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The Asian Development Bank & Integrated Transport System

by

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I. INTRODUCTION

1. The Asian Development Bank (ADB) is a multilateral development finance institution dedicated to reducing poverty in Asia-Pacific region (region). Established 35 years ago, it is now owned by 61 members mostly from the region. ADB has over 2,000 employees from nearly 50 countries. It raises funds through bond issues on the world's capital markets, and also relies on contributions from its members.

2. ADB is a broad-based development institution. Policy advice, capacity building, and human resource development efforts accompany loans. The need for development assistance has grown enormously in size and complexity amidst a changing global environment.

3. Transport infrastructure development, however, remains an essential area of ADB's assistance since adequate roads, ports, and railways are needed to ensure sustainable and efficient pro-poor economic growth, improve economic productivity, and create the conditions in which the private sector can prosper. Good infrastructure is also needed for the efficient delivery of social services such as education and public health.

4. This paper begins by outlining Asia's demographic and macroeconomic context of infrastructure development. The paper then introduces an overview of the highway, urban transport, and port sectors. It then describes ADB's strategy in financing projects, and how ADB is helping the People's Republic of China (PRC) meet its infrastructure requirements of roads and ports, primarily under the ADB's public sector operations. The paper also highlights ADB's future lending program, and describes ADB's private sector operations.

II. ASIA'S DEMOGRAPHIC AND MACROECONOMIC CONTEXT

5. ADB's developing member countries (DMCs) are in the midst of a fundamental transition in their populations and human resources that bear, on many key dimensions of their social and economic development. Many changes are a testament to the development success in the Asia-Pacific region. However, success in the region is far from even. Many millions of people live in abject poverty, suffer unacceptably high level of mortality (1).

6. Many DMCs will experience significant increases in their population over the coming decades. Urban population growth will be more rapid. The medium-growth scenario produced by the United Nations in 2001 anticipates that the total population of DMCs will increase from 3.27 billion in 2000 to 4.24 billion in 2025 and 4.77 billion in 2050. The population of the PRC is expected to increase by 200 million, Indonesia by about 100 million and Philippines by 50 million between 2000 and 2050. About two thirds of the growth is anticipated to occur by 2020.

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7. In 2001, the growth in world GDP was estimated at 4%. Following the impressive recovery of 1999, the economic performance of Asia strengthened further in 2000 – 2001. PRC registered robust GDP growth of about 8% with virtually no inflation pressure, while the Republic of Korea showed strong growth (9.2%) with only moderate inflation. Mongolia also maintained a good performance with 4.0% growth (1).

8. During the 1990's, global trade grew smartly, and Asia was in the lead. Table 1 shows selected region's percentage share of world merchandise exports (2).

Table 1 Selected Region's Percentage Share of World Merchandise Exports

Region	1999 (%)	2000 (%)
Asia	21.8	26.7
Latin America	4.3	5.8
Eastern and Central Europe	3.1	4.4
Middle East and North Africa	4.0	4.2
Sub-Saharan Africa	3.1	2.3

9. In the coming years, events within DMCs will have an enormous impact on infrastructure features. Most of the world's population and economic growth is occurring in DMCs. Asia will be home to most of the world's urban growth, with many ultralarge cities, and large numbers of people concentrated in small geographic zones. Asia also will continue to experience significant rural population growth, about 1% per annum. By comparison, there is no average rural population growth in Latin America.

10. The growth in population and socioeconomic development are creating both challenges and opportunities. Achieving a livable urban environment will be one of the key challenges faced by DMCs over the coming years. Development of efficient transport systems will be required. Already high demand for adequate facilities and services will increase. Job creation and food production will remain high on the agenda. Stress on the environment and poverty reduction will inevitably rise.

III. ROAD TRANSPORT SYSTEM

A. Highway

11. The availability of adequate road infrastructure is essential for the efficient movement of people and goods. The lack of main intercity road networks together with rapidly expanding urbanization in the region require capable road capacity, efficient transport planning, and a sustainable approach. The highway network in the region is still under development. For example, the PRC had about 1.6 million km of roads at the end of 2001, with the second largest expressway in the world, after the United States. But the PRC's road network is still underdeveloped in both quality and extent, with low density of 1,100 km of roads per million inhabitants. Comparative figures in other geographically large countries are about 1,800 km for India, and 25,300 km for the US (3). On the other hand, vehicle ownership is still low in many countries despite the rapid increase in vehicle ownership and demand for road space. For example, there are only about 1.3 vehicles (truck/car/bus) per 100 persons in PRC, 2.5 in India, 5.0 in Indonesia, and 14.3 in Thailand, compared with 60 in Australia, and 65.3 in Japan (3).

12. Asia's share, as percentage of the world total, of population, buses and trucks, and two wheelers is much higher than that of Organization for Economic Cooperation and Development members. Asia's share of gross national product and vehicles meanwhile is lower (5), see Table 2.

Table 2 Comparison of Asia and OECD – 1990's (% of the world total)

	Population	Vehicles	GNP	Buses / Trucks	2-Wheelers	Road Accident Deaths
OECD	18	68	81	5	2	25
Asia	57	14	9	95 [all DCs]	98 [all DCs]	49

GNP = \$US 26,907, 628 million.

13. In PRC, the heart of road network development is the National Trunk Highway System (NTHS), a system of interprovincial expressways and high-class highways of about 35,000 km to be constructed over a 20-year period up to 2010 (see Table 3). About 17,900 km, or 51%, had been completed as of end 2000. The NTHS will be complemented by the development of a network of new national, provincial, county, and township roads. The Government views road development as a key component of its strategy to improve access to markets and services. In particular, the Government's investment plans for the road sector outline the need to provide infrastructure to facilitate economic growth and reduce poverty. Government policies for road development are based on the following principles: (i) constructing expressways to expand the NTHS to link all cities with a population of more than 500,000; (ii) developing secondary roads, particularly those that will help reduce poverty and promote rural markets; and (iii) building roads that will support regional cooperation with neighboring countries in the southwest, northeast, and northwest.

14. The 10th Five-Year Plan (10FYP, 2001-2005) calls for (i) accelerating the construction of the backbone network of highways and national roads, with a focus on five north-south and seven east-west expressways included in the NTHS, and achieving full opening of three north-south and two east-west expressways; (ii) achieving the initial construction of eight new highways in the western region to improve the structure of the highway network and its reach; and (iii) having approximately 1.7 million km of highways open to traffic by 2005, with expressways accounting for 25,000 km. To improve road conditions, the 10FYP will support highway construction in the rural areas and the Government will complete roads that link poor counties with national and provincial highways. The current status of road development in PRC and targets for 2005 are shown in Table 3.

Table 3 Road Development Plan in the 10FYP - PRC

	2000 (km)		2005 (km)		Increase (%)	
	National	Western	National	Western	National	Western
Total	1,400,000	572,000	1,600,000	650,000	14	14
Expressway	16,300	4,000	25,000	11,000	53	175
Class I and II	146,100	38,000	255,000	70,000	75	84

15. In March 2000, the Government adopted the long-term Western Region Development Strategy.² This strategy, being the key theme of the 10FYP, aims to reduce development disparities between the western region of the country and the coastal region. Road development is given highest priority as an effective means to promote economic growth and reduce poverty in the region. In the road sector, the strategy aims to (i) facilitate economic development and poverty reduction in the western region, where road density is less than half the national average; (ii) link the western region with the central and eastern regions; (iii) provide access to trade outlets for the western region at the eastern and southern seaports; and (iv) promote regional cooperation with neighboring countries to the west and southwest of the PRC.

B. Urban Transport

16. In ADB's DMCs, economic expansion and the tremendous growth in population and motor vehicle use, coupled with the enlarged capacity of heavy vehicles, and the attraction of people into urban areas for work or leisure have led to a sharp increase in demand for more road space and services. The developed economy of the Asia-Pacific region is predominantly urban and urbanization is expected to continue for some years. In the region, motor vehicle fleets are growing at two to three times the rate of population, and motor vehicle usage is increasing even faster. The exceptionally high growth of motorized two- and three-wheelers and the use of non-motorized transport (NMT) such as tricycles is another aspect of transport in the region. Urban transport is enormously complex. It operates in a context associated with integration of a large number of disciplines. Essential as the movements of people and goods are to the economic and social aspects of community life, they present people and their surrounding with the problems of congestion, road safety, and vehicle emissions. In many cities in the region, the supply of urban transport has not matched the increased demand, due to lack of infrastructure development. As a consequence, DMCs face alarming urban challenges. Although the per capita car ownership levels are at present only one third of those in the developed world, city roads in Asia are increasingly congested.

17. Some people spend many hours each day getting to and from work and home. The region accounts for almost half of all road accident deaths in the world, while cities are among the worst in terms of air pollution. There is increasing pressure to find solutions for urban transport problems, which is not an easy task. The problem is very large and there is a need for a non-traditional approach.

18. According to World Bank and ADB studies, in most developing countries the urban sector accounts for 50-70% of GNP. Cities in developing countries often devote 15-25% of their annual expenditure to their transport system. Between 8% and 25% of urban household income is typically spent on transport and the transport sector often accounts about one third of city infrastructure needs.

19. Today about 38% of developing Asia's population lives in cities – some 1.2 billion people. By 2020 the proportion of urban residents will rise by 50%, with the population of cities reaching 2 billion. About half of these people will be poor and reside in slums (4).

20. By 2020, there will be at least 153 cities in Asia with a population over one million. Eighteen of the world's 27 megacities – cities with over 10 million people – will be in Asia. In

² Consisting of the following 12 provinces, municipalities, and autonomous regions: Xinjiang, Qinghai, Gansu, Ningxia, Xizang, Sichuan, Yunnan, Guizhou, Shaanxi, Chongqing, Inner Mongolia, and Guangxi.

PRC, the urban population has increase from 190 million in 1980 to 360 million today. By 2010, an estimated 700 million people will live in cities.

21. Yet Asia's developing countries are only experiencing the beginning of a remarkable shift of people and economic activity from agrarian communities to urban industrial centers. Within these cities mortised road transport is the main mode of movement, while NMT, and two- and three-wheelers also performs an important role in short distance transport of passengers.

22. The vehicle population in Beijing, for example, grew about threefold from 540,000 to 1,570,000 between 1991 and 2000. Between 1995 and 2000, Delhi's motor vehicle population grew from 2.43 million to 3.25 million. Every day about 400 new cars hit the roads in Bangkok. Ho Chi Minh City in Viet Nam and Penang in Malaysia have about 300 motorcycles per 1,000 persons. It is projected that there will be 70 million motorcycles in PRC by 2015 (1). Similar growth exists in other cities in the region. Many of the cities now have the highest travel time and the greatest congestion in the world (7).

23. In addition, the PRC has the highest growth in population, vehicle, and road accident deaths in the region (see Table 4).

Table 4 Growth in PRC and Asia - 1990s (%)

	Population	Road Deaths	Vehicles
PRC	9	41	184
Asia	16	39	113

24. It is worrying that the current infrastructure development in developing countries has not been matched by corresponding investment to develop efficient urban road networks. To mitigate the problems and accommodate increasing demand for travel, it is necessary to undertake actions through (i) expansion of current roadways; (ii) provision of a new road network system with adequate capacity; (iii) improvement of the transport planning process and initiatives; (iv) development of road, safety, accident prevention, and emission control measures; (v) development of integrated transport system and a sustainable strategy; and (vi) strengthening of institutional capacity.

C. Congestion

25. Congestion may be defined as 'the state where vehicular traffic causes stop-start conditions, delays and accumulating queues for other traffic travelling at the same time, because travel demand to the road facility exceeds supply' (6). Traffic congestion is much worse in Asia's large urban areas than in the US and Europe. At present, traffic volumes per square mile in Europe are approximately 50% higher than in the US, while Canadian volumes are nearly 20% higher. Traffic volumes are more than 80% higher in the denser Asian urban areas (7). To reduce congestion in the establishment of a new urban context it may be possible to introduce a hierarchical road system where the layout of built-up areas takes account of the current traffic situations and future demand on road networks to avoid potential discordances. In existing areas of highly populated centres the situation is complex, since the demand for road space is always higher than supply. Even if the necessary financial resources are available, the pattern of land use and urban structure restrict the development of new facilities. Thus, dealing with urban traffic congestion effectively necessitates the examination of the period of its daily occurrence and the level of seriousness of the problem, together with its cause and control.

26. As a result of congestion, traffic speeds are slower. In the US, average roadway speed in urban areas is nearly 32 miles per hour. European speeds are less than 20 miles per hour, while Canadian speeds are less than 25 miles per hour. Asia's high-density urban areas have speeds less than 16 miles per hour. All this is occurring despite the fact that motorization is still at a relatively early stage in most DMCs. Most developing cities have less than 100 cars per 1,000 people, compared with 400 or more in developed countries. It is expected that Asian cities would continue to experience a very high rate of motor vehicle and population growth, and more pressure on the current fragile road networks for some years to come.

D. Vehicle Emissions

27. Vehicular traffic is the largest single source of pollution. Congestion makes things worse. Asian cities are among the worst in terms of air quality in the world. And cities and emissions are both getting larger. The annual cost of dust and lead pollution in each megacity in the region is estimated at over \$1.5 billion, or 10% of city income. In addition, there is the concern that vehicle emissions may be having a substantial impact on greenhouse gas effects and climate change, with greater implications for the global environment. (8)

28. The economic impact of pollution in urban areas in terms of loss of productivity and health costs is estimated to exceed 10% of GDP in some countries.

E. Road Safety

29. Road safety may be defined as a 'major health issue, associated with negative socioeconomic growth, and poverty problems' (9).

30. Road deaths and injuries are increasing at a faster pace in Asia than in other regions of the world. Asia accounts for almost half of all estimated worldwide road accident deaths (the current Asia's share is around 0.5 million), with an estimated economic loss of more than \$35 billion annually. This is more than double the amount of annual foreign development aid the developing countries receive, and equivalent to 2-3% of individual country's GDP (5). There are also 10-15 million people crippled or injured every year in vehicular accident in the region, according to the World Health Organization (WHO). According to the World Bank studies, 50% of hospital beds in Bangladesh are often occupied by road accident victims.

31. In 2001, there were about 755,000 road accidents, in PRC alone, killing 106,000 and injuring 546,000 that was up from 617,000 accidents, 94,000 deaths, and 420,000 injuries, in 2000. This amounts to 1 death every 5 minutes, the highest rate in the world. Malaysian traffic fatalities comprise around 60% motorized two-wheelers, and around 20% motorized vehicle drivers. In India, fatalities among pedestrians is around 45%, while among motorized two-wheelers is around 30%.

32. WHO put the regional road accident deaths even higher, and the majority in urban areas. Available studies indicate that the number of deaths and injuries in the region is under-reported (by up to 42%) and there is a lack of reliable data and monitoring systems (10).

33. Without effective action, the annual death toll is expected to increase sharply within this decade. This inhibits the economic and social development of the region. The following observations are associated with the current road safety conditions in the region (i) road safety has not been given the priority it deserved during the development of highway and urban

infrastructure; (ii) there is a lack of integration of urban road systems and highway network programs; (iii) the poor are most affected by ineffective road safety conditions.

34. Many of the problems encountered with road safety are predominantly institutional in nature, with fragmentation of responsibility, inadequate coordination, insufficient information, inadequate road audit, lack of detailed plans, as well as shortages of staff and resources. Currently, there is no comprehensive program to promote road safety in the region. There is a need to promote innovative ways to improve road safety through the following broad-based initiatives (i) establishment of national road safety councils using an integrated strategy and modalities for greater government leadership (ii) capacity building and human resources development; and (iii) promotion of research, preventative measures and monitoring.

F. Freight Transport

35. Freight vehicles account for a larger proportion of road traffic in Asia, and cities are largely dependent on the availability of freight transport. Due to the lack of efficient transport systems, and poor management, freight transport suffers congestion, delay, unpredictability and difficulty of conducting proper business in most cities. The impact on the environment, road safety, and road conditions due to over loaded vehicles are other problems associated with the industry. The privately owned fleet of freight vehicles has increased significantly during the past decade. At present, trucks accounted for over 41% of total privately owned vehicles in some countries. With rapid economic growth, it is expected that vehicle ownership will continue to increase rapidly in the coming years. This will result in substantial increases in the volume of road traffic and mounting congestion. The high share of slow-moving traffic, mainly tractors, bicycles, and non-motorized agricultural vehicles, aggravates road congestion, and is also a major cause of traffic accidents, and transport problems.

36. The availability of adequate road infrastructure is essential for efficient freight transport. The need for main intercity road network together with rapidly expanding urbanization in the region require sustainable transport planning, and an efficient strategy to manage heavy vehicle operations.

G. Transport planning

37. The role of planners is to rationalise the movements of people and goods to provide satisfactory service. Planning of road transport has its roots in highway engineering. For many years the main objective of planners was to ensure the reasonable flow of motorised traffic only. Consideration of engineering and economic elements formed the main recommendations of major transport studies around the world. With the increasing negative impacts of motor vehicle operations, transport professionals are now facing complex challenges. A better understanding of the community expectation becomes necessary. Mitigation of the environmental impacts is required. The interaction between land use development, population and transport provision should be a vital component. Integration of the geometric, safety, enforcement, accessibility and economic elements should also be a key part of any process. Management of heavy vehicle movements should be intermixed with those of private cars, public transport, NMT, and pedestrians (11). The wider the urban area, the greater the complexity of the transport operations because of the broad variety of land use and the large movements of people and goods. With more people living in urban areas, and an increase in vehicular traffic and its negative effects, it is becoming increasingly necessary to plan the development of transport systems in a balanced way that will provide efficient and effective services for the whole community.

38. To consider the elements of transport planning, to assess existing development and future demand, and to learn lessons from the major cities of the developed world, a two stage planning policy should be adopted in Asia as follows: (i) short-term planning policy: this should involve short term situations as well as problems of daily activities; and (ii) strategic planning policy: this should be concerned with looking ahead 15 to 20 years, and should deal with the development of transport systems as an integral part of the overall land use context.

H. Travel Demand Management (TDM)

39. TDM is emerging as a fashionable concept in plans for better urban development, since traditional traffic management techniques have reached their effective limits in most modern cities in the world (12). The goal of TDM is to modify tripmaker behaviour to enhance transport efficiency and minimise its impacts. TDM is a developing discipline and its measures include (i) integration of urban road transport with urban characteristics and intercity highway; (ii) effective management of road traffic; (iii) encouragement of intermodal development; (iv) enforcement of traffic; and (v) road user charges. The key to TDM success is the use of the right measure. This depends on such factors as the objective of the strategy, local conditions, and the nature of the built up area. Some TDM measures currently in use in Asia include the Area Licensing Scheme in Singapore, Electronic Road Pricing in Hong Kong, and partial restriction of vehicle use in Manila. Consideration of some TDM measures in Asia's developing countries as components of a comprehensive strategy will be necessary.

I. Sustainable Transport and Poverty

40. A sustainable transport system is one that is safe, efficient and environmentally friendly. Sustainable transport is about integrating economic, social and environmental considerations into decisions effecting transport activities. In Asia, sustainable transport systems are required and this has been driven by the following issues:

(i) Unless the current transport situation is enhanced, the resultant economic and social costs could erode a substantial part of the benefits of economic development. The consequences of inaction could include millions of premature deaths and injuries, billions of dollars in medical costs, increased strain in welfare services, loss of productivity, congestion, and poverty problems.

(ii) Transport planning and impacts have not been given the priority they deserve during infrastructure development. Without achieving road safety and smooth traffic flow, for example, the impact of a government's investments in other poverty-related initiatives is diminished.

(iii) Road projects have always achieved greater economic returns, but they can perform even better if safety and other issues are part of the objectives. Better roads and increased freight operations could bring more damage than benefits, in long run, if safety is ignored.

(iv) The most direct benefits of roads, especially from vehicle operations cost saving, accrue to the vehicle operators, but these are not fully transferred to poor road users. Safety and clean air are the only benefits that accrue to all including the poor. If some users cannot safely reach their destination, the road does not achieve its full potential.

(v) Companies interested in the emerging opportunities for private sector financing of transport infrastructure want more certainty and transparency in decision making to reduce the risk of investment. Sustainable transport will allow clear allocation of responsibilities and clear measures for judging performance.

(vi) The current widespread of globalisation phenomenon, and membership of WTO, necessitate actions to be taken to adopt sustainable transport approach, avoid the potential sever constraint on economic, tourism, employment and social development as well as capable transport systems, for just-in time delivery.

(vii) A lack of efficient transport, together with sprawling urban structures, is making the journey to work and activity centres costly and long for the poor. The poor are also taking a heavier burden of the negative externalities generated by the transport sector, since they do not own vehicles. They are vulnerable to consequences of motorized traffic, such as accidents, and suffer from exposure to pollution. Transport development that improves access, therefore, can be a starting point in poverty alleviation.

VI. PORT SECTOR

41. Unlike roads, ADB involvements in the port sector are limited, particularly in the PRC. There are two main types of ports in the PRC, seaports and river ports. There are over 460 seaports along the 18,000 km coastline. Twenty six of these are main ports that account for 86% percent of all port traffic in the PRC. There are about 2,000 river ports controlled mainly by local municipalities. Although the ports in the PRC operate on a 24-hour basis in response to the demand for higher services, the operations are inefficient because of congestion in the approach areas to the ports and transport links to the hinterlands, the use of obsolete equipment and technology, and the excessive reliance on brak-bulk cargo handling methods.

42. Foreign trade in the PRC has increased rapidly since economic reforms began in 1978 and totaled over \$310 billion in 2001. In 2002 (Jan. – Sep), the PRC has registered an export figure of \$445.2 billion, an increase of 18.3% compared with 2000. The PRC import figure during 2002 (Jan. – Sep.) was 212.6, and increase of 17.2% from 2000 (13). Around 90% of international trade is handled at the seaports. Ports and costal shipping also play an important role in domestic, and some international, transportation by providing and alternative north-south transport mode. Container traffic in PRC has also continued to grow, particularly with the development of new specialized container berths during the 1990s. Containerization provides opportunities to facilitate trade, reduce damage to goods and improve reliability, thereby reducing inventory costs for business enterprise.

43. Apart from insufficient specialized berths compared with the projected growth in traffic, the main constraints facing port operations in the PRC are skills shortages, inadequate water depths, and constraints in access to the hinterland. Reducing congestion in the port storage areas by using onshore handling and storage equipment could also help to improve berth efficiency. A related weakness in the ports systems is the delay in shipping caused by inefficient customs and quarantine procedures, and port services such as pilotage.

44. Some ports also have depth limitations of about 10 m. To accommodate fully loaded large container vessels, the depths should be around 15 m. Expansion of container port facilities for intermediate size container ships at key ports is necessary to overcome the problem of access to the hinterland due to inadequate road, rail and waterway services.

45. Port development planning in the PRC must take into account the changing technology at sea and the results to be anticipated by the investment and marketing strategies adopted by the national and local governments, port operators, and ship owners. The most notable consideration is the continued rapid increase in the containerization of interregional traffic accompanied by rapid increase in interregional trade among the countries of Asia. In 2001, PRC's total export to the main Asian countries was 40.4%, see table 5.

Table 5 2001 Direction of PRC's Trade (million US \$)

Country	Export
USA	75,519
Hong Kong	59,973
Japan	47,501
Korea, Republic of	11,738
Germany	10,462
Netherlands	7,664
United Kingdom	7,323
Singapore	6,126
France	5,244
Italy	4,827
Total	310,240

46. The most significant factor affecting port planning in the PRC is the growth, cost and congestion of container traffic, particularly through Hong Kong. Port investments need to be responsive to this rapid containerization growth. Port management strategies also need to consider more carefully the potentially greater flexibility available to ship owners in switching container ship size, routes, and shipping company alliance. Strategies should provide port managers with the authority to adopt greater flexibility in their marketing efforts, which must be tailored to meet the need of port users. Efficient containerized links to inland destinations is also necessary to attract more port users. Efforts to improve the efficiency of trade documentation through electronic data interchange are required. Development of intermodal transport is required, especially when the highway and rail networks become well integrated with the port, urban transport and land use planning.

V. ROLE OF ADB IN INFRASTRUCTURE FINANCING

A. Strategic Objectives

47. Poverty reduction is ADB's overarching objective. ADB has a long history of supporting the development of infrastructure in the Asia-Pacific region. Infrastructure development requires long-term financing. Adequate and efficient infrastructure is needed to promote pro-poor economic growth in the region. This is a major challenge in the PRC, for example, given its vast size and large population, and the fact that PRC is in the midst of a far reaching transition from a centrally planned economy to a market economy. These factors make universal access to roads, ports, markets, and services difficult, particularly among the millions of people living below the poverty line in rural areas.

48. ADB's support for infrastructure development does not simply involve the provision of loans to finance priority projects. An important part of ADB's operational strategy is to create a policy environment that is conducive to the efficient development and expansion of the needed

infrastructure facilities. Thus, ADB provides technical assistance (TA) grants to help prepare projects, to assist the Government in undertaking policy studies, and to build institutional capacity in the planning, financing, implementation and monitoring of infrastructure projects. Lending, policy advice and institutional capacity building are used to implement the operational strategies for the road, port and railway sectors. The impact of infrastructure development on the poor is carefully assessed, including social and environmental dimensions.

49. Promoting cost recovery and alternative methods of financing, including private sector participation, are common themes that ADB is pursuing. Projects that enhance regional cooperation, such as roads linking Yunnan Province and Guangxi Autonomous Region with the countries in the Greater Mekong Subregion also merit special consideration.

Road Sector

50. ADB's specific strategic objectives in the road sector are as follows:

- Constructing roads that connect major growth centers and promote linkages with hinterland economies.
- Integrating the local and urban road networks with the national trunk highway system to ensure that a system of roads provides adequate access to poor areas.
- Promoting road safety.
- Adopting appropriate pricing policies to ensure optimum use of road transport capacity and to promote cost recovery.
- Promoting private sector investment through securitization, leasing, listing of shares or build-operate-transfer (BOT) projects.
- Building capacity to increase the commercial orientation and efficiency of road operations.
- Improving highway and urban road administration and evaluation techniques.
- Facilitating the development of integrated and sustainable transport system, and promoting better transport planning practice.
- Promoting regional cooperation.

Port Sector

51. In the 1990's, ADB had complimented Overseas Economic Cooperation Fund of Japan and World Bank investments, which provided most of the external assistance for the port sector in the PRC. The policy dialogue undertaken by ADB during the processing of the port projects covered;

- decentralization of port management
- cost recovery, e.g. tariff setting
- integrated transport system and regional development
- private sector and foreign investments
- capacity building
- management of foreign exchange risk
- redesign of accounting system and standards
- competition in the port sectors
- regional cooperation
- enhance port capacity, and socioeconomic in the hinterlands of the ports.

B. LIBOR-based Loan

52. In July 2001, ADB launched a new loan product under its ordinary capital resources (OCR). The London interbank offered rate (LIBOR)-based loan (LBL) is designed to better address the needs of borrowing member countries. LBLs are being offered to ADB's public and private sector borrowers to replace existing loan facilities.

53. LBLs initially carry a floating lending rate consisting of the LIBOR six month rate, and spread fixed over the life of the loan, which starts from the date the loan takes effect. The new lending facility gives borrowers flexibility in the choice of (i) loan currencies, (ii) interest rate scheme, and (iii) repayment terms. Borrowers have the option to request for conversion to fix or unfix the interest rate of the loan any time or at regular intervals during the life of the loan. The payment dates are on the 1st or 15th of any month of the year. Interest and other charges are computed on the basis of a 360-day year of 12 30-day months.

**Table 6 Indicative Lending Rates under the LIBOR-based Loan Facility*
(Interest rate as of 3 October 2002)**

	Floating Rate	Fixed Rate			
Period	6 month	3 year	5 year	7 year	10 year
US\$	1,689	2,660	3,350	3,870	4,340

* The following lending spreads should be added to the above rate: public sector borrowers - 0.60% per annum fixed for the entire life of the loan. Private sector borrowers - the spread will depend on the credit and project risk of the loan.

54. The following table shows an example amortization schedule for a road development project.

**Table 7 Amortization Schedule of \$300 million Road Project Loan
(Term : 25 years. Funds : LBL. Board consideration : 5 Sep. 2002)**

Payment Number	Payment due	Installment Share (%)
1	1 March 2008	0.83
2	1 September 2008	0.87
6	1 March 2010	1.01
7	1 September 2010	1.06
15	1 March 2015	1.56
16	1 September 2015	1.64
25	1 March 2020	2.54
26	1 September 2020	2.67
39	1 March 2027	5.29
40	1 September 2027	5.54 (final)
Total		100.00

C. ADB's Project Cycle

55. ADB's project cycle involves various phases, including:

- **Pre-Investment:** This phase includes identification of a project by interested agencies, submission of a proposal to a central government for approval, and inclusion of the project in the country strategy program (CSP). The CSP normally involves annual meetings between the relevant central government body and ADB team. Following its preparation, the CSP then produces a proposal for final ADB and government endorsement.
- **Project Preparation and Appraisal:** These phases deal with ADB technical assistance to assess the feasibility study, social, environmental, technical, and institutional issues of the project, followed by an appraisal mission and other ADB processes.
- **Loan Negotiation and Approval:** This phase involves ADB/Borrower negotiation, ADB approval and signing of documents.
- **Implementation:** This phase covers loan effectiveness, project commissioning, condition / installation, completion and operation.
- **Post Evaluation:** This phase deals with project assessment, re-evaluation, impacts, and lessons learned.

56. In PRC, the Ministry of Finance (MOF) is ADB's official counterpart agency. Projects proposed for ADB funding under its public sector program must be channeled through MOF, which coordinates with the State Development Planning Commission (SDPC). ADB formally consults with MOF and SDPC twice a year to review the list of proposed projects and TAs and make adjustments as necessary.

D. Lending Operations

57. As of 30 June 2001, ADB had approved 82 loans to PRC with the total loan amount more than \$10 billion. Loans for infrastructure development account for almost 75% of total lending volume (see Figure 1).

E. Road Projects

58. Since 1991, ADB has provided 22 road loans totaling nearly \$3.6 billion, to finance 3,000 km of highway development, together with an associated 4,484 km local road network. Local roads have been included in the project scope since 1995 to make ADB's intervention in the road sector more pro-poor. Among the road projects financed by ADB, 14 have been completed and are open to traffic. Most expressway projects are being implemented ahead of the original construction schedules and within the original costs. Key findings of the post evaluation of completed projects have indicated that the projects are successful or highly successful.

F. Port Projects

59. Since 1991, ADB has provided 6 loans totaling nearly \$254 million to finance the development of five ports in the PRC. ADB has also financed several seminars and provided TAs to help the PRC identify constraints and enhance reforms in the port sector. All projects were accompanied by TAs to enhance port planning, operation and management. One example is the 1993 seminar on *Port Investment and Competition* in Tianjin, and TA for *Management and Operational Strategies for Port Authorities*. ADB also participated in the 1995 ESCAP study

Privatization in Ports, Waterways, and Dredging, including preparation of *Guidelines for Private Sector Investments in Ports and Dredging*. ADB has supported expressway projects, which facilitate the port operations, such as the Hebei expressway (and Port of Qinhuangdao). An international conference was convened in January 1999 in Beijing to advance reform in the port sector. All TA items, and recommendations of the seminars were either implemented, or are being implemented, with the assistance of ADB staff and a consultant team. To date, five port projects are fully operational. Evaluation of the completed projects indicates that the projects are successful or highly successful. (See Table 8.)

Figure 1 Sector Distribution of Approved Loans (as of 30 June, 2001)

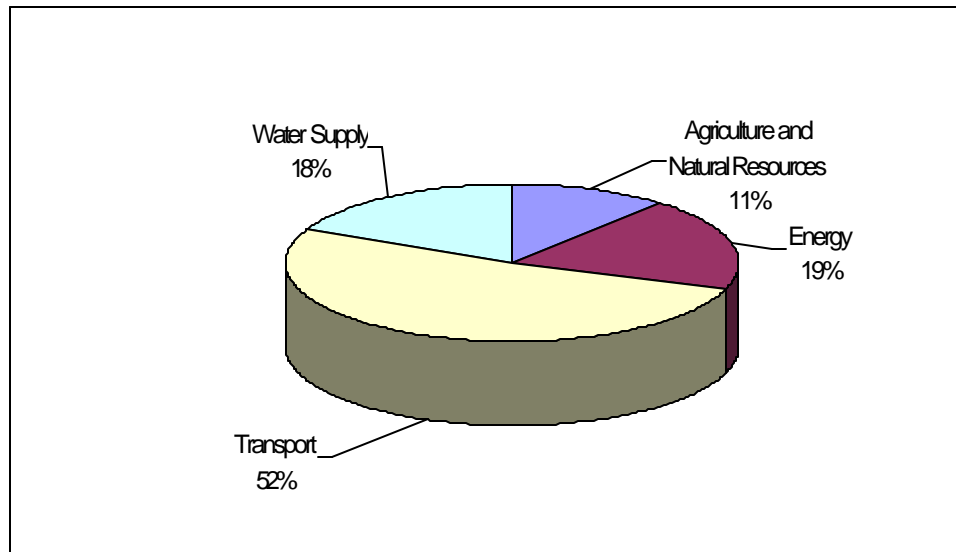


Table 8 ADB-Financed Port Projects in PRC

Port	Completion Date	Loan (million US\$)
Dandong	1995	88.8
Yingkou	1996	
Yantai I	1997	
Fangcheng	2001	52.0
Yantai II	2001	63.0
Xiamen	2003	50.0

1. Dandong, Yingkou, and Yantai I Ports Project

60. In PRC, the first ADB-financed port project was approved in December 1991. The total Project cost was estimated at \$259.6 million equivalent. The ADB loan was \$88.8 million to finance all the foreign exchange cost plus some of the local cost. The Government financed the remaining local currency cost.

61. The objectives of the Project were to foster economic development and improve economic efficiency in the hinterlands of the ports of Dandong, Yingkou, and Yantai. These are primarily in Liaoning and Shangdong provinces, and include parts of Jilin, Shanxi, Shaanxi, Henan, and Hebei provinces. The Project aimed to remove physical constraints on the growth of foreign and domestic trade, and enhance efficient port operations and cost recovery.

62. As a result of economic reforms, rapid economic development took place in the hinterlands of the Project ports generating increased volumes of domestic and foreign trades. Expanding the capacity of the Project ports was necessary to support the economic reform process, cope with the consequential increase in traffic, and improve operational efficiency. The following criteria were used to define the investment at each port: (i) consistency with the master plan for port development; (ii) focus on the most urgently needed capacity expansion; (iii) increased port operational efficiency through the use of modern cargo-handling equipment; (iv) the least-cost method for increasing port capacity; (v) adequacy of transport links to the hinterland; and (vi) environmentally sound development. In addition to capital investment, further policy reform in the port subsector was required to promote economic development and port efficiency.

63. The Project comprised (i) construction of port facilities including deepwater berths, access channel and basins, and improved road and railway access to the ports and storage areas; (ii) procurement of cargo-handling equipment, harbor craft, commodity inspection and other equipment; and (iii) consulting services and training. The proceeds of the loan were relented by the Borrower, the PRC, to the Executing Agencies (EAs) for the three port components: Dandong Port Authority (DPA), Yingkou Port Authority (YKPA), and Yantai Port Authority (YTPA). Two technical assistance (TA) grants³ were approved together with the loan. The objectives of TAs were to (i) identify ways of increasing foreign investment and competition in the PRC port subsector, (ii) improve port operational efficiency at the Project ports, (iii) strengthen computer operations in the ports of Yingkou and Yantai, (iv) expose financial management staff to international accounting and financial management practices, and (v) facilitate the introduction of improved Port Costing Management Information System (PCMIS) at the Project ports.

64. Project Schedule: The implementation period envisaged at appraisal was about five years from the loan approval date of 13 December 1991. The Project was completed on time. Procurement of all goods and services financed by ADB was fully completed in 1998. Railway access to Yantai Port, which was not financed under the loan, was also completed in 1998. A total of 34 contracts for international competitive bidding (ICB), 1 for local competitive bidding (LCB), 44 for international shopping orders, and 16 for direct purchase (DP) were implemented for the three port components under ADB financing. International consultants were recruited under the loan to assist the executing agencies. The consultants successfully improved the staff capacity and skills in port operations and financial management, and introduced and mobilized the PCMIS for the ports.

65. Environmental and Social Impact: The Project has no significant environmental impact. Mitigative measures were incorporated in the Project and implemented by the EAs. All of the dredged materials were used for reclamation or dumped into an area enclosed by cofferdams. Sprinkler trucks for cleaning coal dust on the wharf, equipment for spilled oil recovery and treatment, and vessels for the collection of solid waste and contaminated oil were included in the Project to reduce potential environmental impacts, contribute to the improvement of the work environment in the port area, and better comply with the requirements of the Marine Pollution Convention (1973/78). Afforesting a buffer zone between the port area and residential or commercial area was also carried out to reduce noise and dust from port activities. To ensure that the port development and operation are environmentally sound, Environmental Protection

³ TA No. 1626-PRC: *Port Management and Operations* for \$575,000 approved on 13 December 1991; and TA No. 1627-PRC: *Port Financial Management Project* for \$565,000, approved on 13 December 1991.

Units (EPU) were established within the respective port authorities. EPU have contributed to environmental protection in the Project ports by (i) incorporating environmental mitigation measures in the design of port facilities, (ii) monitoring the environment in the port area in cooperation with concerned departments of the municipal governments, and (iii) preparing regulations and guidelines for environmentally sound port operations.

66. As most of the land required for construction of the Project facilities was within the boundaries of the Project ports and under the jurisdiction of the EAs, land acquisition and resettlement were required only for railway access. Resettlement for the railway access in Yantai Port did not involve resettlement of the local population. It involved mainly the relocation of ore stockyards inside the port and replacement of buried pipelines and cables at an intersection with one main road in Yantai City. No significant social impact was associated with these relocations, however, the negotiation and coordination for these civil works were time-consuming. The Project is considered to have a positive social impact because it has provided the local population with more employment opportunities.

67. **Benefits:** The traffic at Dandong Port in 1997 was 2.20 million ton (t), which was very close to the appraisal forecast of 2.11 million t. Based on this trend, traffic was forecast to grow about 4 - 5 % annually. At Yingkou Port the traffic in 1997 (15.8 million t) was 58 % higher than the appraisal forecast (10.0 million t). Traffic was forecast to grow about 4 - 5 % a year, higher than the appraisal estimate. The traffic at Yantai Port in 1997 was 15.60 million t, about 30 % higher than the appraisal forecast of 12.22 million t.

68. After the Project became fully operational in 1995, the first benefits experienced by Dandong Port were the reduced constraints on domestic and international trade, upgraded port services, and enhanced cost control. The result is increased traffic diversification and competitiveness. DPA also benefited from human resource development and introduction of a more modern port management system. The average ship turnaround time decreased from 3.1 days before the Project to 2.8 days in 1997. Traffic increased from 1.43 million t in 1993 to 2.06 million t in 1996 and 2.20 million t in 1997.

69. The benefits experienced by Yingkou Port were the reduced constraints on domestic and international trade development due to increased port capacity. The new communications and computer system also improved management operations and contributed to overall port efficiency. Total cargo throughput increased from 6.7 million t in 1993 to 15.8 million t in 1997. The average ship turnaround time was reduced from 7.5 days in 1993 to 3.5 days in 1997.

70. The first benefit experienced by Yantai Port was the reduction of constraints on the development of international containerized traffic. Growth in container traffic had ceased in 1997 due to the limited container-handling facilities and resumed in 1998 with the installation of the Project facilities. A further benefit is the reduced lighterage costs for large vessels with more than 10.5-meter draft. These vessels can now be serviced at the Project facilities.

71. **Conclusions:** The construction of Project facilities and the procurement of equipment were completed successfully and helped accommodate the substantial increase in cargo volumes at the three Project ports. The Project has contributed to the development of the hinterland by removing physical constraints on foreign and domestic trade and improving efficiency in port operations. The Project is considered generally successful.

2. Fangcheng Port Project

72. The Fangcheng Port Project's rationale was to promote the economic growth of the poor areas of Guangxi Zhuang Autonomous Region (GZAR) as well as the western region of the PRC by addressing transport constraints through increased port capacity, modernized operations, and improved transport linkages to the hinterland of Fangcheng Port.⁴ The Project aimed to remove physical constraints on the growth of foreign and domestic trades, and to enhance cost recovery. The scope of the Project included (i) a port component for \$32.0 million to construct a one-berth container terminal and a one-berth bulk cargo terminal at Fangcheng Port; (ii) a highway component for \$20.0 million to construct a 20-km stretch of the 45 km two-lane port access expressway connecting the port with Nanning by way of Natan; and (iii) support for policy reforms in port pricing, management efficiency and autonomy, human resources development, and strengthening of port and highway planning institutions, construction, and operation and maintenance. The Project was estimated at appraisal to cost \$135.0 million equivalent, and fully completed in 2001.

73. The Project benefits the poor community and therefore meets ADB's overarching goal of poverty reduction and its objective of developing integrated transport systems. As estimated at appraisal, implementation of the Project has met the following objectives: (i) provision of bulk cargo and container facilities for the port hinterland to improve operational efficiency of Fangcheng Port and increase its capacity from 6.98 million t to 10.89 million t; (ii) promotion of integrated transport planning and development of an intermodal transport system linking rail, road, and sea; (iii) easing the hinterland's traffic congestion and enabling the efficient movement of people and goods; (iv) the development of human resources to strengthen institutions responsible for port and highway construction, management, and operations; (v) development of the hinterland's economy to create more employment opportunities and raise the living standards of the people; and (vi) support for implementation of the nation's strategy to develop its western parts and foster regional and international trade (particularly with Viet Nam).

74. In its first full operational year, the throughput bulk terminal (berth no. 9) reached 2.50 million t, 0.5 million t over its design capacity. In 2001, its throughput furthermore reached 3.03 million t, with yearly occupancy of over 50%. A total of 151 ship calls were handled during 2000-2001, of which more than 120 were above 10,000 deadweight tons (DWT). The operation of berth no. 9 has also played a very important role in relieving the congestion of deep-water berths and shortage of stockyards at the port and has consolidated position of the port in handling large quantity bulk cargoes.

75. The operation of berth no.10 has pushed the container trade at Fangcheng Port into a new development stage and has provided hardware conditions for the expected and foreseen rapid development of the port's container trade. In 2001, the container traffic at Fangcheng Port reached 20,126 twenty-foot equivalent units (teu), 26.4% up from the previous year. Currently there are eight regular container vessels serving the port every week. Several international shipping lines have opened regular service at Fangcheng Port and established representative offices in provinces of the hinterland.

76. **Policy Reform:** Fangcheng Port Authority (FCPA) is managed under a business license. The license establishes FCPA as an independent legal identity and provides for autonomous management of the port, in line with the Government's decentralization policy initiated in 1994.

⁴ ADB. 1996. *Report and Recommendation of the President to the Board of Directors on the Proposed Loan to the People's Republic of China for the Fangcheng Port Project*. Manila.

FCPA is now proposing to reform and commercialize its operations and management by founding a public limited company, through issuing publicly offered shares, to which all the port operational assets would be transferred.

77. FCPA has undertaken several policy measures to reduce operational expenses, improve efficiency, and enhance revenues, such as: (i) cutting expenses by 8% in 2000 and another 5% in 2001; (ii) improving cargo turnaround time by removing bottlenecks at the port premises; (iii) introducing a quality assurance system, installing an advance computerized management system, and complying with International Organization for Standardization (ISO) conditions; (iv) strengthening planning, construction, operation and maintenance institutions; (v) developing a thorough human resources program; and (vi) working toward the target of being fully self sufficient.

78. Fangcheng Port is one of the 19 hubs of PRC ports and is defined as class 1. It is the principal port of the GZAR, handling over 70% of its shipping cargo traffic; serves the landlocked provinces of southwestern PRC; and is the focal point to connect southwestern PRC with Southeast Asia, particularly Viet Nam. It also has a good natural location with deepwater and shelter, and now has 27 berths. With the current sustained development, Fangcheng Port has extended its business scale and output capacity, including loading and unloading, storage, passenger transport, and handling of a variety of products.

79. Road connections have been radically improved following the completion of the project highway. The port is one of 13 national port enterprises owning railway self-operation. It enjoys good conditions for sustainable development and a very favorable site for continuous extension. There are six planned berths, 11-16, to be fully completed by 2005. The port exercises good quality control, has a large open storage area, modern equipment, and a good reputation among its customers.

80. The future of the port, its city, and the region, which are all growing rapidly, are closely linked. A large proportion of the downtown area immediately adjacent to the port is port land, on which the port residential area, school, hospital, hotel, and offices are situated, and these lands are a major asset of substantial value. The population of the surrounding port districts increased from 770,000 in 2000 to over 780,000 in 2001, while passengers visiting the districts for work or leisure increased by 200,000 in 2001 compared with the previous year. More than seven joint ventures have also been established with domestic and foreign partners. Overall the Project is rated highly successful

3. Yantai II Port Project

81. The Second Yantai Port Project's rationale was to promote economic growth by addressing transport constraints through increased port capacity, modernized operations, and improved transport linkages. The Project aimed to remove physical constraints on the growth of foreign and domestic trades, and to enhance cost recovery. A loan of \$63 million from ADB's ordinary capital resources was approved on 12 December 1995 to finance part of the \$160 million Project.

82. The Project covered: (i) civil works for the construction of two container berths, capable of handling 15,000 DWT and 30,000 DWT, respectively, and two conventional cargo berths, of 15,000 DWT and 20,000 DWT vessel, respectively, and related facilities; (ii) procurement of container and other cargo handling equipment, port service vessels and vehicles; and (iii) staff training in port management, construction administration, and port planning.

83. The Project achieved its objective within the cost estimated at appraisal. The port had registered, in fiscal year 2001, a significant cargo throughput of 2190 million t, against the target of 2030 million t. This represented an outstanding growth of 23.4% over 2000 figure (17.74 million t). The container throughput also showed significant growth in 2001 to 120,000 teus.

84. The project facilities, which came on stream at the end of 2001, have greatly improved the infrastructure of container business. The newly dredged channel and turning basin as well as the project terminals have added a further port handling capacity, and this has attracted an increasing number of large-sized vessels to the port. In the first 8 months of 2002, the actual port's traffic recorded 18.28 million t, while the container traffic was 95,000 teus. At the end of 2002, it is anticipated that the annual traffic will be 27.43 million t, and 150,000 teus of container. This will be higher than the appraisal forecast of 2289 million tons.

85. The success was derived from the improvement of the port facilities, as well as some active marketing measures undertaken by YTPA. In 2001, YTPA successfully made a bid for coal export orders and also made new business explorations in respect of the import of timber, sulfur and steel scrap. Moreover, YTPA has opened new container shipping lines to Hong Kong and Taiwan.

86. The port had concluded negotiations with 2 container-shipping companies, which will start regular services from Yantai to Japan and is negotiating with another shipping company to increase the frequency of regular service from the Republic of Korea. These will add at least 40,000 teus to the port's present traffic. Regular services between Yantai-Inchon and Yantai-Dalian have already started as reflected in the increased number of ships calling in the port during the first quarter of this year compared to last year. The port also had an advantageous position to capture most of the cargo originating from the new Export Promotion Zone (EPZ), located contiguous to the port boundary. The EPZ was formally put into operation in January 2001. In PRC, this is the only processing zone, with direct access to port facilities, and the port will provide excellent shipping conditions to the relevant 70 enterprises. These enterprises alone will add over 50,000 teus of container cargo and nearly one million tons of bulk/break bulk cargo per annum.

87. The port has already started deriving benefits from the project. The construction of project facilities has also helped in providing employment opportunities to the local population, particularly from the poor rural areas around Yantai Port Township. With the modern container and bulk terminal operations commencing more employment opportunities in port related services will emerge. The provision of ADB financed project facilities in the port has been instrumental in the opening up of the Special Economic Zone in the immediate backyard of the port, which has contributed to increased employment opportunities in Yantai and its neighborhood.

VI. ADB's FUTURE PLANS

88. ADB has recently increased its lending to the PRC to an annual average of \$1.5 billion, for 2003-2005.

The increase in lending, the current average annual level of about \$1 billion, aims to help the PRC restructure its economy and reduced poverty by promoting sustainable and pro-poor economic growth, with transport dominating ADB operations.

89. ADB's operations in the PRC aim to improve income levels and reduce poverty. ADB has shifted its geographic focus. The 2002 and proposed lending programs will finance projects in the less developed central and western regions. A prime means to boost incomes and cut poverty is through improving roads, and railways that will promote economic development in poor areas and allow greater access to markets and social services. Highway projects will include programs to develop local roads to improve the access of rural communities to economic growth centers.

90. As of 30 June 2001, 348 TA grants, amounting to \$180 million, had been provided to the PRC, covering a broad range of sectors. An annual technical assistance program of about \$14 million will complement the current lending program. This will support policy reforms aimed at sustainable development and equitable growth, and focus on developing an enabling environment for the private sector, capacity building in the public sector, promoting good governance, and environmental protection in cities and rural areas.

Table 9 Example of ADB's Future Highway / Railway Program

Year	Lending Program	Loan Amount (\$million)
2002	Shanxi Road Development II	137.0
	Southern Sichuan Roads Development	300.0
	Western Yunnan Roads Development (Baoshan-Longlin)	250.0
2003	Ningxia Roads Development	250.0
	Yichang-Wanzhou Railway	500.0
	Xi'an Urban Transport	250.0
2004	Chongqing Road Development	300.0
	Guangxi Roads Development II	200.0
	Hunan Roads Development II	300.0
	Yunnan Dali-Lijiang Railway	200.0
2005	Guansu Roads Development	300.0
	Sichuan Roads Development	200.0
	Taiyuan-Zhongwei Railway	250.0

Urban Transport and Road Safety in PRC

In late 1999, ADB provided the Ministry of Public Security with a TA grant aimed at deepening the understanding of road safety and traffic management problems, enhancing capacity of its 180,000 traffic police, producing promotional material, and developing national road safety action plan. In 2002, the TA has produced a national program to enhance road safety in the PRC (14).

In addition, the 2003-2005 program will provide the following assistance:

- Xi'an Urban Transport: \$250 million Loan
- Road Safety Improvement: \$700,000 TA
- Urban Transport Development: 2 TAs (\$700,000 each)

VII. PRIVATE SECTOR OPERATIONS

91. Private developers of infrastructure projects may seek financing from ADB. The Private Sector Group, based in ADB's Manila headquarters, evaluates project proposals submitted by prospective private sector sponsors.

92. Overall Strategy: ADB's private sector development strategy is designed to: (i) help establish the right conditions for businesses; (ii) generate business opportunities in which the private sector can participate; and (iii) catalyze private investments through direct investments by ADB and by mobilizing additional resources through its cofinancing and guarantee operations. For ADB to provide financing, projects must have clear development impacts and/or demonstration effects that go beyond the benefits captured in the financial rate of return.

93. Country-specific strategies are formulated taking into account the stage and status of private sector development. Priority areas for ADB's operations include financial services (including investment funds), infrastructure development and support for small- and medium-sized enterprises. Private sector participation in social sectors, such as pilot projects in health and education, is also being promoted. Themes that run through all country strategies are improving the policy, legal, and regulatory environments and the governance regime so that the rules of the game are clear, transparent and impartially enforced. Another area of ADB involvement is to help stamp out corruption – the enemy of legitimate business.

94. Eligibility and Extent of ADB Assistance: To be eligible for ADB private sector assistance, the proposed investment must be predominantly owned by either domestic or foreign private investors. An enterprise owned jointly by private interests and the government may be eligible, provided the business is controlled or managed independently and autonomously by the private investors. ADB's maximum direct support for a project, including loan, equity investment, guarantee and underwriting commitment, is limited to 25% of the total project cost or \$50 million, whichever is lower. ADB's policy is to limit equity investments to less than 25% of the total issued capital. ADB will not seek a controlling interest in an investee company and will not assume any management responsibilities. ADB, however, reserves the right to appoint its nominee to the company's board of directors and will exercise its voting rights as a shareholder.

95. Loan Terms and Conditions: Interest rates of ADB loans to the private sector are in line with market rates prevailing in the relevant country and sector, and factor in the country and project risks. Typically, ADB provides floating rate loans at a spread above LIBOR or equivalent inter-bank rate, depending on the choice of currency (US dollars, Yen or Euro). Fixed rates are also available. Depending on the project's cash flow profile, the maturity period can extend up to 15 years with a reasonable grace period. ADB may also charge an appraisal fee to cover its upfront costs associated with due diligence. In addition, project sponsors also reimburse ADB for certain out-of-pocket expenses such as travel expenses, legal fees and outside services.

A. Private Sector Operations in the PRC

96. During the next five years most of the jobs created in the PRC economy will be created in the private sector. Jobs and better income earning opportunities will enable people to escape poverty. Thus supporting the development of private sector is one of ADB's major weapons in its fight against poverty. ADB supports the development of the private sector by working to improve the environment in which the private sector operates. This helps to create opportunities for private sector funded projects. ADB also provides loans and equity investments for selected

private sector ventures that have a significant development impact and cannot be financed only from commercial sources. ADB helps to mobilize additional resources through its cofinancing and guarantee operations. ADB's private sector strategy will focus on infrastructure development, financial intermediation, and projects that promote the development of SMEs.

97. ADB has financed three private sector infrastructure projects in PRC (two power projects—the Pearl River Project in Guangdong Province and the Meizhouwan Project in Fujian Province—and one water supply project in Chengdu). ADB financing for these projects totals \$71.5 million. ADB has also invested in several regional funds, which support infrastructure development in PRC.

Table 10 ADB's Private Sector Infrastructure Projects in PRC

Name of Company	Amount (\$US million)			Year of Approval
	Loan	Equity	Total	
Guangzhou Pearl River Power Company	5.0	-	5.0	1992
Fujian Pacific Electric Co., Ltd (Meizhouwan Power Project)	40.0	10.0	50.0	1998
Chengdu Generale des Eaux-Marubeni (GEM) Waterworks (Chengdu Water Supply Project)	26.5	-	26.5	1999

B. ADB's Assistance

98. ADB has provided the Government with assistance (i) in preparing a feasibility study of financing a road project using the build-operate-transfer (BOT) scheme, and for capacity building in relation to BOT processes; and (ii) in developing institutional capacity to promote corporatization, joint venture, leasing, and securitization, and other practice such as revenue bond financing, to attract private sector participation in the road sector.

At present, ADB is holding in several funds that invested \$122.7 million in equity in seven road projects, mostly in the eastern coast of PRC. The projects in which ADB has participated are well established in the market with satisfactory track records and quality assets.

99. Key Issues in private sector participation, include (i) Regulatory framework, (ii) Lengthy approval process, (iii) Institutional capacity to enhance local government efficiency, (iv) Legal status, (v) Founders issue of a share limited company, (vi) Debt/Equity split, (vi) The concept of competitive leasing, (vii) Land use certificate, (viii) Traffic volume and Tariff, (ix) Asset valuation, and (x) Profitability of corporations

VIII. CONCLUSION

100. The infrastructure Division of the East and Central Asia Department in Manila would be pleased to provide additional information. The address of ADB in Manila is : 6 ADB Ave, Mandaluyong City, 0401 MM, Philippines, Tel (632) 632 6808, Fax : (632) 636 2426, E-mail : kjrai@adb.org.

101. In Beijing, the ADB's Resident Mission would be pleased to provide additional information to interested parties. The address of Beijing office is: Beijing China Merchants International Financial Center, No.156 Fuxingmennei Ave., Xicheng District, Beijing, Tel: 86 10 66426600-05, Fax: 86 10 66426606, E-mail: adbprcm@adb.org.

102. Information on ADB's technical assistance and loan projects is available in *ADB Business Opportunities*, a monthly publication sold through ADB's Office of External Relations. Other publications are available on ADB's web site at <http://www.adb.org>. Information relative to business opportunities such as new and forthcoming projects, procurement, consulting services, private sector operations, cofinancing opportunities can be also found under **The Business Center** page on ADB's website

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