

**ASIAN DEVELOPMENT BANK**

**TAR:PRC 35337**

**TECHNICAL ASSISTANCE**

**TO THE**

**PEOPLE'S REPUBLIC OF CHINA**

**FOR PREPARING THE**

**GUANGXI ROADS DEVELOPMENT II PROJECT**

**May 2003**

## CURRENCY EQUIVALENTS

(as of 30 April 2003)

Currency Unit	–	Yuan (CNY)
CNY1.00	=	\$0.1208
\$1.00	=	CNY8.2770

## ABBREVIATIONS

ADB	–	Asian Development Bank
APIA	–	areawide project influence area
DFR	–	draft final report
DPIA	–	direct project influence area
EIA	–	environmental impact assessment
GCD	–	Guangxi Communications Department
GDP	–	gross domestic product
GZAR	–	Guangxi Zhuang Autonomous Region
HIV/AIDS	–	human immunodeficiency virus/acquired immune deficiency syndrome
IPSA	–	initial poverty and social assessment
km	–	kilometer
km <sup>2</sup>	–	square kilometer
NGO	–	nongovernment organization
NH24	–	national highway No. 24
NTHS	–	National Trunk Highway System
PRC	–	People's Republic of China
REA	–	rapid environmental assessment
TA	–	technical assistance
10FYP	–	Tenth Five-Year Plan
WDS	–	Western Development Strategy

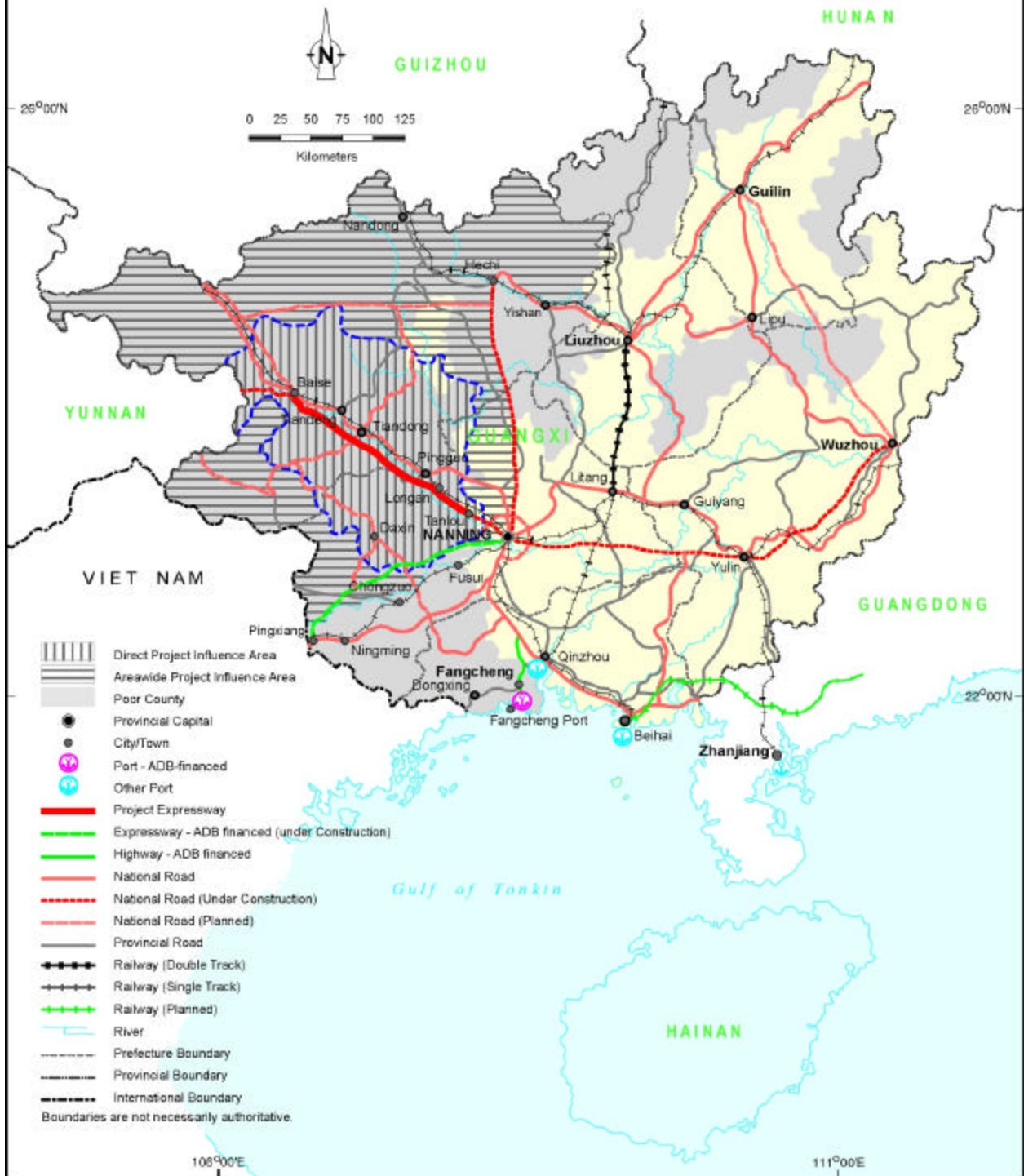
## NOTES

- (i) The fiscal year (FY) of the Government and its agencies ends on 31 December.
- (ii) In this report, "\$" refers to US dollars.

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## GUANGXI ROADS DEVELOPMENT II PROJECT IN GUANGXI ZHUANG AUTONOMOUS REGION IN THE PEOPLE'S REPUBLIC OF CHINA



## I. INTRODUCTION

1. During the 2002 Country Programming Mission of the Asian Development Bank (ADB), the Government of the People's Republic of China (PRC) confirmed its request for a technical assistance (TA) to prepare an integrated roads development project (the Project) in Guangxi Zhuang Autonomous Region (GZAR). ADB's Fact-Finding Mission visited the project area in August 2002, carried out an initial poverty and social assessment (IPSA), and discussed economic, social, and other project-specific issues with officials of the central and local governments. This report is based on the understandings reached on the objectives, scope, costs, consultants' term of reference, and implementation arrangements for the TA, and the Mission's observations in the field. The TA is included in ADB's 2002 program for the PRC<sup>1</sup>, and an ensuing loan is included in the 2004 program. The TA framework is presented in Appendix 1.

## II. ISSUES

2. The PRC's rapid economic growth during the last decade has substantially increased the demand for transport services. The changing structure and increasing sophistication of the economy have altered the pattern of transport demand, with more rapid growth in the demand for road transport than for other modes. While the development of road infrastructure is required to interconnect all growth-generating sectors, especially the agriculture-based ones, it is also required to achieve a better and wider distribution of the benefits of economic growth. Good roads that link the rural population to the main economy are a prerequisite for rural development and poverty reduction through increased agriculture output, increased incomes, and better living conditions.

3. The PRC road network had about 1.76 million kilometers (km) of roads at the end of 2002, including the second longest expressway in the world. However, the network is still underdeveloped in quality and extent, and the road density is among the lowest in the world (17.7 km per 100 square kilometers [km<sup>2</sup>]). The PRC faces constraints and bottlenecks in road transport. Road networks are poorly developed and do not provide access to large parts of the country, particularly in the poorer inland regions. Vehicle numbers are growing at 2–3 times the rate of population, and the urban population has increased from 190 million in 1980 to 360 million in 2001. By 2010, an estimated 700 million people will live in major activity centers. The vehicle and population growth, needed for an efficient road network, together with the considerable volume of slow-moving nonmotorized vehicles, contribute to numerous road accidents, hamper traffic flow and generate congestion, and inhibit socioeconomic development. In 2001, there were about 755,000 road accidents, killing 106,000 and injuring 546,000 persons in the PRC. This cost 1–3% of gross domestic product (GDP), and entailed 1 road accident death every 5 minutes.

4. The Government views road development as a key component of its strategy to improve access to activity centers and support socioeconomic development. An ADB-financed study in the southwest region<sup>2</sup> concluded that poor quality road infrastructure and inadequate transport services in poor areas are major obstacles to economic growth and poverty reduction.

5. The western development strategy (WDS) adopted by the Government in February 2000 aims to accelerate development in the western region.<sup>3</sup> The Government views road development as a key component of the WDS to improve access to markets and social services, facilitate economic

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<sup>1</sup> The TA was first listed in ADB *Business Opportunities* (Internet version) on 13 May 2002.

<sup>2</sup> ADB. 1998. *Technical Assistance to the People's Republic of China for Regional Road Sector Study*. Manila. The study covered Chongqing Municipality; Guangxi Zhuang Autonomous Region; and Guizhou, Sichuan, and Yunnan provinces.

<sup>3</sup> Consisting of the following 12 provinces, autonomous regions, and municipality: Chongqing, Gansu, Guangxi, Guizhou, Inner Mongolia, Ningxia, Qinghai, Shaanxi, Sichuan, Xinjiang, Xizang, and Yunnan. The three prefectures included in the Western Development strategy are in Hubei, Hunan, and Jilin.

growth, and reduce poverty. The Government's policies for the road sector are based on (i) constructing expressways to expand the national trunk highway system (NTHS) and link all cities with a population of more than 500,000; (ii) developing secondary roads, particularly those that will help reduce poverty in the rural areas; and (iii) building roads that will support regional cooperation with neighboring countries in the southwest, northeast, and northwest. The NTHS is the heart of the road network, a system of interprovincial expressways and highways of about 35,000 km. It will be complemented by the development of national, provincial, county, township, and village roads. Most of the remaining NTHS sections will be completed together with 195,000 km of interprovincial highways and 150,000 km of rural roads during the Tenth Five-Year Plan (10FYP, 2001-2005).<sup>4</sup>

6. The link between transport development and poverty reduction is generally recognized.<sup>5</sup> The greater the road development, the higher the per capita income.<sup>6</sup> The Government has been supporting poverty reduction through road sector investments in several ways. First, the focus on NTHS construction has shifted from the east coast to the central and southwest regions, which have a higher incidence of poverty, and where road density is about 10.5 km/100 km<sup>2</sup> compared with 35 km in the east. Second, the vehicle purchase fee, which has financed about 13% of road sector expenditures, has been allocated largely to financing road investments in poorer provinces. Third, Ministry of Communications grants and provincial communications department resources supplement local government budgets to improve county and township roads. Fourth, through the separate budgeting of poverty reduction funds, road improvements are carried out to link an increasing number of villages to the road network, with corresponding improvement in the quality of transport services. For the road sector, the WDS will (i) facilitate economic and social development in the western region, (ii) link the western region with the central and eastern regions, (iii) provide the western region with trade outlets at the southern and eastern seaports, and (iv) promote regional cooperation with neighboring countries. The Government's measures and road development objectives will contribute significantly to poverty reduction in the western region.

7. ADB and the Government have had extensive discussions on how to maximize the poverty reduction impact of road investments. The location of ADB-financed road projects has shifted from the northeast and coastal areas to the poorer central and southwest regions. The shift to poorer interior provinces will be sustained during the 10FYP. To enhance poverty impact, the scope of recent road projects has been broadened to integrate local roads with expressways, thus providing better access to poor counties and townships.

8. GZAR, which is one of the PRC's five autonomous regions, in the southwest part of the country; covers 236,600 km<sup>2</sup>; and is bordered by Yunnan on the west, Guizhou on the north, Hunan on the northeast, and Guangdong on the east, the Beibu Gulf on the south, and Viet Nam on the southwest. The population of GZAR was over 48 million at the end of 2001. Greater Nanning is the capital, with a population of around 3 million. GZAR is a minority autonomous administrative region with 12 ethnic groups. The administration of GZAR comprises 2 prefectures, 12 prefecture cities, 10 county cities, 59 counties, and 12 minority autonomous counties. The region's leading commercial crop is sugarcane. It also produces fruits, pigs, chickens, ducks, and goats. Fishing and aquaculture is extensive. GZAR is a major producer of timber and forest products. It has sufficient coal, bauxite, and iron deposits to support moderate industrial development. Industries include iron, aluminum, steel, machinery, cement, textiles, paper, flour, and silk. GZAR's GDP was CNY223.1 billion in 2001, compared with the national figure of CNY9,434.4 billion. The GDP per capita for GZAR was CNY4,697 in 2001, which was

<sup>4</sup> ADB assisted the Government in identifying road sector investment and policy reforms in the southwestern PRC through TA 3086-PRC (footnote 2).

<sup>5</sup> ADB. 1998. *Technical Assistance to the People's Republic of China for Study on Ways to Support Rural Poverty Reduction Projects*. Manila. Also, Fan, S., Zhang, L., and Zhang, X. 2000. *Growth, Inequality, and Poverty in Rural China: The Role of Public Investments*. Washington, DC: International Food Policy Research Institute.

<sup>6</sup> ADB. 2002. *Road Sector Impact Study: Beijing-Tongjiang Expressway Route in the People's Republic of China*. Manila.

below the national average of CNY7,543. GZAR is a poor coastal region and is included under the WDS. In 2001, GZAR's GDP per capita ranked 29 among the PRC's 31 provinces and autonomous regions. Lack of transport infrastructure is one of the factors contributing to the depressed economic conditions.

9. At the end of 2001, GZAR had about 3,120 km of railways, 53,000 km of roads, and 5,620 km of navigable inland waterways. From 1990 to 2001, domestic passenger transport in all modes grew by 10.3% per annum in passenger-km and freight transport grew at 6.1% per annum in ton-km. Road traffic grew at 13.1% per annum for passengers and 6.0% per annum for freight. In 2001, road traffic accounted for over 75% of total passenger-km, followed by railways with 24.6% and coastal and inland waterways with 0.5%. The modal split for freight by ton-km was railways 62.9%, roads 27.2%, and inland waterways 9.9%. Since 1990, the railway share of passenger traffic has declined by 13.6%, and the road share has increased by 17.0%.

10. The primary target of road development for the 10FYP (2000–2005) in GZAR is to complete construction of expressways on the NTHS and its branch highways that connect to the major ports and surrounding provinces. The secondary target is to accelerate development of county and township roads to assist the poverty areas. By the end of 2005, 7,000 km of new roads are to be constructed, to increase the length of the network to 60,000 km.

11. The existing two-lane 250 km Nanning-Baise road (NH24) is the only road linking Nanning and Baise prefectures. This road serves agricultural and forest lands, and residential areas. The technical standards of NH24 are low—it has many sharp curves and poor pavement conditions. Passing sight distance is poor over much of the road's length. NH24 has exceeded its capacity, which is an average traffic of 10,000 vehicles daily. Traffic includes trucks, buses, motorcycles, three-wheeled vehicles, passenger cars, tractors, bicycles, and nonmotorized vehicles. Conflict of traffic with pedestrian and animal movements, vehicle parking, and farmer's activities on NH24 has exacerbated the situation. A passenger car takes about 5 hours, and trucks take longer, to cover the 250 km between Nanning and Baise. NH24-related accidents represent 65% of the total accidents in Baise City and 71.5% in Tiandong County only. Traffic on NH24 is forecast to reach an average of 14,000–16,000 vehicles per day in 2005, which will cripple the road from 2005 onward, and will significantly inhibit the socioeconomic growth of GZAR. A new road following a new alignment therefore must be constructed to accommodate the expected traffic demand and support the economic development of the region.

12. The proposed Project, construction of the Nanning-Baise road, will comprise a 188.6 km expressway, starting at Tanluo town in Nanning Prefecture and connecting Nanning to the Tanluo expressway (35 km); passing through Long'an, Pingguo, Tiandong, and Tiandong counties; and ending at Baise City. The Project will provide access to major economic zones as well as poor county and township centers in the project influence area, to distribute the anticipated project benefits. The project alignment was selected to minimize adverse impacts.

13. The Government has developed a 5 year plan to upgrade the road networks in the project area. The scope of the proposed Project will be expanded to include local road improvement to enhance the access of poor communities and maximize the distribution of socioeconomic benefits in the project area. The TA will include determining the scope of the local road improvement. The Project will be a key connector linking surrounding provinces, and is an important part of the NTHS. The Project will provide a convenient, or the only, passageway for the western region to access the seaports in GZAR; Hong Kong, China; and Macao Special Autonomous Region, particularly to the ADB-financed Fangcheng Port in GZAR—one of the hub PRC ports, completed

in 2001.<sup>7</sup> The Project also will facilitate regional cooperation between the PRC, Viet Nam, and other countries of the Greater Mekong Subregion; and will facilitate overseas trade.

14. ADB's Fact-Finding Mission classified the project influence area into three categories. (i) The direct project influence area (DPIA)<sup>8</sup> includes a total population of 1.866 million. The DPIA has a high prevalence of minority people,<sup>9</sup> and 25–45% of its population are poor.<sup>10</sup> Of the 788 villages in the DPIA, 413 are classified as "poverty villages" and have 687,000 people, or 37% of the total population. (ii) The areawide project influence area (APIA) covers nearly 5 million people in Baise and Nanning prefectures, among which 25% are poor.<sup>11</sup> Thus, the APIA beneficiaries will include about 75% of the poor in GZAR. In addition, the Government has increased investment in the Pingguo County Aluminum Company, which is in the APIA and depends heavily on the availability of efficient transport. The plant is being increased to twice its capacity with foreign investment. It employs 6,300 workers. The APIA also has five tourist attractions, and hydropower projects. (iii) The indirect project influence area includes all interprovincial and regional beneficiaries.

15. The Project preparatory work by the Government is already underway. The English version of the project feasibility study, prepared by the Guangxi Design Institute, was submitted to ADB in March 2003. The final endorsement of the feasibility study by the State Development Reform Commission is expected in November 2003 and the preliminary engineering design will be completed in September 2003 as per Ministry of Communications standards. The environmental impact assessment (EIA) is scheduled to be completed in October 2003, while the draft resettlement plan are scheduled to be completed in May 2003. The IPSA and rapid environmental assessment carried out during fact-finding helped identify the social and environmental issues that will need to be addressed during the preparation of the Project, and reviewed the need for a comprehensive assessment of the social context in line with ADB policies and guidelines on social dimensions. The rapid environmental assessment concluded that the Project should be an environment category A project (Appendix 2), while the IPSA has designated the project as a poverty intervention (Appendix 2). The IPSA concluded that key social issues to be analyzed further during project preparation are resettlement and project impacts on poor and minority people.

### III. THE TECHNICAL ASSISTANCE

#### A. Purpose and Output

16. The TA will help the Government prepare an integrated roads development project to support pro-poor economic growth and reduce poverty in GZAR.

#### B. Methodology and Key Activities

17. The TA will assist the Guangxi Communications Department (GCD) to (i) refine the feasibility study, including the EIA and summary EIA, resettlement plan, and poverty impact analysis for the proposed Project, in conformity with ADB's requirements; (ii) broaden the scope to

<sup>7</sup> PRC: 1427: Fangcheng Port, June 1997.

<sup>8</sup> The DPIA includes three counties in Baise Prefecture, Baise City, and one county in Nanning Prefecture. It includes a corridor of about 80 km from the proposed project expressway.

<sup>9</sup> There are 7 minority nationalities in Baise Prefecture, who constitute about 87% of Baise's population (3,650,000). More than 200,000 people still face serious lack of food and clothing. Baise's frontier border with Viet Nam is 361 km.

<sup>10</sup> A "poverty village" has an average per capita net income below CNY1,052; more than 70% of its people below the poverty line, or areas facing the worst natural and poor living conditions.

<sup>11</sup> The APIA covers all Baise and about 30% of Nanning prefectures.

make it more pro-poor by integrating a local road component into the Project; (iii) identify socio-economic indicators and the monitoring mechanisms; (iv) confirm the technical, economic, and financial viability of the proposed investments; (v) review and update transport and road profiles; and (vi) provide the basis for further policy dialogue in such areas as the poverty impact of road projects, vehicle emissions, nongovernment financing, expressway corporatization and commercialization, road safety, asset management, and pricing policies for road users.

### **C. Cost and Financing**

18. The total cost of the TA is estimated at \$650,000 equivalent, comprising \$371,700 of foreign exchange cost and \$278,300 equivalent of local currency cost. ADB will provide \$500,000 equivalent to cover the entire foreign exchange cost and a portion of the local currency cost amounting to \$128,300 equivalent. The TA will be financed on a grant basis by ADB's TA funding program. GCD will finance the remaining \$150,000 equivalent to cover the costs of office accommodation and support services, communications, local transport, office supply, and other facilities and services required for the implementation of the TA. The detailed cost estimate is 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**

19. A team of international consulting firms 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 and in accordance with 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 24 person-months of consulting services, including 12 person-months of international and 12 person-months of domestic consultancy, to carry out the study as defined in the outline terms of reference (Appendix 4). The international consultants will provide expertise in (i) highway and traffic engineering, (ii) bridge and tunnel design and construction, (iii) transport economics, (iv) expressway finance and operations, (v) resettlement planning, (vi) poverty and social analysis, and (vii) environmental aspects. The domestic consultants will have expertise in (i) highway and structure engineering, (ii) transport economics and financial analysis, (iii) environment protection and conservation, and (iv) social development and poverty reduction.

20. GCD will be the Executing Agency for the TA and will be responsible for supervision and monitoring of TA activities, and liaison with government agencies and organizations. The consultants are scheduled to be fielded in October 2003, and the consulting services will be carried out over a 5 month period, with the TA due to be completed at the end of February 2004. GCD will provide ADB and the consultants with the feasibility study; engineering studies; EIA; resettlement plan; and any other materials, recent studies, and reports required for the implementation of the TA. The consultants will maintain close relationships with the Government and GCD, and inform them of progress and findings. A tripartite meeting involving the Government, ADB staff, and the consultants will be held in the PRC to provide advice and guidance to the consultants and review their reports.

## **IV. THE PRESIDENT'S DECISION**

21. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of \$500,000 to the Government of the People's Republic of China for preparing the Guangxi Roads Development II Project, and hereby reports this action to the Board.

## TECHNICAL ASSISTANCE FRAMEWORK

Design Summary	Targets Performance Indicators	Monitoring Mechanism	Risks/Assumptions
<b>Goal</b>			
1. Promote pro-poor economic growth and social development in the GZAR.	<ul style="list-style-type: none"> <li>• Economic growth for impacted counties and townships.</li> <li>• Trade volume by road.</li> <li>• Increase in domestic and foreign direct investment in the project area.</li> </ul>	<ul style="list-style-type: none"> <li>• Annual economic reporting at the national and provincial level, and provincial and county statistics.</li> </ul>	<ul style="list-style-type: none"> <li>• Continued rapid economic growth in the People's Republic of China, particularly in the central and western regions.</li> <li>• Adequate funding for road improvements for expressway and local roads.</li> </ul>
2. Reduce poverty in the project area.	<ul style="list-style-type: none"> <li>• Per capita incomes, number of poor people, and access to social services in the project area.</li> <li>• Employment generation during project implementation and operation, and decline in the number of poor people.</li> </ul>	<ul style="list-style-type: none"> <li>• Results of project performance management system.</li> <li>• Project completion report and project performance audit report.</li> </ul>	<ul style="list-style-type: none"> <li>• Implementation of the poverty reduction programs by the local governments.</li> </ul>
<b>Purpose</b>			
1. To remove road transport constraints on the economic and social development in the project area.	<ul style="list-style-type: none"> <li>• Provide a 188.6 km expressway to link Nanning and Baise in northwest GZAR.</li> </ul>	<ul style="list-style-type: none"> <li>• TA reports that are accepted by ADB and the Government.</li> </ul>	<ul style="list-style-type: none"> <li>• Government cooperation in providing TA consultants with sufficient information and data.</li> <li>• Adequate progress on policy issues.</li> </ul>
2. To improve access of the rural population to the mainstream economy.	<ul style="list-style-type: none"> <li>• Prepare a local road component as part of the Guangxi Roads Development II Project.</li> <li>• Develop a participatory monitoring and evaluation plan together with key performance indicators, and develop a mechanism for monitoring during construction and operation.</li> </ul>	<ul style="list-style-type: none"> <li>• Local road component that is accepted by ADB and Government, and adequacy of the component to provide sufficient linkage with the expressway.</li> <li>• Monitoring and evaluation of the key indicators to be developed during the TA, including technical design.</li> <li>• Assess the with and without project benefits, and compare with impact of the opening of current road.</li> <li>• Review missions and consultant's reports.</li> </ul>	<ul style="list-style-type: none"> <li>• Provision of adequate counterpart financing for local roads and other complementary investments.</li> <li>• Installation and maintenance of the key indicators database, and continued efforts in monitoring and evaluation.</li> <li>• Adequate Government funding and plans.</li> </ul>
<b>Outputs</b>			
1. Refine and improve the Government's feasibility study	<ul style="list-style-type: none"> <li>• Project feasibility study improved to a level suitable for ADB financing.</li> </ul>	<ul style="list-style-type: none"> <li>• Consultant's draft final report (DFR)</li> <li>• Updated feasibility study report, and</li> </ul>	<ul style="list-style-type: none"> <li>• High quality services provided by the international and domestic consultants.</li> </ul>

Design Summary	Targets Performance Indicators	Monitoring Mechanism	Risks/Assumptions
and preliminary design for the Project in conformity with ADB requirements.		resettlement plan to be endorsed and accepted by ADB.	<ul style="list-style-type: none"> <li>Sufficient information and data made available for TA implementation.</li> </ul>
2. Carry out a feasibility study to identify local roads for linking poor counties and townships to the road network.	<ul style="list-style-type: none"> <li>A local road component proposed and justified.</li> </ul>	<ul style="list-style-type: none"> <li>Review of the DFR.</li> <li>Local road component accepted by ADB and the Government.</li> </ul>	<ul style="list-style-type: none"> <li>Continued Government initiatives to reduce poverty.</li> </ul>
3. Review the Government's environmental impact assessment (EIA) and prepare a summary EIA in accordance with ADB guidelines.	<ul style="list-style-type: none"> <li>Findings from the review of the EIA included as part of the DFR.</li> <li>Summary EIA prepared.</li> </ul>	<ul style="list-style-type: none"> <li>Review of the DFR during the tripartite meeting involving the Government, ADB, and consultants.</li> </ul>	<ul style="list-style-type: none"> <li>Sufficient data and information provided by the Government.</li> </ul>
4. Prepare a social analysis of the Project and design a monitoring system.	<ul style="list-style-type: none"> <li>Social analysis included as part of the DFR.</li> <li>Impacts on poverty reduction, land acquisition, and involuntary resettlement addressed.</li> <li>Social impact monitoring system</li> </ul>	<ul style="list-style-type: none"> <li>Review of the DFR during the tripartite meetings.</li> <li>DFR accepted by ADB and the Government.</li> <li>DFR</li> </ul>	<ul style="list-style-type: none"> <li>Sufficient information and assistance provided by the Executing Agency.</li> </ul>
5. Prepare a resettlement plan for the Project	<ul style="list-style-type: none"> <li>Resettlement plan indicating the socioeconomic impacts of the Project and impact of involuntary resettlement, including on minorities.</li> </ul>	<ul style="list-style-type: none"> <li>DFR</li> <li>Tripartite meetings</li> </ul>	<ul style="list-style-type: none"> <li>Consistency of Government policies on land acquisition and resettlement.</li> </ul>
<b>Activities and Inputs</b>			
1. 12 person-months of international consulting services and 12 person-months of domestic consulting services.	<ul style="list-style-type: none"> <li>Timely recruitment of consultants in accordance with ADB guidelines.</li> </ul>	<ul style="list-style-type: none"> <li>Evaluation of consultant's proposals.</li> <li>Contract negotiations.</li> <li>Review missions.</li> </ul>	<ul style="list-style-type: none"> <li>Timely management approval of the TA.</li> </ul>
2. Information and data, necessary facilities, and assistance provided by the Executing Agency and Government agencies concerned.	<ul style="list-style-type: none"> <li>Nomination of efficient counterpart staff and delivery of funds as required.</li> <li>Timely submission of information and data.</li> </ul>	<ul style="list-style-type: none"> <li>TA review missions and performance of the TA consultants; quality of the DFR and TA implementation.</li> </ul>	<ul style="list-style-type: none"> <li>Good cooperation of Government agencies and Executing Agency; availability of qualified counterpart staff.</li> </ul>
3. Good quality ADB supervision	<ul style="list-style-type: none"> <li>Timely review of TA implementation and</li> </ul>	<ul style="list-style-type: none"> <li>Inception mission, TA review mission, and</li> </ul>	<ul style="list-style-type: none"> <li>Close monitoring of TA implementation by</li> </ul>

Design Summary	Targets Performance Indicators	Monitoring Mechanism	Risks/Assumptions
of the TA.	appropriate guidance provided by ADB.	tripartite meeting.	ADB and timely fielding of review missions.
4. TA financing of \$500,000 on a grant basis by ADB's TA Funding Program.	<ul style="list-style-type: none"> <li>• TA paper approved by ADB.</li> <li>• TA letter signed by the ADB and the Government.</li> </ul>	<ul style="list-style-type: none"> <li>• Internal review of the TA paper.</li> </ul>	

ADB = Asian Development Bank, DFR = draft final report, EIA = environmental impact assessment, GZAR = Guangxi Zhuang Autonomous Region, TA = technical assistance.

## SOCIAL AND ENVIRONMENTAL ASSESSMENTS

### A. Rapid Environmental Assessment

1. Table A.2 shows the result of rapid environmental screening.

**Table A.2: Environmental Screening**

Screening Questions	Answer		Remarks
	Yes	No	
<b>Project Siting</b> Is the Project area adjacent to or within any of the following ecologically sensitive areas? Protected Area Wetland Mangrove Estuarine Buffer zone of protected area Special area for protecting biodiversity		X  X X X X	Several river crossings
<b>Potential Environmental Impacts</b> Will the Project cause...			
Encroachment on historical/cultural areas:		X	
Disfiguration of landscape by road embankments, cuts, fills, and quarries?	X		Some cuts > than 10 meters
Encroachment on precious ecology (e.g., sensitive or protected areas)?		X	Only local sensitive ecology that can be mitigated
Alteration of surface water hydrology of waterways crossed by roads?		X	
Increased sediment in streams affected by increased soil erosion at construction site?	X		Possible impacts will be minimized
Deterioration of surface water quality due to silt runoff and sanitary wastes from worker's camps and chemicals used in construction?		X	Measures will be taken to prevent pollution
Increased local air pollution due to rock crushing, cutting and filling works, and chemicals from asphalt processing?	X		Minor impacts that can be avoided or mitigated
Noise and vibration due to blasting and other civil works?	X		Minor impacts that can be avoided or mitigated
Other social concerns relating to inconveniences in living conditions in the project areas that may trigger upper respiratory problems and stress?		X	
Hazardous driving conditions where construction interferes with preexisting roads?	X		Possible, needs mitigation

Screening Questions	Answer		Remarks
	Yes	No	
Poor sanitation and solid waste disposal in construction camps and work sites?	X		Possible, needs mitigation
Possible transmission of communicable diseases from workers to local populations?	X		Possible, requires awareness and prevention program
Creation of temporary breeding habitats for mosquito vectors of disease?	X		Possible, needs mitigation
Dislocation and compulsory resettlement of people living in right-of-way?	X		Significant impact; full resettlement plan required
Accident risks associated with increased vehicular traffic leading to loss of life?	X		Road safety program required
Accidental spills of toxic materials?	X		Possible, requires design considerations and emergency response plan
Increased noise and air pollution resulting from traffic volume?	X		Noise impacts will be minimal; vehicle emissions will be reduced
Increased risk of water pollution from oil, grease, and fuel spills, and other materials from vehicles using the road?	X		With road safety programs, risks will be less

2. The ensuing Project will likely fall into environmental category A and if so, a full environmental impact assessment (EIA) will be needed. Further, a summary of EIA need to be prepared and circulated to the Board 120 days prior to Board consideration of the loan Project. The terms of reference of summary environmental impact assessment (SEIA) should include to examine 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, among other things. The TOR 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

### 1. 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 (draft) Yes
Contribution of the sector/subsector to reduce poverty in the People's Republic of China: The transport sector and the road subsector contributes to poverty reduction directly through improved access to market, employment opportunities, and social services, and indirectly by stimulating economic development.	

### 2. Poverty Analysis Proposed Poverty Classification: Poverty Intervention

What type of poverty analysis is needed? Poverty analysis will be carried out to summarize the causes of poverty in the project area, identify areas of highest poverty incidence, prepare a complementary local roads program, quantify how the Project will help reduce poverty, and incorporate other social measures within the scope of project implementation. The analysis will be carried out following the <i>Handbook on Poverty and Social Analysis</i> and <i>Handbook for Integrating Poverty Impact on Economic Analysis of Projects</i> .
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### 3. Participation Process

Stakeholder Analysis – Public consultation and consultations with nongovernment and government organizations will be carried out by the Executing Agency, local government officials, research institute, and other institutes during preparation of the feasibility study, poverty assessment, environmental impact assessment, and resettlement plan.
Participation strategy required Yes

### 4. Potential Issues

	Significant/ Not Significant/ Uncertain/ None	Strategy to Address Issues	Plan Required
Resettlement	Significant	Resettlement plan will be prepared following the Land Administration Law and Asian Development Bank (ADB) policy. The plan will be disclosed to the public and affected people. Internal and external monitoring arrangements will be put in place.	Full
Gender	Not Significant	A transport project of this kind is normally gender neutral. ADB policy on gender and development will be followed by the Executing Agency during project preparation and implementation.	None
Affordability	Not Significant	The Project is affordable to the Executing Agency, and its services and proposed tolls will also be affordable to users. This will be verified in the economic and financial assessments.	None
Labor	Not Significant	Road construction and transportation services will generate employment, particularly for the urban poor. The local labor departments will help identify available labor, with priority given to people from poverty areas.	None

	Significant/ Not Significant/ Uncertain/ None	Strategy to Address Issues	Plan Required
Indigenous People/ Ethnic Minorities	Uncertain	The Project area includes 80–90% minority nationalities, of which Zhuang is the majority in this region. The Zhuang will be affected by land acquisition but they will be compensated under the resettlement plan. There are also Miao and Yao minorities (about 10%) but they are in the mountains and will not be adversely affected. Attempts will be made to include them as beneficiaries by constructing local roads. The local government also plans to move people closer to towns and cities within the county.	Possibly  The RP will include a section on ethnic minorities.  The international consultants will help the EA meet the resettlement plan requirement, in accordance with ADB policy and Land Administration Law.
Other Risks/ Vulnerabilities	Not Significant	<p><b>Impact on Tourism:</b> There are some tourism resources in the project area. Appropriate mitigation measures will be prepared as part of EIA.</p> <p><b>Impact on HIV/AIDS:</b> Although there is a prevalence of cases in this province, the Project is not expected to increase the incidence because the direct project impact area has already been opened up by improved transport systems and industrial development. Project-specific mitigation measures will be prepared to handle issues related to construction workforces.</p>	None, but issues will be studied further.  None, but issues will be studied further.

**COST ESTIMATES AND FINANCING PLAN**  
(\$'000)

Item	Foreign Exchange	Local Currency	Total Cost
<b>A. Asian Development Bank Financing</b>			
1. Consultants			
a. Remuneration and Per Diem			
i. International Consultants	264.0	0.0	264.0
ii. Domestic Consultants	0.0	78.0	78.0
b. International and Local Travel	36.0	3.0	39.0
c. Reports and Communications	1.0	13.0	14.0
2. Equipment <sup>a</sup>	15.0	0.0	15.0
3. Surveys, Miscellaneous Administration and Support Costs	2.0	20.1	22.1
4. Representative for Contract Negotiations <sup>b</sup>	5.5	0.0	5.5
5. Contingencies	48.2	14.2	62.4
<b>Subtotal (A)</b>	<b>371.7</b>	<b>128.3</b>	<b>500.0</b>
<b>B. Government Financing</b>			
1. Office Accommodation and Transport	0.0	100.0	100.0
2. Remuneration and Per Diem of Counterpart Staff	0.0	35.0	35.0
3. Others	0.0	15.0	15.0
<b>Subtotal (B)</b>	<b>0.0</b>	<b>150.0</b>	<b>150.0</b>
<b>Total</b>	<b>371.7</b>	<b>278.3</b>	<b>650.0</b>

<sup>a</sup> Including computer hardware and software, photocopier, fax machine, and other equipment to be procured under the consultants' contract and whose ownership will be transferred to the Government.

<sup>b</sup> Includes cost of travel to Manila and per diem for government's observers attending consultants' contract negotiations at ADB Headquarters.

Source: Asian Development Bank estimate.

## OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

### A. Highway and Structural Engineering

1. Review all technical aspects of the feasibility study and preliminary engineering designs of the expressway component. Recommend, where required, design changes, construction methods, and facilities. In consultation with the Guangxi Communications Department (GCD) and Public Security Bureau of the Guangxi Zhuang Autonomous Region (GZAR), prepare a road safety management plan to be incorporated as part of the proposed Project.
2. Review the preliminary design of bridges, and tunnel portals, tunnel ventilation, lighting, and safety measures including the emergency plan. Review the drainage system's capacity, geological conditions, soil treatment measures, and pavement design.
3. Prepare an inventory of the road network for each county and city of the project area. Examine the adequacy of the Government road plan to provide efficient linkages with the new expressway. Identify an improvement program for secondary and tertiary road networks, including provincial, county, and township roads. Following selection of the local road program for inclusion in the Project, review its technical design, aspects, and specifications, and suggest improvements method. The local road development program, which will be developed as an integral part of the Project, will enhance the distribution of the anticipated project benefits to the hinterland and the rural population in the project area.
4. Review bills of quantities, unit prices, and costs of (i) civil works for the expressway construction and local road improvement component, and (ii) equipment and other facilities to be procured under the Project for the expressway and local roads. Review the overall road maintenance operation, cost, and management systems in the GZAR. Recommend a suitable asset management program to monitor conditions and operational requirements of the expressway and its connecting roads in the project area.
5. Review the proposed contract packaging for civil works, equipment, and services to be procured under the Project's expressway and local roads component.
6. Review construction supervision requirements, recommend appropriate international and domestic supervision consultants' inputs, and estimate the associated costs.
7. Prepare a project implementation schedule and performance monitoring program, covering all project components including the expressway and local road program (construction and operations), procurement, equipment, and consulting services. Develop an appropriate method of monitoring, including involvement of the domestic and international consultants of the Project, to continue to assess (i) the progress, trends, and benefits of the expressway and local roads; and (ii) the government road plan, to stress the role of the new project in complementing the GZAR's road network and benefiting the whole community.

### B. Transport Economics

8. Review the current status and future plans for road development in the GZAR and the project area. Prepare a comprehensive economic and social profile of the project area, including the expressway, local roads program, and government plan. Assess the impact of the Project in supporting pro-poor growth and poverty reduction in terms of the share of benefits accruing to the poor, including the with and without the project scenario and impact of the project.

Assess the role of the Project in promoting interprovincial and foreign trade; developing domestic markets; and generating employment opportunities, tourism, business development, population growth, urban development, and impact on other travel modes. Assess the benefit of the current Nanning-Baise road, which was completed about 3 years ago. Establish a regime of benefit monitoring, based on this scenario, to create a foundation for a database that will be used to examine the social impact and benefits of the project.

9. Assess the current road maintenance system for all road classes in the GZAR, including data collection, human resources, costs, and financing, at the regional, city, county, township, and village levels. Review the government revenues and expenditures of the road sector.

10. Review and update traffic counts and origin-destination surveys. Analyze traffic data and patterns between GZAR and neighboring provinces, as well as key seaport activities. Identify types of traffic that will benefit the poor and demonstrate the link between the Project and poverty reduction. Prepare detailed expressway of the traffic forecasts and local roads for each type of vehicle, and assess the anticipated average annual daily traffic and potential toll.

11. Review the vehicle operating costs by vehicle type. Assess travel time savings, changes in travel pattern, and efficiency of traffic flow for the expressway and local roads, and identify benefits, including low transport cost.

12. Undertake the economic evaluation of the overall Project, according to the *Guidelines for Economic Analysis of Projects* of the Asian Development Bank (ADB), by comparing the with- and without-project cases. In addition to the funding required to maintain the road capacity, the without-project alternative will include any cost of works required to accommodate the without-project traffic. Value project costs and benefits in economic prices. Use a standard conversion factor of 0.926 or a shadow exchange rate factor of 1.08. For the economic analysis of the local roads component, analyze, itemize, and quantify the economic benefits and costs of the local roads improvement. Calculate the net present value of the project components using a discount rate of 12%. Calculate the economic internal rate of return for the expressway and the local roads, and for the Project as a whole. Undertake sensitivity analysis by varying project costs, benefits, toll rates, implementation periods, traffic, and a combination of these factors. Indicate the toll levels for which the economic of internal rate of return falls under the cutoff rate of 12%. Calculate switching values and compare the results with those obtained for ongoing or completed Hunan expressway projects. Carry out a risk analysis using the Monte Carlo method by considering the possible values for key variables based on the past records, and their occurrence probability, in accordance with ADB's *Handbook for Integrating Risk Analysis in the Economic Analysis of Projects*.

13. Based on the outcome of the economic, social, and poverty analyses, carry out a distribution analysis of net project benefits and calculate the poverty impact ratio for the expressway component alone and the Project including the local roads program, in accordance with ADB's *Guidelines for the Economic Analysis of Projects*, and *Handbook for Incorporating Poverty Impact Analysis into Economic Analysis of Project*. Develop a project performance management system.

### **C. Financial Analysis and Expressway Operation**

14. Review and update the financing plan for the proposed Project. Calculate a discounted real return to equity over the project life, and assess its suitability for attracting private investors. Undertake in current terms a financial evaluation of the Project in accordance with ADB's

guidelines for the *Financial Governance and Management of Investment Projects Financed by the Asian Development Bank*. Calculate the financial internal rate of return in real term based on the anticipated traffic and the proposed toll rates. Justify and propose appropriate toll rates by type of vehicle. Undertake sensitivity tests by varying the toll rates using the Ministry of Communications-ADB *Toll Diversion Model Application Manual*.

15. Prepare in current values the financial projections for the proposed expressway operating entity over a 10 year operation period. Calculate the debt ratio and working ratio, and assess financial sustainability. The financial assessment of the proposed operating entity should cover (i) corporate planning and budgetary control, (ii) financial management, (iii) cost accounting, (iv) internal control and audit, and (v) data processing and recording.

16. Assess the current organizational structure of the Guangxi Expressway Administration Bureau (GEAB), the GCD, the proposed EA of the Guangxi Roads Development I Project, and the relationship between GCD and GEAB. Review commercialization, corporatization, prospective private sector participation and policy reform issues, and examine potential planning, resources needs, impact on the operation and maintenance of the expressway and local roads, and efficiency of the administration.

17. To support good governance in the subsector and based on the ongoing expressway securitization processes in the GZAR, recommend a corporate structure and appropriate schedule to achieve sound and sustainable commercialization of the expressway operating entity. Review the current status of private sector participation in the GZAR, and assess benefits.

#### **D. Social and Poverty Analysis**

18. Following the initial social assessment, undertake a social and poverty analysis in accordance with ADB's poverty reduction strategy and *Guidelines for Incorporation of Social Dimension in Projects*.<sup>1</sup> Based on secondary data sources, review and analyze the income distribution in the project area, and collect additional primary data to establish the income distribution patterns. In addition to the poverty assessment based on income criteria, assess the poverty incidence based on nonincome criteria in accordance with the methodology developed under ADB technical assistance.<sup>2</sup> The poverty and social analysis will include (i) identifying the potential beneficiaries and the population likely to be affected adversely; (ii) preparing socioeconomic and poverty profiles of the project area at the prefecture, county, and township levels using (when necessary) participatory rural appraisal techniques, socioeconomic sample surveys, and ADB's poverty classification; (iii) assessing the affected population's needs and demands; (iv) identifying potential social risks of the Project; and (v) reviewing and documenting the public consultation process undertaken by the Government regarding route selection, environment, and resettlement, and identifying complementary means of information dissemination, including the Internet. Examine gender issues and potential health impacts separately for the project implementation and operation phases. Identify measures to prevent the spread of sexually transmitted infections in the Project area. Identify specific mitigation measures related to HIV/AIDS<sup>3</sup> and prepare plan to handle construction workforce issues.

<sup>1</sup> ADB. *Handbook for Incorporation of Social Dimension in Projects*, and the *Handbook on Poverty and Social Analysis*. Manila.

<sup>2</sup> ADB. 2000. *Small Scale Technical Assistance to the People's Republic of China for Preparing a Methodology for Development Planning in Poverty Blocks under the New Poverty Strategy of PRC*. Manila.

<sup>3</sup> HIV/AIDS = Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome.

19. Consult with minority peoples living in the project area as identified in the social analysis and assist GCD to prepare the minority peoples' development plan in accordance with the ADB's indigenous people policy.

20. Assess the issues of poverty line, income distribution, labor for unskilled, and potential income generation activities for the poor, e.g., fruit trees planted along the rural roads. Assess the possibility of establishing community-based groups to help the unemployed and poor to benefit from growth in the project area as a result of expressway construction, operation, and linkage with local road networks. Identify potential benefits due to better education, health, services, and market opportunities as a result of the project development. Nonincome indicators should also be considered, such as production of grain crops/year/person; net cash income/year/person; quality of housing; access to drinking water supply, electricity, and transport; women's health, and school dropout rate. The poverty activities and lessons learned by nongovernment organizations (NGOs) in the project area should be identified.

21. Identify a suitable methodology to assess the impact of the Project on poverty reduction and prepare the poverty impact matrix. Consider macro effects resulting from economic growth as well as micro impacts resulting from improved access. Demonstrate how economic growth will be relevant to, and can be made even more relevant to and inclusive of, the poor and minority populations. Based on an analysis of the poverty reduction specific to the project area, identify which factors need to be modulated and how, so that effective complementary road infrastructure development is achieved and accelerates the poverty reduction and social development impact in the project area. Assess the economic impacts of the local roads development program on the poor population and minority people. Assess the prospects for generating incomes for poor communities through the implementation of the Project, including employment creation in project construction and operation. Identify public participatory mechanisms in project planning, design, and implementation. Identify NGOs active in the project area and their possible involvement in project design, implementation, monitoring, and evaluation. Develop a profile of the quantity, quality, and prices of transport facilities and services available to the poorer groups in the project area.

22. Based on the outcomes of the social and poverty analysis, recommend key issues to be addressed in preparing, designing, and implementing the Project, including monitoring and evaluation systems that will form part of the overall project performance management system. Recommend (i) a set of income and nonincome indicators to monitor the poverty reduction impact of the Project, with baseline and time-bound targets for each indicator; (ii) appropriate time-bound framework/mechanisms for monitoring the socioeconomic impacts of the Project, including recommended staff resources; and (iii) a questionnaire and minimum data that will be used for evaluation during construction and operation of the project.

23. Review the government's policy, and ongoing and planned programs for poverty reduction in the GZAR and the project area. Analyze how the Project will complement these efforts to reduce poverty, and consequences of not constructing the project on the effectiveness of the government plan and the poor. Suggest specific complementary activities to enhance the positive impact of the Project on the poor. Identify NGOs that may contribute to poverty reduction through their participation in project implementation. Provide an effective analysis to support the classification the project as a poverty intervention if justified by the data, including direct, areawide, and indirect project influence areas.

## **E. Environmental Impact Assessment**

24. Review, update, and modify, if necessary, the environmental impact assessment (EIA) in accordance with ADB's *Environmental Guidelines for Selected Infrastructure Projects* (1993) and ADB's *Environmental Assessment Requirements* (1998). Prepare a summary EIA based on ADB's format for the expressway and the local road component. Assist GCD in ensuring adequate public participation, and reconfirm public participation and translation of the summary EIA for relevant minority people.

25. Assess the environmental conditions in the project area, including natural resources and historical monuments, as well as the current negative environmental impacts resulting from industrial activities and road traffic. Analyze the likely impact of vehicle emissions and suggest appropriate mitigation measures. Review current government policy and regulations.

26. Determine incremental costs of the proposed environmental mitigation measures, and assess the expected benefits, where possible. Based on the EIA and in consultation with the GZAR's Environmental Protection Bureau, prepare an environmental monitoring plan to be incorporated in the project performance management system.

## **F. Resettlement Planning**

27. Consult with the affected people, local leaders, project proponents, and those who may be opposed to the Project to assess their concerns and consider possible changes in the project design in response to these concerns. Review the adequacy and consistency of the government-prepared resettlement plan with ADB's *Policy on Involuntary Resettlement*, *Handbook on Involuntary Resettlement*, and *Guidelines for Resettlement Plans in the People's Republic of China*. Assess the government's approach and methodology in preparing the resettlement plan, in particular with regard to (i) census survey and asset inventories that identify villages that may be more severely affected (i.e., losing 20% or more of the agricultural land); and (ii) poverty and minority villages. Ensure the conduct of a socioeconomic village impact survey as a basis for resettlement planning. In general, the survey should cover a selection of all villages affected, but severely affected and poor villages should receive more attention.

28. Expand the socioeconomic survey to assess, through household interviews in severely affected and poor villages, the relocated or affected people's income levels, expenditure patterns, landholdings, skill base, preference and aspirations, and asset inventory to develop income replacement strategies.

29. Prepare a summary resettlement plan for the expressway and the local road components. Document the degree to which the plan has been made public and the degree of consultation with the affected people. Assess the plan's consistency with the government regulations. Identify special measures to help the poor and vulnerable affected people improve their status. Recommend income generation and gender measures in poor communities. Assist GCD to prepare a resettlement information booklet and distribute it to the people affected.

30. Develop a system for independent monitoring and evaluation of resettlement activities including a 10% baseline survey, along with annual updates during implementation, on completion and 1 year after completion. Sufficient inhabitants should be carefully selected so that the information gathered qualifies as the first 10% baseline survey.