory; and (d) establish a maintenance-work prioritization system. Recommend a suitable type of maintenance contract for the project roads to improve the efficiency and accountability of road maintenance.

- (vii) Assess intelligent transport system (ITS) and assessment management in the province. Recommend the ITS component to be included in the Project. Prepare an asset management development action plan, which is to (a) establish computerized database and promote the use of modern equipment; and (b) provide a training to enhance staff skills at provincial, county and township levels.

B. Transport Economist

3. The consultant will do the following:

- (i) Review the current and future plans for economic and road development of Heilongjiang and the project area. Prepare a comprehensive economic profile of the project area. Assess the impact of the Project on economic growth and poverty reduction and quantify a portion of project benefits accruing to the poor. Provide for the Project justification in terms of transport network, economic development, and poverty reduction. Review the government revenues and expenditures of the road sector and forecast them over 2006-2010. Assess the financial sustainability of the Project and the local road component.
- (ii) In collaboration with the engineer, prepare detailed traffic forecasts for each type of vehicle for normal, generated, and diverted traffic. Assess the impact of toll charges on the traffic forecasts. Include a willingness-to-pay and affordability survey of key users of the corridor.
- (iii) Assess the status of small businesses in the project area. Recommend ways on how to promote small business in the project area. Analyze how the Project will contribute to the development of the small businesses in the project area.
- (iv) Undertake economic evaluation for the Project, according to the *Guidelines for Economic Analysis of Projects* of ADB, by comparing cases with and without– the Project. Calculate the economic internal rate of return based on benefits and costs, including those for civil works, rights-of-way, detailed engineering, and construction supervision. To quantify economic costs of land, use the approach described in the guidelines. For the economic analysis of the local roads component, analyze and quantify economic costs and benefits, especially producer surplus. Undertake sensitivity analysis by varying project costs, benefits, toll rates, implementation period, traffic, and a combination of these factors and calculate switching values. Carry out risk analysis in accordance with ADB's *Handbook for Integrating Risk Analysis in the Economic Analysis of Projects*. Recommend ways by which project risks may be reduced.
- (v) Conduct a survey to develop a profile of transport services in the project area, and assess whether accessibility is affordable for the poor. Describe the transport demands of the poor. Assess the status of road transport services in the project area, focusing on the quality and quantity of the transport services available, and transport service providers and operators. Analyze demand-side characteristics, with attention to the constraints faced by the poor. Identify specific measures on the supply side that can facilitate access from villages and townships to the main

roads and town centers. Match transport services supply to demand in the area, with emphasis on the demand of the poor. Assess what type of services can be expanded to meet the demand of the poor. Analyze a systematic way to track project benefits to the poor. Review the province's overall plan to develop transport services facilities.

C. Financial Analysis and Private Sector Participation Specialist

4. The consultant will do the following:

- (i) Review and update the financing plan for the Project and assess veracity of various financing sources. Calculate a discounted real return to equity over the project life and assess its suitability for attracting private investors.
- (ii) Review project cost estimates and proposed drawdown schedules as provided by the engineers. Compute price contingencies and interest and other financing charges during construction in accordance with *Guidelines for the Financial Governance and Management of Investment Projects Financed by the ADB*. Prepare the financial projections of the project roads over 20 years, in accordance with the national financial accounting procedures and regulations and the formats acceptable to ADB, including balance sheets, income statements, and cash flow statements in nominal terms.
- (iii) Recommend the appropriate cost recovery mechanism or tolling system. Carry out financial evaluation for the Project by calculating the financial internal rate of return (FIRR), using proposed toll rates, and compare it with a weighted average cost of capital (WACC) in accordance with *Guidelines for the Financial Governance and Management of Investment Projects Financed by the ADB*. The FIRR and WACC should be computed on an after-tax basis in real terms using 2005 prices. The cost estimates and financial projections in nominal terms should be converted to real terms. Calculate a debt ratio and working ratio. Undertake sensitivity tests for the Project by varying toll rates, project costs, implementation period, traffic volume, and a combination of these factors. Undertake toll diversion analysis by varying the toll rates using the ADB's Toll Diversion Model. Assess commercial applications of toll system components, notably, leasing of fiber optic capacity to strengthen the financial viability of the Project.
- (iv) Undertake a financial management assessment and assess financial sustainability, of the operating entity which should include (a) corporate planning and budgetary control, (b) financial and management accounting, (c) cost accounting, (d) internal control and audit system, and (e) data processing. Suggest financial covenants to monitor financial conditionalities of the Project.
- (v) Review the status of private sector participation in the road sector in the province. Draw lessons from other road projects in which the private sector is involved. Based on review of ADB's technical assistance and lessons learned, recommend (a) the appropriate and sustainable form of private sector participation in the Project, and (b) a human resources development plan to facilitate this.

D. Social and Poverty Analysis Specialist

5. The consultant will do the following:

- (i) Prepare socioeconomic and poverty profiles for the counties in the project area, sorting data by income, ethnicity, and gender. Describe the provincial and local government's policy, strategy, and programs for poverty reduction and economic development. Analyze how the Project will complement the government's programs. Consult with local governments to identify development initiatives that could complement the Project, particularly those targeted at the poor and ethnic minorities. Provide analysis of vulnerabilities related to trafficking, HIV/AIDS.¹
- (ii) Prepare a profile of transport services in the project area. Prepare maps showing the locations of schools and health facilities in the area and indicate how the Project will improve access to these services. Assess transport conditions in the area. Describe intermediate means of transport available for the poor in the area. In collaboration with transport economist, (a) identify types of transport services affordable for the poor; and (b) recommend how to maximize project benefits and to make transport services more available, efficient, and reliable.
- (iii) Conduct poverty and social analysis in accordance with ADB's *Handbook on Poverty and Social Analysis* and *Handbook for Integrating Poverty Impact on Economic Analysis of Projects*. Assess how the Project will help improve people's incomes and livelihoods. Analyze (a) the number of different types of project beneficiaries by county and income level; (b) the number of adversely affected people by type of impact; and (c) the poverty impacts. Specify the impacts generated by the Project for local people by income group. In collaboration with transport economist, examine how the Project could help develop small businesses in the area. Recommend measures to enhance benefits and minimize adverse impacts, particularly for the poor, women, ethnic minorities, and other vulnerable groups. The actions should be formulated into a social action plan and/or an ethnic minorities development plan (EMDP). The cost of such measures and the means for implementation must be clearly proposed.
- (iv) Provide adequate coverage for investigations and consultations with ethnic minorities, in relation to potential impacts or possible enhancement of project benefits. Prepare an EMDP in accordance with ADB's *Indigenous Peoples' Policy* and *ADB's Gender Policy*. The EMDP should contain a profile of affected ethnic minority villages, social impact assessment, gender analysis, an action plan, budget, implementation arrangements, external monitoring and evaluation, and internal monitoring and supervision.
- (v) Help EA establish consultation and participatory processes that will be used during project preparation as well as project design, construction, and operation. Identify stakeholders and representatives to be consulted to incorporate their needs and demands into the Project. Prepare a consultation plan and a format for documenting consultation with affected people, local government officials, and local education officers, listing events—such as activities to prevent trafficking and spread of HIV/AIDS, road safety programs, and local road maintenance—and summarizing the outcomes and improvements resulting from consultation.

E. Resettlement Planning Specialist

6. The consultant will do the following:

- (i) Review a draft resettlement plan (RP) and modify it as required to comply with ADB's *Handbook on Resettlement 1998*. Conduct resettlement household surveys

¹ Human immunodeficiency virus/acquired immunodeficiency syndrome.

and surveys of seriously affected villages to ensure adequate understanding of social impacts. Identify seriously affected households. Quantify the types and degree of impacts on the affected people. Document in the RP the extent to which the project design and alignment has avoided or minimized land acquisition and displacement of people and businesses. Identify potential impoverishment risks and vulnerable groups, including those severely affected through loss of land and those with low income, and develop mitigation measures.

- (ii) Define categories for impact and eligibility of affected people for compensation, and prepare an entitlements matrix covering compensation and other assistance for all types of impacts to achieve full replacement for lost assets, income, and livelihoods. For seriously affected villages, prepare village economic rehabilitation plans to restore incomes of affected people. Identify specific measures for severely affected, poor, ethnic minorities, and other vulnerable households.
- (iii) Prepare a consultation plan and a format for documenting consultation with affected people, listing events and summarizing the outcomes and improvements resulting from consultation. Assist EA in expanding consultation with the affected communities and stakeholders who may be opposed to the Project. Assess stakeholders' concerns and consider possible changes in the project design to minimize resettlement impacts.
- (iv) Assess whether (a) the compensation standards are based on replacement value, and (b) the resettlement budget is sufficient to acquire the land and implement the RP. Review the organizational structure and capacity for implementing resettlement and recommend improvements required before the start of land acquisition. Help EA to prepare a detailed resettlement schedule that is linked to the overall project schedule. The RP will also include a plan for internal monitoring and supervision and a plan for periodic external monitoring and evaluation by an independent agency. Assist EA to finalize, disclose, and get Government endorsement of the RP based on preliminary design data.

F. Environmental Impact Assessment Specialist

7. The consultant will do the following:

- (i) Review the draft environmental impact assessment (EIA) and determine if it includes all project components, including local roads, and provides at least a qualitative assessment of cumulative and induced impacts. Provide EA with specific and detailed recommendations for revisions, if needed, to make the environmental assessments and EIA conform to ADB's requirements. Confirm whether two public consultation events will occur at (a) planning/conceptual design stage, and (b) detailed/final design stage. Prepare a summary EIA.
- (ii) Assess the environmental conditions in the project area as well as the current negative environmental impacts resulting from industrial activities and road traffic. Analyze the likely impacts during construction and operation and suggest appropriate mitigation measures. Review the Government's policy and regulations for reducing vehicle emission. Review the proposed measures to mitigate impacts on environment and the cost estimates. Revise the environmental monitoring and management plan and confirm the cost estimates for implementing it.