Technical Assistance Report

Project Number: 37628
November 2005

Technical Assistance
People’s Republic of China: Railway Passenger and Freight Policy Reform Study

Asian Development Bank
CURRENCY EQUIVALENTS
(as of 14 October 2005)

Currency Unit – yuan (CNY)
CNY1.00 = $0.123632
$1.00 = CNY8.0885

ABBREVIATIONS

ADB – Asian Development Bank
MOF – Ministry of Finance
MOR – Ministry of Railways
NDRC – National Development and Reform Commission
OECD – Organisation for Economic Co-operation and Development
PRC – People’s Republic of China
TA – technical assistance
WTO – World Trade Organization

TECHNICAL ASSISTANCE CLASSIFICATION

Targeting Classification – General intervention
Sector – Transport and communications
Subsector – Railways
Theme – Sustainable economic growth
Subtheme – Promoting economic efficiency and enabling markets

NOTE

In this report, “$” refers to US dollars.

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Director General H. Rao, East and Central Asia Department (ECRD)
Director N. Rayner, Transport and Communications Division, ECRD
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I. INTRODUCTION

1. The Government of the People’s Republic of China (PRC) has requested the Asian Development Bank (ADB) to provide technical assistance (TA) to the Ministry of Railways (MOR) for support of railway passenger and freight policy reform. The fact-finding mission visited the PRC in October 2005, and reached an understanding with the Government on the TA’s objectives, scope, terms of reference, cost estimates, financing plan, and implementation arrangements. The TA is included in the ADB 2005 country program for the PRC.1

II. ISSUES

2. Economic growth in the PRC was rapid over the past two decades, reaching 9.4% in 2004. The rapid economic growth has resulted in a 9% annual growth in passenger transport and a 7.4% growth in freight transport from 1978 to 2004. During that period, railway freight grew from 535 billion tons/kilometer (km) to 1,929 billion tons/km, equivalent to an annual growth rate of 5.1%; and passenger traffic grew at 6.6% annually, increasing from 109 billion passenger-km to 522 billion passenger-km. Despite this growth in traffic, the railway lost modal share for both freight and passengers. By the end of 2004, the PRC’s railway system comprised 74,408 route-km, and carried about a third of the PRC’s freight and passenger traffic.

3. The Government’s railway development policy focuses on (i) removing constraints and expanding the railway system, (ii) encouraging construction of joint venture local railways to promote the development of local economies, (iii) improving the railway system’s efficiency by using new technology and modern management tools for planning and operations, (iv) reducing operating subsidies through appropriate pricing and commercialization of services, (v) initiating institutional and structural reforms to increase MOR’s autonomy and accountability, and (vi) encouraging nongovernment investment in infrastructure and related services.

4. The tenth 5-year Plan (2001–2005) identifies transportation, including railway development, as a priority. The plan envisages (i) building 6,000 km of new lines to access previously unserved areas, with the network reaching 74,000 km; (ii) providing 3,000 km of double lines, and electrifying 5,000 km of key lines to increase capacity; and (iii) increasing operating speeds on 5,000 km, with the total length of such lines reaching 15,000 km. The plan for the railway sector includes investing CNY350 billion: CNY270 billion for capital construction and CNY80 billion for rolling stock. During 2003–2007, investments in capital construction are expected to reach CNY450 billion. To complement the expansion of that capacity, the Government has emphasized the need to accelerate reforms in the railway sector.

5. In 2004, the State Council approved the new Railway Development Plan covering the period up to 2020. The plan seeks to expand the railway network from 72,000 km to 85,000 km by 2010, and to 100,000 km by 2020. Increasing train speed is identified as a major goal. Train speed will be raised to over 200 km per hour on the trunk network by 2020. Priority will be given to the development of railways in unserved areas and regions that lack transport and have remained less developed. The route network length will increase by 16,000 km in the western region of the PRC to reach a network length of 40,000 km by 2020. To improve operational efficiency, MOR has initiated action to separate passenger and freight trains on key rail corridors.2

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2 ADB is financing the first passenger-dedicated corridor under ADB. 2005. Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the People’s Republic of China for Zhengzhou–Xi’an Railway Project. Manila (Loan 2182-PRC).
6. ADB’s strategy for the railway sector focuses on (i) expanding the railway system by constructing new lines in unserved areas that are less developed and poor; (ii) modernizing and increasing the capacity to improve transport efficiency on key routes of the national railway system; (iii) commercializing railway operations to sustain efficient operations; and (iv) increasing railway competitiveness in the transport sector through restructuring and reform.

7. Japan is the major source of external financing in the PRC railway sector, followed by ADB and World Bank. Since 1979, Japan through the Japan Bank for International Cooperation has provided about ¥558 billion for 15 railway projects to expand rail transportation capacity. Since 1984, the World Bank has provided 10 loans totaling over $2.4 billion for nine national railway projects to expand capacity on high-priority corridors, modernize systemwide technology, and strengthen institutional capabilities and one local railway project.

8. ADB has focused on the development of railways in less developed inland provinces to promote growth and reduce poverty. It has provided 13 loans totaling $2.64 billion to finance the construction of about 1,931 km of provincial railways operated by joint ventures with MOR, and 4,604 km of new railway lines under national railway projects. Policy dialogue has been a significant component of ADB assistance to the railway sector and has effectively complemented the lending operations. Since 2002 there has been active engagement of policy dialogue and discussion with MOR, National Development and Reform Commission (NDRC), and Ministry of Finance (MOF). There is broad agreement on reforms as an engine to further development of railways in the transport sector. Since 1989 the PRC railway has received 11 TAs for policy reforms, institutional development (local railways), strengthening of commercial and business operations, marketing and business development, tariff setting with improved cost recovery, developing human resources, and improving the financial management and accounting systems.

9. MOR is in a transition phase from building transport capacity to institutional development. The Government has broadly defined the framework of railway restructuring to separate government functions from enterprise functions; separate rail from nonrail functions; rationalize staff in core transportation, spin-off peripheral operations, and noncore operations; and reform the railway investment and financing system. ADB has enhanced its policy dialogue with MOR, NDRC, and MOF. The World Bank and the Organisation for Economic Co-operation and Development (OECD) have also been engaged in dialogues on many policy issues concerning the PRC railways. OECD3 considered possible approaches to restructuring the PRC railways. The conclusion was that, considering that rail reform takes time, determination of the reform path for the PRC railways should start now if the railway sector is to be effective by 2010. There is broad agreement on reforms in the transport sector for further railway development. The new Railway Development Plan (2004) sets major goals and the reform agenda up to 2020. The plan seeks to (i) study and learn from worldwide experience, (ii) clearly identify core operations and separate core and noncore transportation businesses, (iii) rationalize and reduce staff, (iv) reform the railway investment and financing system, and (v) establish specialized transportation companies.

10. Progress has been achieved as MOR has adopted a structured approach to railway reform. A new management concept, the Asset Operating Liability System, was introduced as a pilot project in 1999. Under this system MOR entered into management contracts with railway administrations to improve profitability. The management contracts helped improve the operational and financial performance of the railway administrations. The system has since

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3 Summary and recommendations of the Organisation for Economic Co-operation and Development (OECD) and Development Research Center seminar on Railway Reform in Beijing on 28–29 January 2002.
been extended to all railway administrations. Separation of core and noncore businesses is a key element of MOR’s restructuring program. The total number of employees in the core transportation business has been reduced from 1.89 million in 1997 to 1.55 million in 2004. In the noncore transportation business, five large companies employing 616,500 have been divested. To provide jobs for redundant staff, by the end of 2004 MOR had set up 5,800 diversified businesses (independent of the core transportation business) employing more than 416,000 people to supply equipment, goods, and services to the railway industry. In 1998, MOR initiated a cost-sharing scheme for health insurance and pensions for railway employees. In 2004, MOR completed the transfer of 826 educational institutes and 208 hospitals to local governments. One hundred branch lines comprising 7,800 km of route have been separated to improve productivity and reduce operating losses.

11. MOR has taken several measures to improve the operational and management information systems for the railways, e.g., development and introduction of the Transportation Management Information System; computerized ticketing systems in 700 stations and 7,000 ticket sales points, accounting for 95% of passengers; and use of an interline revenue settlement system. MOR is introducing a state-of-the-art dispatch management information system in all 18 railway administrations and 70 major trunk lines (expected to be completed by 2005), and will introduce centralized traffic control on several trunk lines by 2007. Consistent with growth in multimodal transport, container transport in the railway sector has grown at three times the rate of ordinary freight traffic. MOR has set up an independent container company and plans to build 18 large container terminals by 2007.

12. Even though in recent years the PRC railways have made significant progress and notable achievements, they are still unable to meet the increasing demand for passenger and freight transportation. High economic growth rates and increasing urbanization are the two major causes of the high transport demand. With the gross domestic product (GDP) expected to grow at 7%, and 60% of the rural population expected to move to urban areas (400 million) by 2020, the challenges for increased transportation capacity and quality of service offered are enormous. The PRC railways, which are an integral part of the PRC transport market, face tremendous challenges not only for investment requirements but also for creating an enabling environment to meet the growing demand for transport. Given this background, the Government and MOR sought ADB assistance to help the PRC railways review the passenger and freight transport demand structure and assist in preparing a reform plan to meet these challenges.

III. THE TECHNICAL ASSISTANCE

A. Impact and Outcome

13. The impact of the proposed TA is an efficient, reliable, and competitive railway transport system in the PRC. The outcome of the TA is a policy reform plan for the railway passenger and freight transport in line with the Government’s envisaged development goals. The TA will (i) assist the Government to review the impacts of the changes in the PRC transport market demand on PRC railway passenger and freight transport; (ii) assess the current level of preparedness of MOR to address these impacts, and (iii) make recommendations on the action and policy reform support to enable the PRC railways to adequately meet these challenges. The study will look at the conflicting roles of meeting social obligations and making profits, increasing modal competition, impacts due to the fast pace of urbanization and economic development,

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4 ADB and MOR agreed on the separation of container businesses as part of the ADB-financed Yichang–Wanzhou Railway Project. (ADB. 2003. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the People’s Republic of China for Yichang–Wanzhou Railway Project.* Manila.)
and demand for delivery of improved services. The study will also look at the possibility of innovative passenger and freight transportation projects or products to enhance the competitiveness of the railway sector and improve customer satisfaction. To achieve these objectives, the study will examine opportunities for diversified financing sources, increased private sector involvement, and the possibility of public-private sector partnerships. The study will research the existing work done by the PRC railways, make use of experience with similar reforms in other railways (international), involve active participation of railway management, and help in preparing a policy reform plan that MOR can implement. Appendix 1 gives the design and monitoring framework.

B. Methodology and Key Activities

14. International consultants, supported by domestic consultants, will be engaged to help the Government prepare the policy reform plan. The consultants will (i) undertake an analytical review of the status of the railway sector in the PRC transport market, and prepare a sector update; (ii) review the relevant development plans for railways; (iii) identify long-term development needs; and (iv) recommend necessary policy reforms, and regulatory requirements for developing the railway passenger and freight markets in line with the Government’s envisaged development goals. The TA will be undertaken in close consultation with the Government, MOR, NDRC, and other relevant agencies. The study will build on ADB’s ongoing policy dialogue and the outputs of the recent TA for policy reform support. It will consider all previous studies by the Government, ADB, World Bank, OECD, and other multilateral and bilateral agencies. The TA will involve analytical and innovative research, fieldwork, training, and stakeholder consultations with the Government, private sector, user groups, and international development partners.

15. Key activities will include a review of existing studies by MOR, the Government, other multilateral institutions; data analysis; and consultation with other stakeholders, including MOF, NDRC, and government officials. An international training program with participation from the relevant departments will be organized to learn from experiences of other railways. A workshop will be organized at the interim stage of report preparation to discuss and review the findings of the study, and a seminar will be organized at the final stage to disseminate the findings of the TA.

C. Cost and Financing

16. The cost of the TA is estimated at $520,000 equivalent, comprising of $330,000 in foreign exchange and $190,000 equivalent in local currency (Appendix 2). ADB will provide $400,000 to cover the entire foreign exchange cost and $70,000 equivalent of the local currency cost. ADB will finance the TA on a grant basis from ADB’s TA funding program. MOR will provide the remaining $120,000 equivalent in local currency for counterpart staff, office facilities, and support services.

D. Implementation Arrangements

17. As the Executing Agency, MOR will be responsible for supervising and monitoring TA activities. A steering committee—comprising representatives of relevant departments of MOR (Policy Reform and Regulation Department, Passenger Transportation Department, Freight Transportation Department, and Planning Department), and chaired by the director general,
Foreign Capital and Technical Import Center, MOR—will be set up to oversee implementation, and provide guidance and direction to the consultants. In addition, MOR will appoint a project coordinator who will supervise and coordinate day-to-day TA activities, including monitoring of progress, resolving problems, arranging meetings, and liaising with concerned government agencies, including MOF and NDRC. To facilitate the work of the consultants and ensure that MOR benefits from their experience, MOR will also provide adequate counterpart staff with relevant work experience during TA implementation. MOR and other appropriate ministries will provide policy guidance to the consultants. MOR and concerned ministries will meet to discuss the consultants’ report at inception, interim, and final draft stages. A workshop and a seminar will be held to review the findings at the interim and final stages of report preparation. The meetings will have representatives of MOR, MOF, NDRC, other relevant agencies, ADB, and the consultants. A final report will be published when the TA ends.

18. An international consulting firm in association with domestic consultants will be engaged by ADB using the simplified technical proposal procedures based on the quality- and cost-based selection method in accordance with ADB’s Guidelines on the Use of Consultants and other arrangements satisfactory to ADB for engaging domestic consultants. The TA will require about 15 person-months of international and about 10 person-months of domestic consulting services to carry out the terms of reference (Appendix 3). The international consultants will have prior PRC experience and have expertise in the following fields: (i) transport policy and regulation issues as related to railways; (ii) transport economics including fiscal, planning, and pricing issues; (iii) railway freight transportation and management; and (iv) railway passenger transportation and management. The international consultants will be encouraged to utilize domestic consultants, with expertise in (i) railway policy and regulation, (ii) transport economics, (iii) railway freight transportation, and (iv) railway passenger transportation. The TA is expected to commence in March 2006 and be completed by September 2006. Procurement of equipment, supplies, and materials by consultants under the TA will follow ADB’s Guidelines for Procurement. The equipment will be turned over to MOR after TA completion.

19. The Government and MOR have agreed to provide assistance required for TA implementation in a timely manner. MOR will make available to the consultants (i) all relevant reports, including rules and regulations, studies, and information required for TA implementation; (ii) offices and qualified counterpart staff; and (iii) other needed assistance, including liaison with the Government and local authorities.

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 $400,000 on a grant basis to the Government of the People’s Republic of China for Railway Passenger and Freight Policy Reform Study, and hereby reports this action to the Board.
## DESIGN AND MONITORING FRAMEWORK

<table>
<thead>
<tr>
<th>Design Summary</th>
<th>Performance Targets/Indicators</th>
<th>Data Sources/Reporting Mechanisms</th>
<th>Assumptions and Risks</th>
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</thead>
<tbody>
<tr>
<td><strong>Impact</strong></td>
<td>An efficient, reliable, and competitive railway transport system is developed.</td>
<td>• Passenger and freight traffic increased annually by 5% from 2006 to 2010</td>
<td>• Policy recommendations implemented by the Government.</td>
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<td>• Operating ratio less than 1</td>
<td>• People's Republic of China (PRC) railway statistics</td>
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<tr>
<td><strong>Outcome</strong></td>
<td>A policy reform plan for the railway passenger and freight transport is developed in line with Government's envisaged development goals.</td>
<td>• Recommendations developed for policy reforms and regulatory requirements for railway passenger and freight transport</td>
<td>• Government commitment to Ministry of Railways (MOR) reforms</td>
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<td></td>
<td>• Technical assistance (TA) progress reports</td>
<td>• Technical assistance (TA) progress reports</td>
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<td>• TA review mission reports</td>
<td>• TA review mission reports</td>
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<td></td>
<td>• Asian Development Bank (ADB) TA completion report</td>
<td>• Asian Development Bank (ADB) TA completion report</td>
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<tr>
<td><strong>Outputs</strong></td>
<td>1. Technical assessments completed</td>
<td>• Draft final report submitted to the Government and ADB by July 2006</td>
<td>• Support and active participation from various stakeholders</td>
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<tr>
<td></td>
<td>2. Railway passenger and freight transport update prepared</td>
<td>• Final report submitted to the Government and ADB by September 2006</td>
<td>• Coordination among relevant government agencies during TA implementation</td>
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<td></td>
<td>3. Long-term challenges for the PRC railway sector identified</td>
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<td>4. Consultations with stakeholders and development partners</td>
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<td></td>
<td>5. Capacity development program organized</td>
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<td>6. Government-owned policy reform plan for railway passenger and freight transport developed</td>
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<td></td>
<td></td>
<td>• TA progress report</td>
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<td></td>
<td></td>
<td>• ADB review mission reports</td>
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<td></td>
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<td>• ADB TA completion report</td>
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</table>
### Activities with Milestones

1.1. Review and prepare an update on the status of the PRC railway sector (beginning at TA inception in March 2006 for 6 months), covering
   (i) role of the railway sector in economic and social development;
   (ii) existing railway networks, infrastructure, and provision of services;
   (iii) transport demand for freight and passenger traffic including modal shares;
   (iv) policies, legislation, and regulations;
   (v) financing and financial management capacity of the various entities;
   (vi) opportunities for the private sector;
   (vii) institutional structure and human resource capacity in the railway sector; and
   (viii) existing sectoral reports and studies; and Government’s existing (or draft) plans for development of transport.

1.2. Examine issues related to railway passenger and freight transport and identify long-term development needs (March 2006–June 2006).

1.3. Examine existing organizational structure of railway freight and passenger transport, and recommend appropriate institutional framework and organizational structure (March 2006–May 2006).


2.1. Conduct a consultative workshop with stakeholders (May 2006) and a seminar (July 2006).

2.2. Prepare a policy reform plan for the development of the railway passenger and freight transport (March 2006–September 2006).

### Inputs

- ADB: $400,000
- 15 person-months of international and 10 person-months of domestic consulting services
- Government: $120,000

## COST ESTIMATES AND FINANCING PLAN
($'000)

<table>
<thead>
<tr>
<th>Item</th>
<th>Foreign Exchange</th>
<th>Local Currency</th>
<th>Total Cost</th>
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<tbody>
<tr>
<td><strong>A. Asian Development Bank Financing (ADB)</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
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<tr>
<td>1. Consultants</td>
<td></td>
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<tr>
<td>a. Remuneration and Per Diem</td>
<td></td>
<td></td>
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<tr>
<td>i. International Consultants</td>
<td>250.00</td>
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<td>ii. Domestic Consultants</td>
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<td>35.00</td>
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<td>2. Equipment&lt;sup&gt;b&lt;/sup&gt;</td>
<td>5.00</td>
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<td>5.00</td>
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<td>3. Training, Seminars, and Conferences</td>
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<td>4. Miscellaneous Administrative and Support Costs</td>
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<td>5. Representatives for Contract Negotiations</td>
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<td>6. Contingencies</td>
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<td><strong>Subtotal (A)</strong></td>
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<td><strong>400.00</strong></td>
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<td><strong>B. Government Financing</strong></td>
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<td>45.00</td>
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<td>2. Remuneration and Per Diem of Counterpart Staff</td>
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<td>3. Others</td>
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<td><strong>Subtotal (B)</strong></td>
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<td><strong>Total</strong></td>
<td><strong>330.00</strong></td>
<td><strong>190.00</strong></td>
<td><strong>520.00</strong></td>
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</table>

<sup>a</sup> Financed by ADB's technical assistance funding program.

<sup>b</sup> Includes computer hardware and software, photocopier, facsimile machine, and other equipment to be procured under the consultants’ contracts. Ownership will be transferred to the Government upon completion of the technical assistance.

Source: ADB estimates.
OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

A. Objective

1. The proposed technical assistance (TA) will assist the Government to review the impacts of changes in the People’s Republic of China (PRC) transport market demand on the railway passenger and freight transport; assess the current level of preparedness of the Ministry of Railways (MOR) to address these impacts; and make recommendations on the action and policy reform support to enable PRC railways to adequately meet these challenges.

2. To achieve the objective, the TA will (i) undertake an analytical review of the status of the railway sector in the PRC transport market, and prepare a sector update; (ii) review the relevant development plans for railways; (iii) identify the long-term development needs; and (iv) recommend necessary policy reforms, and regulatory requirements for railway passenger and freight development in line with the Government’s envisaged development goals. The study will make use of experience with reforms in other railways (international), involve active participation of railway management, and develop a realistic policy reform plan, for the Government to implement.

B. Scope of Work

3. The tasks of the consultants are as follows:

   (i) Undertake a comprehensive and analytical review of the current status of the railway sector in the PRC transport market, and prepare an update based (a) the role of the railway sector in economic and social development; (b) the existing railway networks, infrastructure, and provision of services; (c) the transport demand for freight and passenger traffic; including modal shares; (d) policies, legislation, and regulations; (e) financing and financial management capacity of the various entities; (f) opportunities for the private sector; (g) institutional structure and human resource capacity in the railway sector; and (h) existing sectoral reports and studies; and Government’s existing (or draft) plans for development of transport.

   (ii) Identify the long-term challenges for the PRC railway sector, including the conflicting roles of meeting social obligations and making profits, increasing modal competition, impacts due to the fast pace of urbanization and economic development, and demand for delivery of improved services.

   (iii) Examine the potential role of railways in the context of intercity and urban transport development. Specifically examine issues of MOR’s interface with the local and city governments and their relationship, technical compatibility, Government subsidy, and financing. Recommend how railways can meet these challenges considering international experience.

   (iv) Review the existing system of marketing for railway freight and passenger transport development. Given the constraints of supply and demand and the limitation of forecasting, recommend special products or services, and innovative approaches to product pricing and service quality based on international experience.
(v) Review the existing organizational structure of freight and passenger transport in MOR. Examine possible organizational structures for separate enterprise and management functions and compare the merits and demerits of alternatives. Recommend an appropriate regulatory and institutional framework and organizational structure.

(vi) Review the progress achieved in applying information technology to railway freight and passenger transportation marketing and management. Examine the adequacy of the existing railway marketing information system, passenger ticketing and booking system, comprehensive service system, marketing system, and forecasting system for passenger transportation and luggage information system and recommend changes, if any. For freight transportation, examine the adequacy of the supportive decision-making system, information service system, transportation capability locating system, and safety management system, recommend changes, if any. Examine how to realize access to information across different railway departments, and expand the scope of e-commerce beyond e-ticketing for better service delivery to passengers and shippers.

(vii) Study the current condition of the PRC logistics industry, and based on progress and current trends in international modern logistics, examine how PRC railway freight transportation can incorporate the modern logistics systems to achieve international standards of service quality, and customer satisfaction.

(viii) In the context of passenger and freight traffic development, examine how to guarantee service quality, and recommend a management system that has a fair and objective monitoring and evaluation mechanism.

(ix) Review the potential for private sector involvement and public-private partnerships in the railway sector. Identify the (a) level of access to service and (b) level of participation in delivery of service by private firms/individuals and recommend specific areas of subsequent private sector development policy and practice in the sector. Examine the possibility of leasing out passenger cars or coaches, on-board services, e-commerce, and ticketing. Examine opportunities for diversified financing sources for developing passenger and freight transport.

(x) Review the history of MOR’s tariff reform as well as tariff studies conducted by MOR and the World Bank. Examine current policies in line with World Trade Organization (WTO) requirements.

(xi) Validate the findings of this study with outputs of previous studies in the sector by World Bank, Organisation for Economic Co-operation and Development (OECD), and other multilateral and bilateral partners, and recommend a set of actions that can be included in the policy reform plan.

(xii) Review lessons learned from the experience of other countries in freight and passenger policy reforms and regulations. As part of this exercise, prepare and implement the international training for government officials concerned. A training program and a list of participants will require Asian Development Bank (ADB) approval.
(xiii) Organize a workshop at the interim stage of report preparation to discuss and review the findings of the study, and seminar will be organized at the final stage to disseminate the findings of the TA.

C. Reporting Requirements

4. The consultants will submit the following reports: (i) an inception report 3 weeks after the services start, (ii) an interim report after 12 weeks, (iii) a draft final report after 20 weeks, and (iv) a final report (including key findings and recommendations [5 pages]) after 6 months. MOR requires five copies of each report in English and in Chinese while the Ministry of Finance (TA Division), and the National Development and Reform Commission need two copies of each report in those two languages. ADB requires five copies of each report in English. The final report will be edited for publication (bilingual). All reports will be submitted in both hard copy and soft copy.