

A decorative background consisting of a grid of squares in various shades of brown and red, with some squares missing or faded, creating a mosaic effect.

Indonesia

Transport Sector Assessment, Strategy,  
and Road Map



# Indonesia

## Transport Sector Assessment, Strategy, and Road Map

July 2012

Asian Development Bank

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# Currency Equivalents

(as of 1 July 2012)

|               |   |             |
|---------------|---|-------------|
| Currency Unit | = | rupiah (Rp) |
| Rp1.00        | = | \$0.00011   |
| \$1.00        | = | Rp9,385     |

## Abbreviations

|          |   |   |
|----------|---|---|
| ADB      | - | Asian Development Bank  |
| ASR      | - | assessment, strategy, and road map  |
| AusAID   | - | Australian Agency for International Development   |
| BAPPENAS | - | Badan Perencanaan dan Pembangunan Nasional<br>(National Development Planning Agency)                      |
| BLU      | - | Badan Layanan Umum (Public Service Agency)  |
| BPJT     | - | Badan Pengatur Jalan Tol (Toll Road Regulatory Agency)  |
| BRT      | - | bus rapid transit   |
| DGH      | - | Directorate General of Highways   |
| DGLT     | - | Directorate General of Land Transportation  |
| dwt      | - | deadweight ton  |
| GDP      | - | gross domestic product  |
| GIZ      | - | Deutsche Gesellschaft für Internationale Zusammenarbeit<br>(German Society for International Cooperation) |
| IndII    | - | Indonesia Infrastructure Initiative   |
| IRSDP    | - | Infrastructure Reform Sector Development Program  |
| JICA     | - | Japan International Cooperation Agency  |
| km       | - | kilometer   |
| MOT      | - | Ministry of Transportation  |
| MPW      | - | Ministry of Public Works  |
| mt       | - | million tons  |
| NPMP     | - | National Port Master Plan   |

|         |   |
|---------|---|
| Pelindo | - Pelabuhan Indonesia (Indonesian Port Corporation)                                       |
| PPP     | - public-private partnership  |
| PSO     | - public service operation  |
| PSP     | - private sector participation  |
| PTKA    | - P. T. Kereta Api Indonesia (Indonesian Railway)   |
| RPE     | - Reserve Pays Emergents  |
| RPJMN   | - Rencana Pembangunan Jangka Menengah Nasional<br>(National Medium-Term Development Plan) |
| RRDP    | - Regional Roads Development Project  |
| SOE     | - state-owned enterprise  |
| TA      | - technical assistance  |
| teu     | - twenty-foot equivalent unit   |

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1. The Southeast Asia Department of the Asian Development Bank (ADB) is systematically updating its sector assessments, strategies, and road maps (ASRs)<sup>1</sup> to better harmonize project planning and programming with member countries and development partners. This transport ASR summarizes the current state of the Indonesian transport sector and identifies a preferred strategy and road map to guide development of specific ADB transport sector assistance during the period 2012–2015. The ASR is based on the specific needs of Indonesia, drawn from a review of studies and other documents, as well as direct consultations with officials of the Government of Indonesia and other development partner agencies. The ASR is consistent with ADB’s Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank 2008–2020 and ADB’s Sustainable Transport Initiative. The ASR provides the basis for further sector dialogue between the government and ADB in transport sector programming and coordination with development partners.

2. This ASR covers the transport sector in Indonesia, but focuses on roads and strengthening domestic connectivity to enhance inclusive growth. It has been prepared primarily through consultation with the Directorate General of Highways under the Ministry of Public Works, the National Development Planning Agency, the Ministry of Transportation, and development partners, in particular the Indonesia Infrastructure Initiative program staff of the Australian Agency for International Development.

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<sup>1</sup> For this report, ASR stands for “assessment, strategy, and road map,” although the “A” is often taken to represent “analysis.”

# Sector Assessment: Context and Strategic Issues

## A. Economic Context

3. Indonesia was not seriously affected by the 2008–2009 global recession due to its large domestic market and its relatively low dependence on external trade. It managed to recover from the global slowdown through gross domestic product (GDP) expanding by 4.5% in 2009—about 1.2% below the average annual growth of the previous 5 years. In 2000–2008, annual GDP per capita grew at 4%, standing now at about \$2,270.<sup>2</sup> The National Development Planning Agency’s (BAPPENAS) National Medium-Term Development Plan (RPJMN) sets a target of 6.3%–6.8% for GDP growth for 2010–2014, with inflation of 4%–6% and unemployment at 5%–6%, targeting poverty reduction from 15% to 8% by 2014.<sup>3</sup> However, unemployment, nationally at 8.4% (12% in Jakarta), and systemic underemployment remain a problem. Inflation has gained momentum (from 2.9% in December 2009 to 6.7% in February 2011)<sup>4</sup> due to the gradual rise in commodity prices as well as the accelerating economy.

## B. Transport Sector Context

### 1. The Transport System

4. Indonesia, as an archipelago with more than 17,000 islands, relies heavily on transport connections to link the islands and regions. While the larger islands of Java, Sumatra, and Sulawesi have extensive road-dominated internal transport systems, with rail a secondary mode in Java and Sumatra, many of the smaller, less developed islands rely on (i) incomplete, fragmented, and poorly maintained road networks for internal travel; and (ii) interisland shipping to access the main population centers on Java and Sumatra. In Java and selected parts of Sumatra, particularly the larger urban areas, roads are highly congested, leading to high social and environmental costs and a drag on economic growth. Rail service, provided by a state-owned enterprise (SOE), P.T. Kereta Api (PTKA), is unprofitable in Java as it focuses mainly on passengers and offers limited freight service. In Sumatra, where coal traffic is dominant, rail services are more profitable, allowing PTKA to break even overall. Interisland shipping is costly because of small vessel sizes, inefficient operations, and underinvestment in port capacity. Most of the ferry services and many of the freight services to the eastern Indonesian islands are supported by a public service obligation (PSO). Until recently, ports have been exclusively managed by SOEs of the Indonesian Port Corporation (Pelindo),<sup>5</sup> which covered separate regions of Indonesia and exercised monopolistic control over operations and development. This has now changed to a “port authority”

<sup>2</sup> In constant terms (rupiah in 2000), GDP per capita is only just below \$1,000 and was only \$1,186 in 2004. In purchasing price parity terms, GDP per capita is \$4,000.

<sup>3</sup> See Table 1 of BAPPENAS RPJMN, Volume 1.

<sup>4</sup> See <http://www.tradingeconomics.com/indonesia/inflation-cpi>

<sup>5</sup> *Pelabuhan Indonesia* in Indonesian.

structure with each Pelindo becoming port operators competing with other private operators. However, the fact that all port land is registered to the Pelindos—and is carried as an asset on their financial statements—complicates the full transition to port authorities, which should own and manage the port lands. Compared to other international ports, efficiency in the major Indonesian ports is poor. The air sector is evolving rapidly, with strong growth in air travel resulting from highly competitive and low-cost air service. Angkasa Pura I and II (Persero) are responsible for operating 25 air terminals divided equally between west and east Indonesia. They retain a monopoly over air terminal capacity, with the ability to limit private sector investment, resulting in cases of overcrowded terminals and poor international flight safety standards.

5. The road subsector has continued, and will continue, to dominate the other modes in absolute value and in passenger- or freight-kilometers (km). In units moved, estimated modal shares for passengers are road 90%, rail 8%, sea 1%, and aviation 0.6%; and those for freight are road 90%, rail <1%, sea 9%, and aviation <0.1%. In service delivery provided, 70% of passenger-kilometers and 82% of ton-km are transported via roads. Subsector summaries for road, maritime, rail, urban, and air transport are provided in Appendix 1.

## 2. Legal and Institutional Framework

6. Between 2004 and 2009, laws which governed transport were changed to create a more efficient framework for transport network development, including to break the monopolistic role of the SOEs and to open the door for increased competition from the private sector in the delivery of transport services.<sup>6</sup> As a result, air and road transport services are now highly competitive, offer good service, and are mainly constrained by limitations in infrastructure. Railway operations are still going through a period of transition as private operators are selectively encouraged to build special railways to carry key resources like coal or timber. Passenger service and rail infrastructure in Java will likely remain under PTKA with PSO<sup>7</sup> as a main revenue source. Recent studies have recommended opening interisland shipping to increased competition—even on those routes with PSO payments.<sup>8</sup> Institutional changes to reduce overlaps (roads), remove monopolies (ports and airports), and increase efficiency (railways and shipping) are often hampered by institutional inertia and reluctance of the affected parties to cede control. Recent progress has been made to rationalize the delivery of toll roads with both improved project planning and improved institutional authority of tolled expressways.<sup>9</sup>

7. Jurisdiction over transport infrastructure and services poses a funding problem and a challenge to development. Transport infrastructure and services fall under national, provincial, district, or city agency control—depending on the level of infrastructure or service. Targeted funding to specific purposes is problematic because of the decentralized style of governance. For instance, the recently established road preservation fund is hampered by the lack of a mechanism for transfer of tied funds to rehabilitate or maintain subnational roads. Urban congestion remains a city issue, although the implications of the congestion are national in scope.

|                        | Old law with public monopoly | New law with open market |
|------------------------|------------------------------|--------------------------|
| Road and Toll Road     | Law No. 13/1980              | Law No. 38/2004          |
| Railway                | Law No. 13/1992              | Law No. 23/2007          |
| Sea Transport and Port | Law No. 21/1992              | Law No. 17/2008          |
| Air Transport          | Law No. 15/1992              | Law No. 1/2009           |
| Land Transport         | Law No. 14/1992              | Law No. 22/2009          |

<sup>6</sup> PSO is effectively a government subsidy for taxes, as revenue does not cover service provider costs.

<sup>8</sup> Indonesia Infrastructure Initiative (financed by the Australian Agency for International Development). 2010. *Public Service Obligation and Pioneer Service Policy in the Transport Sector*. July. Jakarta. [http://www.indii.co.id/publications-detail.php?id\\_news=128](http://www.indii.co.id/publications-detail.php?id_news=128)

<sup>9</sup> Indonesia Infrastructure Initiative (financed by the Australian Agency for International Development [AusAid]). 2010. *Technical Assistance to DGH for Institutional Support to Create an Indonesian Highway Development Agency (IHDA) – ongoing*. Jakarta.

### 3. Transport Costs and Logistics

8. Increasingly, countries are concerned not only with the port-to-port delivery and domestic transportation of goods by separate systems, but with the integrated door-to-door delivery of goods in a comprehensive supply chain system. Due to weak transport systems and poorly developed trade logistic services, some areas of the country like Papua can expect to pay two or three times the cost in Jakarta for critical commodities like cement. In provinces such as Papua and West Papua, towns and villages, while served with local roads, are not connected to a provincial road network. This results in low economic potential, high operating costs, and high incidence of poverty. Current congestion in Java and the larger cities imposes a growing time, efficiency, and cost penalty on transport users. The poor condition of many roads, caused by insufficient maintenance and overloaded trucks, also leads to high operating costs and high incidence of accidents and loss of life. Indonesia ranked 75th out of 155 in 2010 on the Logistic Performance Index, compared with 43rd in 2007.<sup>10</sup> Infrastructure quality scoring for Indonesia is worse than the Association of Southeast Asian Nations average. Business surveys cite inefficient logistics, caused by poor infrastructure, and a corrupt and inefficient bureaucratic system, as one of the biggest factors affecting Indonesia's international competitiveness. Under the Global Competitiveness Index for 2010,<sup>11</sup> Indonesia ranked 44th among 139 countries—an improvement of 10 places since 2009—82nd for availability of infrastructure, and 84th for road availability.<sup>12</sup> This indicates that poor infrastructure is offsetting other more positive aspects of competitiveness.

9. Linkage of interisland shipping to land transport is very important in Indonesia. Major ferry services between the key islands are under the Directorate General of Land Transportation (DGLT). All of the eastern islands rely heavily on interisland shipping for both imports and exports. Efficient movement of those goods to and from origins and destinations is the central logistics challenge of the Indonesian archipelago.

### 4. Service Delivery

10. The lack of transport sector investment over the past decade has resulted in increased transportation cost and an erosion of Indonesia's competitiveness. Chronic underinvestment in transport infrastructure remains one of Indonesia's critical development constraints.<sup>13</sup> Sustained longer-term funding of transport infrastructure at 5% of GDP will be needed to close the infrastructure supply gap. In the past, this meant exclusively public funding. Around 2005, the government realized that it alone could not finance the volume of investment required and called for increased private infrastructure investment through private sector participation (PSP) and public-private partnership (PPP) projects. However, attempts to get the private sector to invest in the construction and management of transport infrastructure have so far been largely unsuccessful.

## C. Core Sector Issues, Causes, and Effects

11. The core sector issues are overcoming institutional capacity constraints, the lack of infrastructure capacity, the poor condition of existing infrastructure, and the inefficient operations in order to reduce transport cost and provide a safer and more sustainable system for users. The lack of capacity is

<sup>10</sup> "Logistics Performance Index 2010: INDONESIA" finding based on the World Bank report *Connecting to Compete 2010: Trade Logistics in the Global Economy*. p. 3.

<sup>11</sup> The Global Competitiveness Report 2010–2011. Claus Schwab. World Economic Forum. Geneva.

<sup>12</sup> For the Global Competitiveness Index, Indonesia scored worse than Malaysia (26) and Thailand (38), but significantly better than Viet Nam (59) and the Philippines (85).

<sup>13</sup> ADB. 2010. *Indonesia Critical Development Constraints*. Manila.

most serious in the highly congested areas, but the future growth of the national economy also depends heavily on the availability of adequate transportation capacity to serve most key markets. Because little expressway development has occurred over the past decade, the lack of a trunk road structure is a key impediment to long-term economic growth. The poor condition of much of the transport sector infrastructure, particularly at the subnational level, contributes to high costs and unsafe conditions. Inefficient operations increase investment and logistics costs, ultimately resulting in higher costs for transport users and delivery of goods and services.

## Sector Problem 1: Infrastructure Financing Deficit

### a. Problems

12. Following the 1997 Asian financial crisis, the focus of Indonesian budgeting was on the country's fiscal consolidation, which meant cutting back on nonessential expenditure, including infrastructure. As a result, budgets for infrastructure were reduced to the point where they only covered maintenance

**Table 1** Strengths, Weaknesses, Opportunities, and Threats Analysis

| Strengths   | Weaknesses   |
|---|--|
| Approval of new laws to promote competition with the private sector   | Implementing regulations for new laws incomplete   |
| <b>Roads</b> <ul style="list-style-type: none"> <li>Dominant mode (90% of passengers and freight and 80% of passenger-km and 72% of ton-km)</li> <li>High competition in bus and trucking services</li> <li>Network of 354,000 km (42,000 km of national road) growing at 3% per annum</li> <li>Doubling of asphalted roads in 20 years (55% for network and 71% national roads)</li> </ul> | <b>Roads</b> <ul style="list-style-type: none"> <li>19% of national network in poor condition</li> <li>15% of national roads congested</li> <li>High cost of maintenance and construction with low output because of MPW policy (short life cycle) and corruption</li> <li>Low PPP toll road projects</li> <li>Road safety and overloading a major concern</li> <li>Neglect of subnational road network</li> </ul> |
| <b>Rail</b> <ul style="list-style-type: none"> <li>Strong potential for traffic growth in resource commodities in Sumatra and Kalimantan</li> <li>Stable demand for passenger services</li> </ul>   | <b>Rail</b> <ul style="list-style-type: none"> <li>Decline of freight market share in Java</li> <li>Passenger service mainly sustained by PSO</li> <li>Insufficient revenue to cover replacement cost of equipment</li> </ul>  |
| <b>Sea</b> <ul style="list-style-type: none"> <li>Container traffic (9.4 million teu) grown from year 2000 (2.9 million teu)</li> <li>Good market penetration of national lines in domestic traffic</li> </ul>  | <b>Sea</b> <ul style="list-style-type: none"> <li>With low performance, commercial ports not competitive</li> <li>Ports requiring expensive dredging to meet new generation of international ships</li> <li>High interisland freight rates</li> <li>Archaic handling methods at noncommercial ports</li> </ul>   |
| <b>Aviation</b> <ul style="list-style-type: none"> <li>Good air coverage of country</li> <li>Dynamic competitive industry for airlines</li> <li>Low-cost fares open air travel</li> <li>Expanding international connections</li> </ul>  | <b>Aviation</b> <ul style="list-style-type: none"> <li>Improvement of terminal and airport services needed in some major centers</li> <li>Air safety and airworthiness remain a problem</li> <li>Lack of private sector investment in terminal expansion</li> </ul>  |
| <b>Urban</b> <ul style="list-style-type: none"> <li>Established major BRT system in Jakarta</li> <li>Development of independent commuter rail service in Jabotabek</li> <li>Work under way to expand BRT in other cities</li> </ul>   | <b>Urban</b> <ul style="list-style-type: none"> <li>No coordination at national level</li> <li>Lack of financial capacity of cities</li> </ul>   |

*continued on next page*

Table 1 Continued

| Opportunities   | Threats  |
|---|--|
| <p><b>Roads</b></p> <ul style="list-style-type: none"> <li>Road sector traditionally receiving a large share of the government budget and also traditionally favored by development partners</li> <li>Measures to eliminate corruption and control maintenance costs in place</li> <li>Review of toll roads to improve conditions for private sector investment and build more toll roads</li> </ul> <p><b>Rail</b></p> <ul style="list-style-type: none"> <li>Private sector investment in South Sumatra and Kalimantan viable</li> <li>Master plan to lay out strategic investment options for government in infrastructure and possible future PSO</li> </ul> <p><b>Sea</b></p> <ul style="list-style-type: none"> <li>Constructing new ports to meet demand</li> <li>Productivity gains through efficient use of additional handling equipment</li> <li>Lower freight rates because of increased efficiency in ports and fleet</li> </ul> <p><b>Air</b></p> <ul style="list-style-type: none"> <li>New terminals to meet demand and improve customer service</li> <li>Improved navigation systems and airport services to improve safety</li> <li>Increased private investment in terminals</li> </ul> <p><b>Urban</b></p> <ul style="list-style-type: none"> <li>Strong growth in demand needs to be met</li> <li>Potential for new operators</li> </ul> | <p><b>Roads</b></p> <ul style="list-style-type: none"> <li>Insufficient funding (public and private) to cover infrastructure deficits for national and rural road network</li> <li>Despite efforts, land acquisition remains a problem</li> <li>Reform program running out of steam and corruption not eliminated</li> <li>Low response of private sector</li> </ul> <p><b>Rail</b></p> <ul style="list-style-type: none"> <li>Increased competition from road haulers make freight service in Java unviable</li> <li>Institutional problems delay or discourage private investment in new railways and rehabilitation</li> <li>Low-cost air services make long-distance rail passenger service uneconomical</li> </ul> <p><b>Sea</b></p> <ul style="list-style-type: none"> <li>Restructuring Pelindo and bringing in private sector slow to be implemented</li> <li>Ports slow to improve productivity and available draft to meet new generation of bulk and container vessels</li> <li>No funding to improve noncommercial ports in more remote destinations</li> </ul> <p><b>Air</b></p> <ul style="list-style-type: none"> <li>Funding not available to expand terminals in line with expanding demand</li> <li>Discount airlines unable to maintain fleets in good condition leading to increased safety problems</li> <li>Monopolistic behavior of Angkasa Puras reduce or limit private sector investment</li> </ul> <p><b>Urban</b></p> <ul style="list-style-type: none"> <li>Low fares of private transport operators reduce incentive for upgrading fleet quality</li> <li>Lack of viability for PPP</li> <li>High capital cost limits public investment</li> </ul> |

BRT = bus rapid transit; Jabotabek = Jakarta, Bogor, Depok, Tangerang, and Bekasi; km = kilometer; MPW = Ministry of Public Works; PPP = public-private partnership; PSO = public service operation; teu = twenty-foot equivalent unit.

Source: ADB consultant assessment.

with little scope for larger investments. By 2007, the macroeconomic outlook for Indonesia was positive and the net debt-to-GDP ratio was approximately 40%, less than that of Malaysia or the United Kingdom.

13. While budgets have expanded rapidly since 2009, the infrastructure backlog remains. That backlog is essentially of two types. The first is the connectivity backlog linking disparate regions together, both inraislant and interislant. This problem is found mainly in eastern Indonesia. The second is dealing with capacity constraints in key growth areas and congested parts of Java and Sumatra. Major metropolitan cities like Bandung, Denpasar, Jakarta, Makassar, Medan, Palembang, Semarang, and Surabaya are seriously congested, as are 15% of the national roads. The congestion is exacerbated

by the poor road condition which, in many cases, seriously restricts vehicle speeds and causes major safety problems.

### *b. Issues*

14. Achievement of transport infrastructure objectives relies on adequate funding from the government budget, supplemented with heavy investment by the private sector. Of the planned \$91.8 billion infrastructure funding for 2010–2014, \$40.7 billion or 44% is expected to be provided by the private sector. Of that private 44%, the government expects to supply \$12.2 billion or 30% in terms of its equity contribution to PPP. The average annual budget of the Directorate General of Highways (DGH) over 2011–2015 will be about \$3.1 billion for intercity roads, but spending this budget faces some key constraints. The lack of an eminent domain law results in slow land acquisition. Delayed project preparation and contracting problems will be major bottlenecks. These problems and the monopolistic hold of SOEs on infrastructure and operations in some subsectors also constrain private investment.

15. Despite significant progress over the past 5 years, programs of reforms (legislation, regulations, and institutional changes) required to attract the private sector in financing infrastructure investments are not yet complete. To encourage private investment, the government will continue to focus on steps to make project investment less risky by institutional strengthening, process streamlining, use of the project development funds, and other risk-sharing government support facilities. The new land law approved in December 2011 still requires implementation regulations, and implementation of a road preservation fund is just beginning.

16. Subnational governments at the province and *kabupaten*<sup>14</sup> level have seriously neglected road maintenance since decentralization. In many jurisdictions, average road conditions have deteriorated significantly in recent years. Significant changes are needed, both institutionally and financially, to improve the condition of subnational roads, including improvements to the transfer mechanisms that can tie central government funding to measurable outcomes.

17. The demand for interisland sea passenger services has been stagnating, and it is probable that demand will drop further in line with strong competition from low-cost air carriers. This means that maintaining such services is going to put additional constraints on the government's budget if PSOs or some form of subsidies are maintained.

18. In the railway subsector, PTKA as an operator is barely profitable, and services are largely not able to cover costs with revenues supported by PSO payments. Other than possible investment in South Sumatra, it is unlikely that the central government will make a heavy investment in railway infrastructure in the near future. There will be an increased reliance on private finance for expansion of the railway network, particularly for mine traffic, such as Kalimantan coal, where the traffic is fixed and the costs are well known.

19. Promoting public urban transportation is a city government responsibility, and the central government does not have much authority other than setting standards and policing. Local authorities do not have the financial capability to cope adequately with the huge capital cost of installing modern urban transport systems. One solution is to declare that relief of congestion in metropolitan cities is a national issue, thus allowing funding from the central government. This was the option followed in the case of the urban rail project in Jakarta. Another option is to reclassify certain roads in cities as national roads, thereby falling under DGH responsibility.

<sup>14</sup> *Kabupaten* are the equivalent of district-level areas.

### *c. Effects*

20. Delayed or underfunded transport infrastructure has the following effects:
- i. Unconnected areas of eastern Indonesia remain isolated. This is most pronounced in provinces like Papua and West Papua.
  - ii. Lack of trunk expressway capacity has resulted in congested and dangerous arterial roads which remain to be the primary road links for most centers.
  - iii. Economic growth in the key productive areas of high demand, such as Jakarta and West Java, is constrained by lack of capacity and connectivity.
  - iv. Economic development is not balanced because of limited accessibility of many regions.
  - v. Poor quality of subnational roads increases local transaction costs and seriously limits economic growth. Inability to access markets and raw materials limits entrepreneurial development and new enterprise creation.
  - vi. Poor urban transport infrastructure leads to heavy congestion and high economic, environmental, and social costs.
  - vii. Limited port and marine vessel capacity leads to inefficient movement and high cost of transport.
  - viii. Increased focus of the railway on passengers in Java and coal in Sumatra results in implicit acceptance that other freight traffic will be mainly carried by road.
  - ix. Poor logistics diminishes competitiveness of export products and increases cost of imports.

## **Sector Problem 2: Poor Transport Efficiency**

### *a. Problems*

21. The demand for infrastructure finance will remain very high over the coming 5-year period. Equally important is the need to spend available money efficiently and effectively. The recent review of DGH's spending noted that a potential savings of 25% could be achieved by implementing better road design standards to increase effective roadway life.

22. Another key problem is the long delay between planning and opening of roads to service. Procurement is slow; land acquisition can take up to 2 to 3 years; and contractor efficiency is poor, with high levels of corruption often leading to poor quality construction.

23. Increasing cross-border trade and transportation links have been recognized as means of fostering economic growth and reducing poverty. Indonesia is an active member of both the Brunei Darussalam–Indonesia–Malaysia–the Philippines East ASEAN Growth Area (BIMP-EAGA) and the Indonesia–Malaysia–Thailand Growth Triangle (IMT-GT). Connectivity corridors have been identified under BIMP-EAGA and IMT-GT master plans, but all require additional investments to be effective. Promoting a corridor development approach should also be pursued at the domestic level as a powerful instrument for economic development.

24. Interisland connectivity remains a key concern and faces poor levels of efficiency in operation. Lack of investment in smaller ports, poor services, and high costs are restricting growth, reducing local investments, and limiting local access to the benefits of globalization for regions away from the major growth areas in Java and Sumatra.

### *b. Issues*

25. Efficiency improvements in the road sector are constrained by the slow pace of developing output or performance-based contracts in the past due to the reluctance of the government to enter into multiyear contracts for road rehabilitation and maintenance. Only recently has this barrier been broken with the commencement of two pilot performance-based rehabilitation and maintenance

contracts in Java. Those pilots may form the basis of a longer-term strategy to roll out performance-based contracting across the national road system.

26. Productivity and port performance at Indonesian ports are much lower than those of ports in Malaysia, Singapore, and Thailand. Vessels spend too much time at port, with turnaround time for domestic shipping of 65 hours (2.7 days) on average in 2007.<sup>15</sup> When comparing container terminal productivity with ports in Southeast Asia and Europe, Indonesian ports suffer from excessively high berth occupancy and excessively low twenty-foot equivalent unit (teu) production per berth. Noncommercial ports in Indonesia are important, but because of lack of funding mechanisms, these ports often have not been modernized and suffer from inefficiency. Among other problems, they continue to rely on traditional, inefficient cargo and passenger handling methods.

27. The global trend is to have larger container ships on major international routes. In the future, larger vessels are likely to serve the Jakarta–Singapore route, and smaller vessels will then be used on feeder and domestic routes. This means that improvements in port facilities will be needed to accommodate larger vessels. However, the more immediate constraint in commercial ports is a lack of proper handling equipment to increase the productivity of rapidly aging container cranes.

28. Domestic shipping companies have small container ships<sup>16</sup> and cannot capture economies-of-scale benefits from larger vessels. High interisland freight rates imply that goods are more expensive in remote areas.

29. Poor intermodal transport and lack of good connections between the rail system and ports, airports, and city centers have been a serious limitation for the development and expansion of the railway system.

### *c. Effects*

30. Limited connectivity and inefficient implementation and operation have the following effects:
- i. Inefficient spending means scarce financial resources are being wasted rather than being spent on important infrastructure improvements.
  - ii. Lack of efficient delivery mechanisms, including contracting and concessioning as well as land acquisition, delays investment and impedes economic growth and improved logistics.
  - iii. Use of outdated equipment, such as small inefficient vessels or dockside cranes, reduces efficient resource allocation and increases cost.
  - iv. Use of old or technologically outdated vessels increases logistics cost, while domestic container rates are easily twice as high as for an international voyage.
  - v. Economic growth is hampered because interisland freight rates have remained high.
  - vi. Lack of connectivity and ineffective use of intermodal connections increase logistics cost, contributing to inefficiency of the entire shipping operation.

## **Sector Problem 3: Institutional Capacity and Development**

### *a. Problem*

31. Institutional issues are at the crux of the transport challenge in Indonesia. The current institutional structure of overreliance on SOEs—in rail, marine, and aviation—constrains economic growth and equitable development. The monopolistic control over ports by the Pelindos, the airports by the Angkasa Puras and, to a degree, the railway by PTKA has, in the past, helped establish the basic

<sup>15</sup> United States Agency for International Development. 2008. *Indonesian Port Sector Reform and the 2008 Shipping Law*. August. p. 13.

<sup>16</sup> Domestic container vessels are small due to low demand for interisland container services.

infrastructure. However, realizing the benefits of more competition for delivery of services from other private companies is long overdue. This need is recognized in the new laws, but implementation of the laws is not a quick process. It will take a number of years to unwind the 50-year-old institutional structure.

### *b. Issues*

32. **Road transport.** Expressway development and management has, until recently, been poorly organized. At the moment, a clear long-term national expressway network has not been defined, and relative roles and responsibilities for creating that network remain confused. Separation of responsibility for road service delivery and enforcement remains a serious institutional problem. DGH, DGLT, and national traffic police all have partial jurisdiction. Enforcement of laws and removal of “black spots” are challenging. Recent interagency coordination meetings are a positive development.

33. **Marine transport.** The new Shipping Law (2008) recognizes that the sector will benefit from the abandonment of the Pelindo monopoly and the introduction of fair competition. However, to get these benefits, reforms have to be implemented and the new port authorities and harbor masters have to be put in place to allow private investors to compete with the Pelindos, as it was intended. The pace of change is hampered by legal ownership of port lands.

34. **Rail transport.** PTKA faces severe competition from low-cost airlines for passenger traffic and from the road and coastal shipping for long-distance freight services. The only major institutional reform has been to separate the commuter operation from PTKA in Jabotabek<sup>17</sup> and create a new company JAVA-DEOP, which collects revenues and carries its own maintenance. Government authority over PTKA is limited, while PTKA remains in effective control of the infrastructure. Other than Sumatra coal traffic, all other PTKA traffic is unprofitable.

### *c. Effects*

35. Overall, there is still an uncompleted reform agenda for sector institutions, including drafting of enabling regulations to support more market liberalization and to encourage private sector participation and changes to the mandate of current bodies. The implementation of this agenda has been slow, even when its supporting legal framework is already in place. The many institutional problems noted have the following effects:

- i. The reform agenda envisaged by the new modal laws has, in many cases, been delayed through inertia and opposition from the current SOEs. This is complicated by a lack of clear forward planning by the responsible bodies on how to implement the reform. Current work on master plans by DGH (roads), DGRail (rail), and DGMarine (marine) will help to clarify the vision for the modes, but it will remain a work in progress for some time.
- ii. Lack of effective private sector contribution to infrastructure development to help fill the funding gap limits the growth of the transport sector. This, ultimately, results in unmet demand, congestion, and higher costs for users.
- iii. Confusion over roles and responsibilities of various institutions leads to inefficient implementation attempts which, ultimately, are not successful and delay infrastructure expansion and renewal.
- iv. Current monopolistic behavior by the SOEs is based on a long history that has generated an entitlement mentality, which the current organizations are reluctant to cede. This will delay the needed implementation reforms and likely result in incremental rather than revolutionary changes.

<sup>17</sup> Jakarta, Bogor, Depok, Tangerang, and Bekasi.

- v. Ineffective institutional coordination in delivery of road transport services has led to a chaotic approach to traffic management and a high level of accidents and fatalities. Lack of effective monitoring and of axle loading limitations leads to premature failure of the roads, and increases costs. The overall effects are high social costs from accidents and loss of life, and high infrastructure and user costs from premature failure of roads and resulting poor road conditions.

## Sector Problem 4: Lack of Good Governance

### *a. Problem*

36. Promoting good governance is a serious issue in Indonesia and is not restricted to the transport sector. The lack of good governance is, nevertheless, a prevalent problem for transport. There have been cases where prices of completed projects have more than doubled the original estimates. To make matters worse, there have also been cases where projects have suffered from price escalation and poor quality delivery, despite the efforts by the concerned agencies to put in place effective control mechanisms.

### *b. Issues*

37. The current public service salary structure contributes to poor governance. It is important to pay public servants salaries comparable to those of workers in the private sector, but also to expect output to compare to private sector productivity for the same work. To achieve this accountability means reform of the salary structure plus reform of the staffing levels in government. Experience in other countries in the region has shown that a more streamlined but higher-paid public service is more effective and less open to corruption.

38. The monopolistic structure of the SOEs contributes to poor governance and, with lack of competition, is likely to continue. Expansion of infrastructure development with increased budgets and limited capacity to implement means that opportunities for rent seeking abound. A long history of similar behavior has institutionalized corrupt practices and developed defined channels for payments to be made. This is a long-term problem, and positive change will only be possible through improved competitive bidding, independent quality monitoring, effective auditing, and increased use of longer-term performance contracts. Some of these steps are beginning to be made, but progress is slow.

39. Overloading has traditionally been a serious problem and results inevitably in premature road deterioration. Most common offenders are trucks carrying logs and coal and even occasionally crude palm oil. More than 200 weighbridges have been installed throughout Indonesia over the past decade, but this has proved to be ineffective as enforcement failed and poor governance is endemic. No sustainable solutions have been found so far to reduce overloading and the high cost it imposes on road maintenance.

### *c. Effects*

40. The governance problems have the following effects:
- i. Procurement is flawed, often resulting in nonoptimal selection of the preferred bidder based on payments to the bid committee or the client, rather than on the best value for money.
  - ii. Poor quality infrastructure is a result of poor governance and corrupt practice. Poor quality infrastructure leads to reduced effective life and higher cost to both the infrastructure supplier and the user.
  - iii. Lack of good governance leads to poor road safety and high social costs.
  - iv. Lack of enforcement of current road rules and regulations leads to reduced effective infrastructure life and higher maintenance costs.

## A. Government Sector Strategy and Plans

### 1. Policy, Legal, and Institutional Framework

41. The government's national transport strategy growth is guided overall by Sistranas.<sup>18</sup> The RPJMN<sup>19</sup> for 2010–2014 emphasizes enhanced domestic connectivity through major infrastructure development and transport sector reform. The specific objectives for transport sector development are (i) to improve capacity of transport infrastructure and to reduce backlogs and bottlenecks in transport services; (ii) to develop integrated, intermodal, and interisland transport as recommended in the blueprint of multimodal transport (to achieve a 90% stable road network, to increase domestic sea transport market share to 100%, and to increase railway freight and passenger market shares by 7% and 23%, respectively); (iii) to improve accessibility to transport infrastructure and services (to improve pioneer transport services in remote areas to provide transport services for low-income people through PSO schemes); (iv) to improve the level of transport safety (to reduce transport accidents by 50% by 2014); (v) to conduct institutional restructuring; and (vi) to contribute to climate change adaptation and mitigation efforts (to develop eco-airports and eco-ports, and to reduce use of private vehicles in major cities).<sup>20</sup>

42. The need for improved domestic connectivity is a strong priority for the government. Indonesia's *Blue Print for Revitalizing and Developing the Indonesia Logistics Sector*<sup>21</sup> lays out strategic areas for future work. The main areas for legal and regulatory reform include transparent laws and regulations, simplified licensing procedures, and a revitalized intermodal transportation system. In 2010, the Office of the Vice President carried out an overall review of key connectivity issues with the target of ensuring more equitable development across the regions and improving overall logistics costs.

43. The BAPPENAS connectivity action plan lists a number of specific measures. These include (i) a Trans-Java expressway; (ii) railway sector reform and doubling of rail track; (iii) establishment of a Jabotabek transport authority to develop mass public transport; (iv) reform of interisland shipping by developing port authorities, rehabilitating key ports in eastern Indonesia, and developing public service arrangements for shipping in underserved areas; (v) improvement of productivity in Tanjung Priok through better trade logistics, streamlined cargo release, and bolstered road and rail connection; (vi) development of a new deepwater port in West Java; and (vii) establishment of a performance-based system of contracting out for road maintenance.<sup>22</sup>

<sup>18</sup> Minister of Transportation Regulation No. KM 49 of the Year 2005 about the National Transportation System (SISTRANAS). This is an aspirational national transport plan and falls within the framework of the Government of Indonesia's 20-year national development plan (Law No. 17/2007: 2005–2025 National Long-Term Development Plan [RPJPN 2005–2025]).

<sup>19</sup> Government of Indonesia Five-Year Plan (BAPPENAS) RPJMN Volume 2 section 5.2.2. For a summary of the target actions, see Table A1.1.

<sup>20</sup> Dewa Broto Joko Putranto. 2010. Priority Sectors ADB–Indonesian Development Cooperation. Presented at National Workshop Government of Indonesia–ADB, Country Partnership Strategy 2011–2015. 5 November.

<sup>21</sup> Coordinating Ministry for Economic Affairs. 2008. *Blue Print for Revitalizing and Developing the Indonesia Logistics Sector*. Jakarta.

<sup>22</sup> BAPPENAS. 2010. *Strengthening National Connectivity: Action Plan for Priorities*. Jakarta.

44. With the aim of achieving higher and more inclusive growth across Indonesia, the Masterplan<sup>23</sup> for Acceleration and Expansion of Indonesia Economic Development (MP3EI) was issued in May 2011. It has three strategic foci: (i) accelerating economic development in six economic corridors; (ii) improving national connectivity; and (iii) strengthening human resources, science, and technology, which are prerequisites to sustained, accelerated, and green growth. The connectivity pillar of the MP3EI focuses on (i) improving intra-economic corridor connectivity by developing roads, shipping, and railways and improving local access to the centers of growth and facilities; (ii) improving inter-economic corridor connectivity by developing good interconnection between primary ports and airports (especially in eastern Indonesia); (iii) reducing logistics by developing ports and airports as international hubs in western and eastern Indonesia, optimizing the operation of customs; and (iv) improving the operation of international ports and airports through implementation of an integrated logistics system.

45. Achievement of these objectives relies both on adequate funding out of the state budget supplemented with heavy investment by the private sector. Of the planned \$91.8 billion infrastructure funding for 2010–2014, \$40.7 billion or 44% is expected to be provided by the private sector. Of that private 44%, the government expects to supply \$12.2 billion or 30% in terms of its equity contribution to PPP.<sup>24</sup> To encourage private investment, the government will continue to focus on steps to make project investments less risky by policy and regulatory reforms, institutional strengthening, process streamlining, use of the project development funds, land banks, and the other risk-sharing government support facilities.

46. One of the heaviest burdens on the transport budget over the next 5 years is the funding required to subsidize transport for social reasons. Transport subsidies and PSOs in the government budget amount to 23% of the budget expenditure (60% of which goes to the fuel subsidy). In some cases, PSOs may be justified on equity or historical grounds, but there should be defined standards against which justification, design, and management of the PSO are measured, particularly across modes. Other general transport subsidies, which use transport to target social issues, are normally delivered by other means, including regional transfers or direct infrastructure funding for subnational governments.

## 2. Institutional Constraints

47. Successful achievement of the sector objectives will be constrained on a number of levels. Land acquisition remains a major constraint for road development and for port and airport expansion. The revised PPP regulation requires that the government secure all project land prior to bidding, which will result in significant delays in project development.

48. Private sector development will only occur where high traffic levels make the financial return attractive. Many of those projects will be urban or peri-urban and inevitably involve the city governments. However, it is not clear how government financial support can be directed to private sector investors working on essentially urban projects under city jurisdiction. Capacity remains weak in many of the government departments and agencies responsible for transport development. Expanded use of contracted service delivery requires improved contractor capacity and strengthened capability, which will require significant effort and time.

<sup>23</sup> [http://www.ekon.go.id/media/filemanager/2011/05/27/p/d/pdf\\_mp3ei.pdf?bcsi\\_scan\\_9688b637a46568db=0&bcsi\\_scan\\_filename=pdf\\_mp3ei.pdf](http://www.ekon.go.id/media/filemanager/2011/05/27/p/d/pdf_mp3ei.pdf?bcsi_scan_9688b637a46568db=0&bcsi_scan_filename=pdf_mp3ei.pdf)

<sup>24</sup> For a breakdown of planned infrastructure investment in 2010–2014, see Table A1.1.

## B. ADB Sector Experience and Assistance Program

### 1. ADB Support to Date

49. Indonesia remains one of the largest recipients of ADB lending and technical assistance (TA). When cumulative loans are considered, the transport sector accounts for 11% of total lending to Indonesia. For the 2011–2015 ADB lending commitments in Indonesia, 12% was given to the transport sector, which is consistent with the share of 10%–12% over recent programs to Indonesia.

50. From 1976 to 2011, ADB financed 18 road projects for \$1.92 billion in loans and \$4.3 million in grants. At the end of 2011, 15 of the road projects were completed and rated *successful* with 1 *partially successful*. ADB has provided 10 loans to support port infrastructure developments for a total of \$312 million and 2 loans to support airport development for \$234 million in total. Port projects were rated *successful*, while airport projects were suffering from delays and difficulties and were rated only *partially successful*.

51. Before the 1997 Asian financial crisis, ADB intervention covered all transport modes, though the road sector was always dominant. Since 1998, the situation has changed, and ADB remains focused only in the road sector for project lending and provides support through program lending to all transport sectors.

### 2. Project Lending

52. Since 2000, all transport projects have been in the road sector. The loan for the Road Rehabilitation (Sector) Project<sup>25</sup> was approved on 11 December 2000 (closed in February 2007) and consisted of 2,500 km of periodic maintenance, 500 km of road betterment, and 3 km of bridge rehabilitation. Projects were in Java, Kalimantan, Sulawesi, and Sumatra. Most of the loan covenants were met, and the project was rated *successful*. The loan for the Road Rehabilitation II Project,<sup>26</sup> approved on 29 September 2005 (closed on 31 December 2010), consisted of rehabilitation of 1,295 km of national roads (655 km in North Sumatra, Riau, Jambi, and Lampung provinces of Sumatra; and 640 km in Central and South Kalimantan).

53. The Regional Roads Development Project (RRDP)<sup>27</sup> was approved on 24 November 2011 (expected to be closed on 31 August 2016) and consists of 476 km of rehabilitation in Central and East Java, and East and West Kalimantan. The project also includes TA for road safety awareness campaigns and capacity building, as well as overloading control, network planning, and a social development program.

### 3. Program Lending

54. On the program side, ADB has continued to support reforms in the transport sector and efforts by the government to get the private sector involved through PPP projects. To clearly support policy

<sup>25</sup> ADB. 2000. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Republic of Indonesia for the Road Rehabilitation (Sector) Project*. Manila.

<sup>26</sup> ADB. 2005. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Republic of Indonesia for the Road Rehabilitation-II Project*. Manila.

<sup>27</sup> ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Republic of Indonesia for the Regional Roads Development Project*. Manila.

reform, ADB created the Infrastructure Reform Sector Development Program (IRSDP)<sup>28</sup> with an ordinary capital resources loan of \$400 million signed in November 2006. The loan is disbursed once the expected reform outputs or milestones promised by the government were verified.<sup>29</sup> The total program lending including other development partners was \$700 million, with ADB signing a new loan agreement in 2008 under IRSDP-2<sup>30</sup> for a further \$280 million.<sup>31</sup> A further extension of the program through IRSDP-3<sup>32</sup> was approved in December 2010 to continue with support for cross-sector reform, some sector-specific reform, and strong support aimed at accelerated private sector investment. The verdict so far on the program and on the capacity to accelerate the process of implementation is only partly positive, since few significant changes have resulted from the loans.

#### 4. Technical Assistance

55. During the period 2000–2009, some important TA projects were undertaken. These included Privatization and Restructuring of State-Owned Enterprises<sup>33</sup> and Support for Infrastructure Development.<sup>34</sup> These TA projects each made a significant impact on critical areas of policy and planning.

56. With the Support for Infrastructure Development (SID) Project, the Government aimed to accelerate private sector investment to help develop infrastructure by further amending the legal, regulatory, and institutional structure for PPP investment to attract the private sector. SID also encouraged development of regulations that level the playing field for investors and discouraged the business-to-business approach often used by the SOEs. This generated resistance among some line ministries and contracting agencies since it entailed the reduction of existing transport monopolies.

#### 5. ADB Lessons

57. Over the past decade, ADB project assistance has supported DGH to rehabilitate strategic, national, and provincial road links and bridges spread across a wide range of provinces, resulting in high economic returns (up to 65%) in some cases, but less effective and efficient in others. Since the 1997 Asian crisis, lack of available budget has focused government road spending on asset preservation rather than on asset renewal. While there continue to be opportunities for further support for rehabilitation and repair of national roads, the current ADB focus on assisting the government to close gaps in the transportation system helps to switch the target from asset preservation to asset creation. The next decade will see an acceleration of this trend across Indonesia.

58. ADB approved the RRDP (footnote 26) in November 2011, the first road project after a gap of 6 years. This project incorporated the key lessons learned from the Road Rehabilitation II Project (footnote 25) as elaborated in its project completion report: (i) post-qualification procurement process

<sup>28</sup> ADB. 2006. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Republic of Indonesia for the Infrastructure Reform Sector Development Program*. Manila.

<sup>29</sup> A Policy Matrix for the Infrastructure Reform Sector Development Program constituted the monitoring instrument and was attached as an appendix to the report and recommendation of the President. The matrix contains 69 objectives and 201 outputs or milestones.

<sup>30</sup> ADB. 2008. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Republic of Indonesia for the Infrastructure Reform Sector Development Program (Subprogram 2)*. Manila.

<sup>31</sup> ADB: \$400 million, Japan: \$100 million, World Bank: \$200 million.

<sup>32</sup> ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Republic of Indonesia for the Infrastructure Reform Sector Development Program (Subprogram 3)*. Manila.

<sup>33</sup> ADB. 2001. *Technical Assistance to Indonesia for Privatization and Restructuring of State-Owned Enterprises*. Manila.

<sup>34</sup> ADB. 2005. *Technical Assistance to Indonesia for Support for Infrastructure Development*. Manila.

Table 2 Summary of ADB Support to the Transport Sector, 2000–2011

| Year                        | Project Loan  | Value<br>(\$ million) |
|-----------------------------|---|-----------------------|
| <b>Loans</b>                |   |                       |
| 2000                        | Road Rehabilitation (Sector)                                    | 190.0                 |
| 2005                        | Road Rehabilitation 2   | 151.0                 |
| 2006                        | The Rural Infrastructure Support Project                        | 62.0                  |
| 2011                        | Regional Roads Development Project                              | 180.0                 |
| <b>Policy Loans</b>         |   |                       |
| 2006                        | Infrastructure Reform Sector Development Program – Subprogram 1 | 400.0<br>34.0 (PDF)   |
| 2008                        | Infrastructure Reform Sector Development Program – Subprogram 2 | 280.0                 |
| 2010                        | Infrastructure Reform Sector Development Program – Subprogram 3 | 300.0                 |
| <b>Technical Assistance</b> |   |                       |
| 2001                        | Privatization and Restructuring of State-Owned Enterprises      | 2.6                   |
| 2003                        | Subregional Transport Cooperation Initiative                    | 0.4                   |
| 2005                        | Support for Infrastructure Development                          | 2.0                   |
| 2008                        | Preparing the Regional Roads Development Project                | 1.3                   |
| 2011                        | Improving Domestic Connectivity                                 | 0.5                   |

PDF = project development fund.

Source: ADB consultant.

must be used in future contracts to save time on procurement; (ii) involvement of resident mission from the beginning will avoid start-up delays as resident mission staff can interact with government on a daily basis; and (iii) appropriate laws and regulations for overloading control needs to be worked out and enforced to preserve the road assets and ensure road safety.

59. The current ADB infrastructure policy loan is the largest component of assistance to the transport sector.<sup>35</sup> In 2011–2015, the policy component of ADB lending will decrease to 40%–50%, with the rest remaining for projects.<sup>36</sup> This means that over the next 5-year planning period, ADB will continue to have a significant input into transport policy. While progress has been achieved in reforming laws, developing regulations, and supporting facilities and steps to increase private investment in the sector, the overall pace of real change has been slow. This is the result of (i) slow implementation; (ii) resistance to change from the SOEs; and (iii) poor PPP project development, a focus on projects with low financial viability, and ineffective application of PPP regulations. These points reflect underlying political economy factors in effecting reforms, namely, ongoing political choices in policy paths, and the capacity of institutions to implement reforms.

60. Specifically, reform and investment in the transport sector faces a number of continuing constraints and risks. These include (i) procedural difficulties, compensation conflicts, and extended delays in involuntary land acquisition and resettlement; (ii) poor governance and corrupt practice; (iii) continuing sense of entitlement within the SOEs; (iv) slow pace of private sector investment; (v) limited

<sup>35</sup> ADB. 2008. *Republic of Indonesia Infrastructure Reform Sector Development Program – Subprogram 2*. Manila; ADB. 2010. *Republic of Indonesia Infrastructure Reform Sector Development Program – Subprogram 3*. Manila.

<sup>36</sup> ADB Indonesia Resident Mission. 2010. *ADB's New Partnership with Indonesia: Process, Framework, and Issues*. Jakarta.

options for capacity enhancement for urban transport; (vi) continuing institutional and jurisdictional impediments; and (vi) poor implementation capacity and capability in government institutions and the contractor community.

61. Progress has been made in addressing some of these issues and risks. For example, air and road transport operations services offered by the private sector are now highly competitive, offer good service, and are mainly constrained by limitations in infrastructure. Since 2007, DGH has included an Anti-Corruption Action Plan for all loan projects based largely on increased transparency for all aspects of loan use. The establishment in 2007 of the National Public Procurement Agency and Anti-Corruption Commission supports increased transparency. The ADB requirements for international competitive bidding and open transparent delivery of the loan funds make an important contribution to this improved governance climate.

62. Due to institutional constraints, such as design capacity and insufficient implementation of regulations, road maintenance continues to be a difficult challenge for Indonesia. According to DGLT of MOT, overloaded vehicles are not the only cause of faster-than-expected deterioration of roads. Rapid road deterioration is also the result of poor construction quality and inadequate maintenance, and the government is addressing the many facets of this complex (and expensive) problem. DGLT is reviewing legislation to better control overloading at the source itself, and better means to properly manage the operations of the existing weighbridges for effective control. Increasing awareness and reducing corruption are part of the solution given the difficulties often encountered in imposing penalties and eliminating illegal payoffs. ADB and other development partners, such as the Australian Agency for International Development (AusAID) and the World Bank, will continue discussions with the government to develop systems, procedures, and practices to extend the economic life (and returns) of roads.

63. While project loans are targeted investments to improve road assets, particularly focusing on road connectivity, ADB complements project-specific investments with program loans that support the government in formulating its sector-level policies to strengthen institutional capacities, the legal and regulatory framework, and participation of the private sector. The program loans have helped the government in reducing subsidies and improving cost recovery in different infrastructure sectors. In the transport sector, the combination of policy reforms and infrastructure investments is contributing to economic benefits from improved quality of existing roads through better road maintenance and vehicle loan control, expanded road networks, improved access to markets and other connectivity, and lower vehicle operating costs.

64. ADB's existing and forward program in the transport sector is also guided by key recommendations of the Country Assistance Program Evaluation (CAPE)<sup>37</sup> of 2005 for ADB to (i) continue its assistance in the transport and communications sector; (ii) reduce geographical coverage and focus physical and social infrastructure with strategic priorities in the same geographical area; (iii) develop project-readiness filters and allow sufficient time for project processing to ensure that loans are not submitted for Board consideration prematurely; (iv) recognize that corruption and collusion remain a problem, exacerbated by decentralization, and there is a need to forge new alliances that unite civil society, the independent business community, and international actors to define a clear good governance and anticorruption agenda; (v) ensure the usefulness, impact, and sustainability of TA grants used for traditional delivery of training and analytical work on sectors and themes; and (vi) station at the resident mission an adequate number of international staff with requisite expertise for each area identified as a focal area in the country strategy program.

<sup>37</sup> ADB. 2005. *Country Assistance Program Evaluation for Indonesia*. Manila.

## C. Other Development Partner Support

65. In Indonesia, aside from ADB, the transport sector has been traditionally supported by international organizations, such as the World Bank and the Islamic Development Bank, with bilateral assistance from Australia, the People's Republic of China, France, Germany, Japan, the Republic of Korea, and the Netherlands.

### 1. World Bank

66. The World Bank has supported the road sector in Indonesia for the past 30 years and while other modes have received selective support, the road sector will continue to be the largest part of World Bank intervention. From 1980 to 2005, 11 loans for road improvements were approved. The experience of the World Bank in the road sector is mixed with some recent loans assessed as only partially satisfactory. However, the World Bank program continues with direct assistance to road improvement in both east and west Indonesia. The World Bank is also continuing its assistance to DGH in improving procurement and bidding process and is active in road safety.

### 2. Islamic Development Bank

67. From January 1978 to January 2009, the Islamic Development Bank financed 75 projects in all sectors for a total \$931 million (6% of bank lending). A loan of \$60 million was approved on 1 May 2011 to cofinance the RRDP with ADB. The Islamic Development Bank is currently in the process of lending \$60 million to Indonesia to support the container terminal expansion of Belawan Port.

### 3. Australian Agency for International Development

68. Indonesia is the largest partnership program of AusAID with the country receiving approximately \$475 million–\$500 million per year in TA and capacity-building support. In the transport sector, AusAID is active through two types of activities: (i) a lending program to support infrastructure improvements and (ii) activities under the Indonesia Infrastructure Initiative (IndII). In the road sector, the Eastern Indonesia National Roads Improvements Projects loan was signed in 2008 for \$330 million for rehabilitation in Bali, Flores, Central, North, and South Sulawesi, and Sumbawa. An anticorruption plan was also implemented. The ongoing commitment to the road sector indicates that AusAID believes that the support is productive. While specific implementation issues have been noted, the overall program result is positive.

### 4. Japan International Cooperation Agency

69. In 2009, Indonesia formally became a middle-income country, and it is no longer eligible for highly concessional Japan International Cooperation Agency (JICA) loans. JICA's recent focus has been on the Jabotabek area with the planned development of the mass rapid transit system and a feasibility study to recommend the location of the future Jakarta Port (probably near Bekasi). In the past, JICA was involved in all transport modes, but in the future, they are considering reducing involvement in the road sector. JICA's forward 5-year transport plan includes a limited involvement in roads, with more extensive activity in the rail sector, ports, and urban transport. In addition, JICA is having discussions with the government concerning a loan to support the Climate Change and Gas Emissions program.

## 5. Other Support

70. The Government of France, through Direction Générale du Trésor, is currently involved in assessing an urban rail program in Bandung and a similar project in Surabaya. Each of these projects ranges from \$500 million to \$1 billion so they will require cofinancing. KfW (Reconstruction Credit Institute) for German assistance had provided lending for procurement of vessels and railway rolling stock. GIZ (German Society for International Cooperation) is currently carrying out an Integrated Climate Change Study with Action Plan for the Ministry of Environment and assistance to MOT on urban transportation on four selected cities: Bogor, Palembang, Solo, and Yogyakarta. The Republic of Korea provided technical support to develop the Master Plan of Arterial Roads in Sumatra. Loans from the Republic of Korea, based on the study, are expected to improve the Sumatra road network. The Government of the People's Republic of China provided a loan for the Suramadu Bridge between Surabaya and Madura Island.

71. ADB has worked closely with key development partners in sharing information and learning from each other. ADB is coordinating with AusAID on a number of transport sector initiatives, and will continue to work with them on future ADB projects, particularly on road maintenance, axle load control, and road safety aspects. ADB will continue to work closely with partners active in this sector and forge stronger partnerships.

### D. ADB's Sector Forward Strategy<sup>38</sup>

72. The government's priorities and concerns in the transport sector are consistent with the views and recommendations expressed in Strategy 2020 and the Sustainable Transport Initiative Operational Plan. Strategy 2020 outlines three critical agendas: inclusive economic growth, environmentally sustainable growth, and regional integration. All these drivers of change are explicitly noted in the government's RPJMN. The Sustainable Transport Initiative identifies the emerging challenges of regional cooperation and integration, urban transport, climate change and energy efficiency, road safety, and social issues. The aim of the transport strategy is to prepare a road map for a transport system that is accessible, safe, environment friendly, and affordable.

73. ADB is following a two-pronged approach in the transport sector. For institutional and policy aspects, ADB will provide program loans, such as the proposed policy-based loan on Inclusive Growth through Improved Connectivity.<sup>39</sup> For physical asset improvements, ADB will continue to fund investment projects for road rehabilitation and upgrading. The lessons learned under program loans, project loans, and CAPE studies will be integrated into designs of new projects.

74. Since 2000, ADB support for projects in the transport sector has been exclusively in the road subsector. The projects have all met their objectives and have been evaluated as satisfactory. Despite solid efforts by the government and support by all development partners during the last 30 years, the needs of the road sector remain considerable. The national road network is not yet complete or adequate in Kalimantan, Papua, Sulawesi, and Sumatra, not to mention the critical need to improve provincial and *kabupaten* road systems. Since 2005, roads in Java have seen signs of heavy congestion requiring greater efforts to be channeled to Java while continuing road improvements in the other islands.

75. ADB has a long tradition of dealing with the Ministry of Public Works (MPW) and the DGH for road projects and road rehabilitation loans. The lending process, project monitoring, and loan

<sup>38</sup> The strategy presented here is for discussion purposes only and represents no commitments on behalf of ADB or its clients.

<sup>39</sup> Currently under processing.

management are well established and work smoothly. Continued financial support to the road sector would be in accordance with government objectives, consistent with ADB strategy, and responsive to vast unfulfilled need and demand.

76. The proposed ADB transport strategy keeps in mind the successful areas of prior ADB investment, the priorities of the government, the broad general and country-specific development strategies outlined by ADB, and the need to address the key issues. Taking into account the government's transport priorities and ADB's Sustainable Transport Initiative, the strategic focus of support in the transport sector will include (i) the improvement of transport infrastructure to provide a safe, efficient, and resilient network; (ii) improved interisland and intransland connectivity through improving logistics policies, regulations, and infrastructure; and (iii) institutional development, strengthening, and capacity building with a particular focus on improving access of the private sector to infrastructure supply and operations. ADB, in partnership with AusAID, will address key sector issues, including (i) road safety; (ii) road maintenance, axle load control, and performance-based contracting; (iii) improved safeguard implementation; and (iv) climate proofing of roads.

77. ADB's forward program of technical assistance and lending is aligned with the government's national transport strategy that emphasizes enhanced domestic connectivity through infrastructure development and transport sector reform. To foster inclusive growth and promote better transport connections in underserved islands, ADB's ongoing RRDP focuses on (i) improved intransland road connectivity; (ii) improved efficiency of civil works contracting through international bidding; and (iii) improved social and environmental outcomes through better road safety awareness, enforcement, and reporting. Another Regional Roads Connectivity Project is planned for 2014, with project preparatory activities commencing in 2012. Projects will directly benefit women through better opportunities for employment; targets for women government staff in training programs; and gender-sensitive community-awareness programs on road safety, prevention of HIV/AIDS, and trafficking in girls and women. Road designs will incorporate gender aspects.

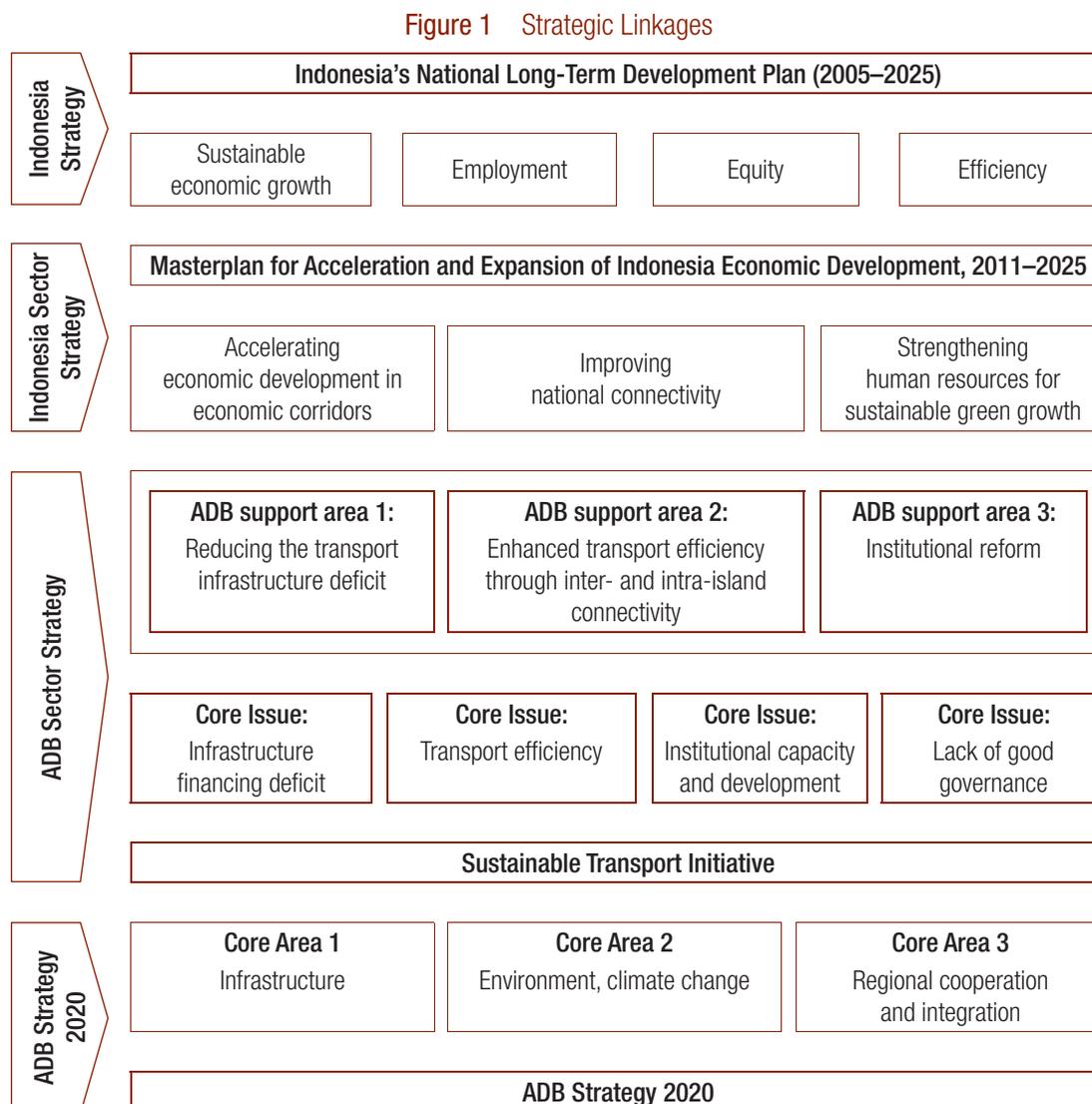
78. To address the policy and regulatory constraints to improving domestic connectivity, ADB is supporting the government through a diagnostic assessment of logistics. ADB's TA will identify the policy and regulatory barriers to promoting an integrated and multimodal transport system that provides efficient end-to-end transport services, both for individuals and businesses. It is expected that this advisory and capacity-building support will lead to a policy-based loan for Enhancing Inclusive Growth through Connectivity in 2012, with a subsequent subprogram planned for 2013.

79. **Gender.** ADB interventions will aim to increase women's access to social benefits due to improved roads and transport services, including better access to health and education services and to markets and increased trading opportunities. All projects will ensure that gender aspects are incorporated into road design and construction to maximize women's equal access and benefits. The road development projects will support (i) targets for women's employment in construction and roadside maintenance post construction; (ii) increased awareness of road safety and reduction of its impacts, focused on local populations, including women and children; and (iii) gender-sensitive resettlement plans so that affected households secure better access to compensation resources and livelihood activities. All projects will support women's employment and the capacity development of female transport staff to promote the role of women in the transport sector.

80. As a middle-income country, Indonesia is no longer eligible for ADB concessional financing. As a result, future sovereign borrowing will be from ordinary capital resources. Nonsovereign borrowing by the private sector will be through the Private Sector Operations Department of ADB. The probable ceiling of available funding for ordinary capital resources lending in the transport sector would be \$1 billion over 5 years. ADB development strategy has always been consistent with national development plans and priorities.

## 1. Expected Results

81. The strategic linkages, showing three support areas for ADB, are in Figure 1.



ADB = Asian Development Bank.

Source: ADB consultant.

### *Support Area 1: Reducing the Transport Infrastructure Deficit*

82. The reduction of the transport infrastructure deficit to enhance economic growth has been the rationale for the continuous ADB intervention in the road sector. There is no doubt that the infrastructure deficit remains substantial, needing assistance from development partners. Since the budget for roads has expanded in the past few years, the focus has shifted from only asset preservation to asset creation. This is further guided by the concern for improved connectivity—both interregional and intraregional. The government sees improved connectivity as central to achieve improved transport domestic demand and to increase people's access to jobs, markets, and basic services leading to improved economic growth.

83. To foster inclusive growth and promote better transport connections in underserved islands, ADB is providing support for the RRDP. The project directly addresses the need to support (i) improved connectivity—both interisland through enhanced road connectivity along the Kalimantan border with Malaysia and intransland through the focus on closing the missing links in the south Java highway; (ii) improved efficiency through performance-based contracting; and (iii) improved social and environmental outcomes through improved road safety awareness, enforcement, and reporting.

84. In Java, most of the attention has been on the northern corridor, both upgrading the current arterial links and building the Trans-Java Expressway, but the southern corridor has been left incomplete. Poor logistics leads to higher input cost and lower international competitiveness. As shown above, road assets are also linked to GDP. Lack of road assets suppresses private sector investment and retards economic development. This project will address key infrastructure gaps both for the northern border of Kalimantan and the southern Java corridor. The proposed project will also include a small allocation for improvements to road safety.

85. Responsibility for road safety is currently divided between the DGLT in MOT, the Indonesian National Police, and DGH. Previous ADB road safety support focused on the development, control, and enforcement of road rules and regulations. However, those efforts inevitably crash against the wall of poor governance, which limits the effectiveness of any control or enforcement initiative.

86. This leaves a focus on the infrastructure as the principal and most effective way of addressing the long-term road safety issue. IndII under AusAID funding has focused on carrying out a road safety audit and addressing the most needy of the “black spots” identified in the audit. Further, with IndII support, DGH has now officially established a road safety unit. On an unofficial level, consultation is also ongoing among the three responsible authorities to move toward more coordination on infrastructure, traffic management, registration, and enforcement. However, the task is vast and the opportunities are many for further implementation support and pilot projects.

87. ADB has initiated discussions with AusAID and the World Bank to define tangible initiatives that can be taken to support current steps to improve the safety of basic road infrastructure and, where possible, management and enforcement. The initiative should be cooperative and should build on current activities and successes. The IndII Program proposal is for establishment of integrated pilot test sections where DGH, DGLT, and the Indonesian National Police work together to provide a safe system. The roads improved under the RRDP could be part of that pilot program.

88. Piloting performance-based contracting will also be undertaken to improve road maintenance. The current pilot projects undertaken by DGH in East and West Java provide a model for how such contracts could be developed under such a loan. Since the current pilots are the first longer-term performance-based maintenance contracts undertaken by DGH, the lessons learned will be reviewed carefully.

89. DGLT is responsible for providing weighbridges to control axle loads. However, responsibility for operating the weighbridges lies with the provincial governments. The levy from penalties imposed on overloaded vehicles is a source of revenue for provincial governments, so they are less interested in controlling overloading than in collecting revenues from fines levied on overloaded vehicles. ADB will work with DGLT and other development partners to address this issue and improve the sustainability of road maintenance.

90. The high-capacity expressway network is far behind schedule. The initial Trans-Java Expressway links were concessioned in the late 1990s. They have still not all been initiated for a number of reasons, mainly disputes over the responsibility for land acquisition. This leads to a need to rationalize the roles of

the Toll Road Regulatory Agency (BPJT)<sup>40</sup> and DGH regarding expressway planning, development, and delivery. Current initiatives to establish an expressway development authority and an expressway delivery company will partly address the infrastructure deficit.

91. **Outputs:**

- i. Strategic and national road missing links upgraded to national road standards
- ii. Improved monitoring enforcement and reporting of road safety violations
- iii. Improved awareness among community groups, road service providers, and government officers about road safety
- iv. Extended use of performance-based contracting for road maintenance

92. **Outcomes:**

- i. Improved intercountry and intransland connectivity through better road access
- ii. More efficient and safer transport on road network for road users and local communities

*Support Area 2: Enhanced Transport Efficiency and Inter- and Intra-Island Connectivity*

93. ADB will support the government's objective of improving domestic connectivity through support for a diagnostic assessment of logistics constraints. ADB's TA will identify those policy and regulatory barriers that hamper each component of the multimodal transport system from working seamlessly together to provide efficient end-to-end transport services.

94. Connectivity is one of the key concerns of the government. Linking the various provinces and islands together to allow for more equitable economic growth and development is a logical and laudable concern. Most of that initiative falls on DGH to create a functioning national road structure to support the identified connectivity corridors through and between provinces; the Director General of Marine Transport of MOT to ensure that the ferries and freight vessels that link the islands together continue the road corridors through a marine highway; and the Director General of Air Transport to provide the higher-level access needed between both key large centers and between and among the smaller and remote areas. The basic premise follows the logic that the citizens of Indonesia expect a minimum level of sustainable transport service to ensure connectivity, both intraregionally and interregionally, to allow investment and economic growth decisions to be made with confidence.

95. ADB support to enhance connectivity will be provided in two steps, namely, a policy and advisory TA<sup>41</sup> to allow for scoping of the issues, potentials, and priorities to enhance connectivity and minimum service standards, both efficiently and at minimum cost subsidy, followed by a more extensive program loan to implement the ensuing connectivity strategy. The provision of efficient transport and logistics services to the lower density eastern islands will necessitate consistent improvement in basic port infrastructure and services provided by the government. ADB will support the government's efforts to improve logistics policies and regulations, including improvement in the enabling environment for private participation in transport and transport services.

96. **Outputs:**

- i. Identified priority policy, regulation, and physical investments to improve both intraregional and interregional connectivity

<sup>40</sup> Badan Pengatur Jalan Tol in Indonesian.

<sup>41</sup> ADB. 2011. *Technical Assistance to Indonesia for Improving Domestic Connectivity*. Manila.

- ii. Investments in key national infrastructure, where needed, to enhance transport flows and to reduce logistics costs
- iii. Improved capacity to move both people and goods via the interprovincial and intraprovincial networks through better intermodal linkage and improved logistics
- iv. Improved access to transport investment opportunities for the private sector

**97. Outcomes:**

- i. Lower trade and logistics costs for producers and consumers in Indonesia
- ii. Measured efficiency gains through key supply chains linking Indonesia to other regional countries and linking the provinces of Indonesia to each other
- iii. Increased balance in investment between the private and the public sectors in key transport and logistics infrastructure and operations

*Support Area 3: Institutional Reform*

98. The third focus area for the upcoming 5-year period is on continued efforts to reform existing government institutions—both SOEs and other transportation agencies and bodies. One of the most important issues in the transport sector is how to implement the provisions of the recent modal laws as they apply to breaking the control of the SOEs over implementation of transport infrastructure and service delivery. Leaving the SOEs in their present form is not a viable long-term solution, but transforming them into a structure that can be both sustainable and will prosper in a competitive environment is also a challenge. The transformation of Jasa Marga, the Indonesian toll road company that was previously a SOE, is a good case study. Jasa Marga was not a high-level performer under government management and control, but once it listed its shares on the stock market and changed management into a company structure with independent reporting and auditable finances, it became a transformed company. Its balance sheet has significantly improved, and it is now arguably the most responsive and competent toll road company in Indonesia.

99. Institutional support will be needed to help restructure (i) the Pelindos into some profit-making units and others that can be merged with the new port authorities; (ii) state navigation companies into either profit-making corporations or outright sale to the private sector with competitive bidding for PSOs on financially unviable routes; and (iii) the Angkasa Puras similarly into some profit-making units and others that remain in the hands of the public sector such as navigation aids, airport-approach navigation, and en route navigation.

100. These changes will improve quality of service to users and operational efficiency, as well as enhance interisland and intransland connectivity (support area 2), since, in many cases, the role of the state needs to be defined clearly and structured in a way to ensure that competition and efficiency of service delivery at lowest cost remain the overriding objectives. While these initiatives are not in themselves hugely expensive, they have the potential to completely modernize the current structure of the transport system in Indonesia.

101. The rationalization of the roles of BPJT and DGH in developing the high-capacity road network into an expressway development authority and an expressway delivery company will partly address the infrastructure deficit (support area 1). The key to achieving improved output of high-capacity expressways is to focus increased resources and attention on land acquisition.

102. It is likely that cofinancing of this initiative will be needed, but this area offers significant potential for ongoing cooperation with other donors, particularly with AusAID, which is already involved in the roads, port, railway, and aviation sectors.

**103. Outputs:**

- i. Rationalized structure of governance and service delivery in transport infrastructure and operations for all modes
- ii. Broadened base of private sector investment in transport infrastructure and operations
- iii. Improved competition and innovation through increased investment by the private sector
- iv. Reduced cost and improved efficiency through private sector competition
- v. Improved transport system access and service through competition with private sector operators

**104. Outcomes:**

- i. Improved efficiency of transport system development and operations
- ii. Reduced cost and improved economic logistics for freight and passenger movements
- iii. Improved linkage between economic growth centers
- iv. Improved international competitiveness of Indonesian industry

## E. Assumptions and Risk

105. Implementing the recommended program has the following risks: (i) lack of coordination between the key agencies involved in road safety design and operations will continue; (ii) agreement on the alignment and the design of the missing road links will be delayed; (iii) governance issues and/or corruption in either procurement or contracting will delay the implementation schedule; (iv) land acquisition will be required and resettlement of residents along the alignment will delay the project; (v) suitable financing arrangements/mechanisms cannot be achieved for both the regional roads program and other cooperative initiatives; and (vi) planning and development for the connectivity and subregional transport projects will not proceed in a timely way to allow for project initiation during this planning cycle.

106. Progress in achieving target outputs and outcomes will be tracked by review of the government annual progress reports and through ADB's specific project reviews. A results framework is provided in Table 3 of this chapter. In Appendix 2, further linkage of the key elements of the investment program is shown in the linkage of sector issues, plans, and results in Table A2.1; and the problem tree analysis is outlined in Figure A2.1.

Table 3 Transport Sector Road Map and Results Framework (2011–2015)

| Country Sector Outcome   |   | Country Sector Output                                    |  | ADB Sector Operations   |   |
|--|---|--|--|---|---|
| Outcome with ADB Contributions   | Indicators with Targets and Baselines   | Output with ADB Contributions                            | Indicators with Incremental Targets (baseline = 0)   | Planned and Ongoing ADB Interventions   | Main Outputs Expected from ADB Contributions  |
| Improved inter-country and intra-island connectivity for all, including poorer communities | Average national highway condition rating <i>good</i> to <i>fair</i> from 87% in 2009 to 94% by 2015  | Road transport system expanded, improved, and maintained | Increase in national roads to 47,600 km (2009: 42,700 km)  | <b>Planned key activity areas</b><br>Regional road capacity expansion (45% of funds)<br><br>Transport logistics reforms for enhanced connectivity (55% of funds)<br><br><b>Pipeline projects with estimated amounts</b> <ul style="list-style-type: none"> <li>– PPTA—Enhancing Inclusive Growth through Improved Domestic Connectivity (\$1.0 million)</li> <li>– Enhancing Inclusive Growth through Connectivity Subprogram 1 (\$300 million); 2013. Subprogram 2 (\$100 million)</li> <li>– PPTA—Regional Roads Development 2 Project (\$1.5 million)</li> <li>– CDTA—Promoting Socially Sustainable Transport through Improving Non-Motorized Transport (\$400,000)</li> <li>– Regional Roads Development Project II (\$150 million)</li> <li>– PATA—Support for Connectivity-Capacity Development (\$1.5 million)</li> </ul> | <b>Pipeline projects</b><br>300 km of roads in poor condition rehabilitated or reconstructed to national road standard<br><br>Improved logistics and lowering of transportation costs by 20% in four central and east Indonesian ports<br><br>Logistics diagnostic tools developed and used to measure improvements to cost and efficiency<br><br>Increased share of women's employment in civil and maintenance works<br><br><b>Ongoing projects</b><br>420 km of roads in poor condition rehabilitated or reconstructed to national road standard |
|  | Number of fatalities arising from road accidents falls from 2.83 per 10,000 registered vehicles in 2009 to less than 2.5 by 2015  |  | Logistics action plans, including detailed reform and investment programs, formulated and adopted by 2015  |   |   |
|  | All islands have interisland shipping and port service consistent with the national strategy. Improvement of fleet productivity from 8,800 ton-miles/dwt (2010) to 9,300 ton-miles/dwt (2015) |  | Improvement of Logistics Performance Index international ranking from 75 to 50 by 2015   |   |   |
|  |   |  | Transfer of 50% of contracts for 56 private sector-operated pioneer service routes to smaller islands from annual to multiyear contracts by 2015 |   |   |

ADB = Asian Development Bank, CDTA = capacity development technical assistance, dwt = deadweight ton, km = kilometer, PATA = policy and advisory technical assistance, PPTA = project preparatory technical assistance.

Source: ADB consultant.

# Appendix 1

## Subsector Summaries

### 1. Road Transport

#### *a. Legal and Institutional Framework*

1. The Directorate General of Highway (DGH) is part of the Ministry of Public Works with responsibility for the management and development of the national road network. Provincial and *kabupaten*<sup>1</sup> roads are the responsibility of provincial and *kabupaten* governments, respectively, although DGH is responsible for planning of provincial highways. The Toll Road Regulatory Agency (BPJT)<sup>2</sup> is responsible for the regulation and management of toll roads with DGH responsible for network system planning and definition of technical standards.

2. Expressway development and management has, until recently, been poorly organized. Both DGH and BPJT have responsibilities for some aspects of development and execution, and the relative responsibilities are still being defined. At the moment, a clear long-term national expressway network has not been defined, and relative roles and responsibilities for creating that network remain confused. One of the options under consideration is for BPJT to assume all responsibility for expressway development and become an Indonesian expressway development authority. Managing delivery of expressways, both government-funded and public-private partnership (PPP), would be under the responsibility of a new public service agency, the Badan Layanan Umum (BLU), the Expressway Corporation Unit under BPJT. The consideration of these changes is accompanied by a full financial viability review of each of the current 24 private sector participation (PSP) projects, either committed or planned, to assure that each is suitable for concessioning. Indications are that all concessions and concessionaires have passed the financial viability test and are considered to be viable.

3. Separation of responsibility for road service delivery and enforcement remains a serious institutional problem. At the moment, DGH develops road infrastructure, the Directorate General of Land Transportation (DGLT) defines rules for operation and implements traffic control through signage and pavement markings, and the national police carries out enforcement of traffic rules. DGH is aggressively addressing “black spot” removal on national highways. The DGH road safety unit is improving the basic foundation for road safety. However, DGLT is not effective in delivering its mandate of ensuring effective signage, road markings, and monitoring driver behavior to help identify “black spots.” The national traffic police is hampered by legal restrictions on enforcement and, as a result, very little effective enforcement takes place at any level.

4. With the enactment of Law No. 22 on Traffic and Road Transport, DGH is responsible for preparing and establishing a road preservation fund (Road Fund), which will finance road maintenance in the future. The creation of the institutional structure for the Road Fund is being supported with funding

<sup>1</sup> *Kabupaten* are the equivalent of district-level areas.

<sup>2</sup> *Badan Pengatur Jalan Tol* in Indonesian.

by the Japan International Cooperation Agency (JICA). However, with some fuel subsidies still in place, it is not clear what longer-term income will form the basis of the Road Fund and how tied funding could be made available to the subnational governments to support road maintenance.

### *b. Infrastructure*

5. The total Indonesian road network is approximately 354,000 kilometers (km) distributed as toll roads (750 km), national roads (42,700 km), provincial roads (42,000 km), district roads (245,250 km), and urban roads (23,500 km).<sup>3</sup> From 2000, the network has increased at an annual average growth of 3% with new roads opening and national roads expanding by 30% during the period as provincial roads graduated. It is estimated that national roads will increase to 47,600 km in the next 5 years because of reclassification and new construction. Road density at 21 km per 100 square kilometers remains low compared to other Asian countries, with Malaysia and Thailand, for example, at 27 km and 35 km, respectively; and the Philippines, another archipelago, at 67 km.

6. A comparison of road assets to gross domestic product (GDP) is illustrated in Figure A1.1.

7. The provinces in the green band are undersupplied with road assets compared to the size of their GDP. Those in the yellow band are balanced and those in the blue band have more road assets than the size of their GDP can support, and only with outside assistance is asset preservation possible in those provinces.

8. Despite improvements over the last 5 years, about 13% (4,550 km) of the present national network<sup>4</sup> still needs urgent repair because of poor road condition.<sup>5</sup> District and urban roads are, however, in worse conditions as 50% of these roads are in need of major repair. A recent review of the DGH budget process concluded that the current funding level of approximately \$1.66 billion–\$1.89 billion is adequate to maintain the existing national road asset base in stable condition (footnote 4). However, funding for subnational roads is still far from adequate.

9. In 2010, 6% of the national road network was subjected to periodic maintenance for an average cost of \$200,000 per km, which was above the cost of international practice. Allocation for routine maintenance at \$4,600 per km is well above what is normally expected as is the price for road construction, with cost per km of expressway being more than double what is normally expected.

### *c. Fleet and Operations*

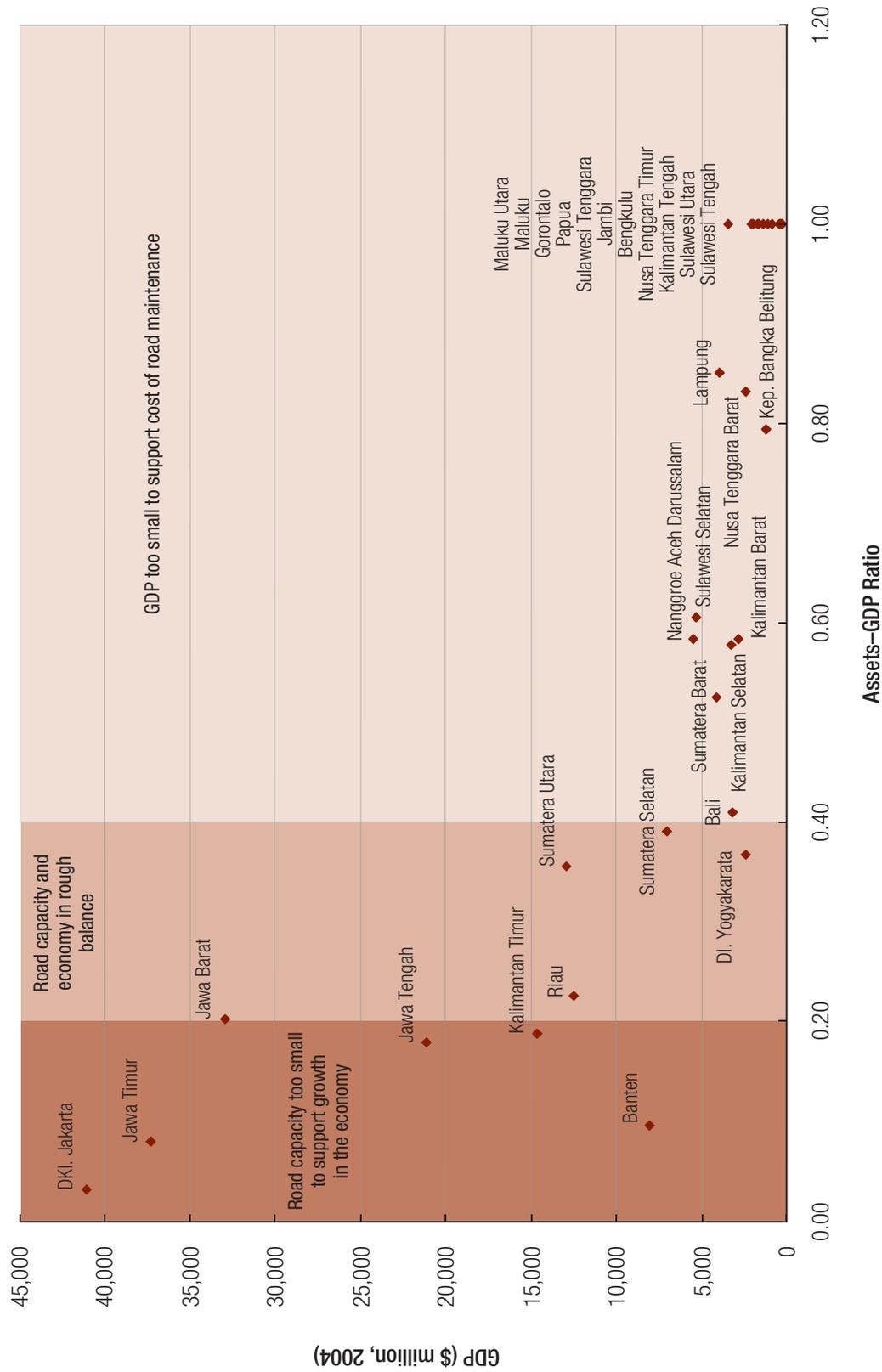
10. In 2008, the vehicle fleet was estimated to be 73 million, consisting of 52 million motorcycles, 11 million cars, 6 million buses, and 4 million trucks. Preliminary estimates for 2009 indicate the number could have increased to 81 million. Car ownership in Indonesia is still low at 70 vehicles per 1,000 of population compared with that in Malaysia at 225 (footnote 4). Therefore, with rising GDP per capita, the vehicle fleet will continue to expand rapidly, but likely at a lower rate of 10%–12%, instead of the current 13%–15%. Congestion is forecasted to get significantly worse in urban areas, especially as ownership levels in major cities are much higher than national averages.

<sup>3</sup> The total road network is comparable to that of South Africa and Turkey, countries of much smaller size and population.

<sup>4</sup> W. D. O. Paterson and G. Harahap. 2009. *Application of Medium-Term Expenditure Framework & Performance-Based Budgeting in Directorate General of Highways Indonesia*. December. Indonesia Infrastructure Initiative (financed by the Australian Agency for International Development).

<sup>5</sup> These are the roads classified as being in *poor* and *very poor* conditions.

Figure A1.1 Road Assets to Gross Domestic Product for Indonesian Provinces



GDP = gross domestic product.  
Source: ADB consultant.

11. At least 14% of the national roads and 9% of the provincial roads are considered seriously congested, with average speed being 42 km per hour or less. Congestion, particularly on narrow two-lane roads, has a negative impact on economic growth and contributes to the poor road safety record. In 2008, 20,000 road fatalities were statistically recorded,<sup>6</sup> though it is generally believed that the number is as high as 50,000 per year giving an annual index varying between 8 and 21 deaths per 100,000 population. Fatalities have grown at 14% per year since 2003, following vehicle growth. In comparison, the rate in 2007 was 18.5 for Thailand and 23.3 for Malaysia. The comparable rate was 12.8 for the Republic of Korea and 5.2 for Japan. While opportunity exists to reduce road accident fatalities significantly, at the moment, even at the higher-level estimate, the figures are similar to those of other Southeast Asian countries.<sup>7</sup>

12. Transport services, whether by truck or by bus, are operating in competitive markets. Entry to the industry is largely unrestricted and tariffs are determined by market forces, with the exception of fares for low-income passenger bus services set by the government for interprovincial services and by provincial authorities for services within provinces.

#### *d. Investment*

13. Expenditures in the road sector accounted for 22% of government budget in the 1990s and now accounts for only 10%, about 1.7%–1.9% of GDP. The DGH budget in 2005 was about \$611 million but climbed rapidly to \$1.9 billion in 2009. According to the current Five-Year Plan of the National Development Planning Agency (BAPPENAS),<sup>8</sup> the DGH annual budget should rise to an average of approximately \$3.3 billion per year over 2011–2015.

14. Actual road construction in 2005–2009 fell short of the plan by 20%. The plan for the next 5 years is ambitious in terms of road construction and rehabilitation compared to past achievements (target of 27,000 km for 6,200 km realized in the last 5 years). In the 2009 budget, two-thirds of DGH's budget went to rehabilitation and road construction and one-quarter to road maintenance. In the 2010 budget, the funds allocated to road and bridge maintenance were 38% of total expenditures.

15. The rapid expansion of budget over the last 5 years and the further expansion over the coming 5 years are welcome, but they also rely on DGH having a ready pipeline of major work that can use the budget. Unfortunately, that pipeline is largely empty following the 1997/98 Asian crisis. At the moment, the only large expenditure items available are land acquisition for road widening, expressway development, and lane widening of current two-lane national roads. The lack of effective construction targets for the increased budget runs the risk of exacerbating the tendency toward corrupt practices.

16. In order to improve construction quality and governance, DGH is now introducing a medium-term expenditure framework and performance-based budgeting. These have very clear advantages: these guarantee continuity of funding, and provide transparent accounting and good governance with a system to control running costs.

17. These changes are being accompanied by a full financial viability review of each of the current 24 PSP projects, either committed or planned, to assure that each is suitable for concessioning. Indications are that all concessions and concessionaires have passed the financial viability test and are considered to be viable.

<sup>6</sup> Police and hospital records showed a figure twice as high.

<sup>7</sup> United Nations Economic and Social Commission for Asia and the Pacific. 2010. *Statistical Yearbook for Asia and the Pacific 2009*. Chapter 20 Transport.

<sup>8</sup> Badan Perencanaan dan Pembangunan Nasional in Indonesian.

18. The development of expressways or toll roads in Indonesia has not proceeded as fast as expected, with 728 km of expressway available at the end of 2009 (33 concessions). For 2010–2014, 400 km of additional toll roads are expected to be constructed, at an estimated cost of \$3.8 billion.

## 2. Maritime Transport

### *a. Legal and Institutional Framework*

19. The Directorate General of Sea Transportation of the Ministry of Transportation (MOT) has the overall responsibility for sea transportation, which includes (i) issuance of licenses for ships and maritime services, (ii) management and operation of navigation equipment, and (iii) responsibility for maritime safety and training of seafarers. It is also the regulator of port activities whether publicly or privately operated.

20. The new Shipping Law (2008) recognizes that the sector will benefit from the abandonment of the Indonesian Port Corporation (Pelindo)<sup>9</sup> monopoly and the introduction of fair competition. However, to get these benefits, reforms have to be implemented and the new port authorities and harbor masters have to be put in place to allow private investors to compete with the Pelindos, as it was intended. At the moment, establishment of the port authorities as the landowner body is hampered by the current ownership of the land, which is registered directly to each Pelindo. The Pelindos see the ownership of the port lands as a registered and recognized asset whose removal will require significant amendment to their balance sheet. Change of the current arrangement will not take place until this issue is resolved.

### *b. Infrastructure*

21. There are approximately 1,700 ports in Indonesia—725 under government jurisdiction and close to 1,000 private special purpose ports. Of the 725 government ports, 111 are commercial ports under the jurisdiction of the Pelindos (I, II, III, and IV) who, as state-owned enterprise (SOE), report to the Minister of State-Owned Enterprises (MSOE). Of the public ports, 614 are designated as noncommercial because they mainly handle passengers and/or small-scale domestic trading and are locally managed. Among the commercial ports, 25 are considered strategic, of which four are main gateway ports.<sup>10</sup>

22. When comparing container terminal productivity with ports in Southeast Asia and Europe, Indonesian ports suffer from excessively high berth occupancy and excessively low twenty-foot equivalent unit (teu) production per berth. Noncommercial ports in Indonesia are important, but because of lack of funding mechanisms, these ports often have not been modernized and suffer from inefficiency. Among other problems, they continue to rely on traditional, inefficient cargo and passenger handling methods.

23. In 2008, total sea transportation in Indonesia was 779 million tons (mt), to support international trade. Most of the domestic trade is now under national flag (80%), while only a small proportion of the foreign trade is carried out by national flag (7%). Over the years, Indonesian shippers have captured a higher share of the domestic trade without penetrating successfully the foreign trade component. In the last 8 years, domestic sea transportation has grown at 6.0% on average with international sea transportation growing at 4.9%.

<sup>9</sup> *Pelabuhan Indonesia* in Indonesian.

<sup>10</sup> The four gateway ports—Belawan Port, Makasar Port, Tanjung Perak Port, and Tanjung Priok Port—have special authorities to import certain restricted goods such as food products, textiles, and electronics.

24. The four Pelindos operate independently, managing all the commercial ports of importance. In 2008, their total throughput was 404 mt (52% of the total traffic). Total freight volume has varied since 2000 without any clear positive trend. One exception is container traffic, which over that period has jumped from 2.9 million teus in 2000 to 9.4 million teus currently. Most of this increase has come from Pelindo II in Jakarta. However, this container traffic is still low for a maritime nation when compared to that of countries like Malaysia, a much smaller country, with approximately 15.7 million teus. Passenger traffic in the Pelindo ports declined from 23.7 million in 2000 to 17.4 million in 2008, a drop of 25%. Competition from low-cost air transport mainly explains this decline. Interisland traffic (66%) dominates commercial port activity with 6.3% annual growth compared to 3% for international traffic over the last 20 years.

25. With a throughput in 2008 of 42 mt and 3.7 million teus, Tanjung Priok in Jakarta is the largest port. The four main gateway ports are Belawan in North Sumatra (14 mt), Tanjung Perak and Tanjung Priok (15 mt) in Java, and Makasar (4 mt) in Sulawesi. There are other ports of strategic importance: Dumai (about 30 mt, if liquid and private jetties are included) is a major export port for crude palm oil and fuel; and in Kalimantan, Balikpapan (21 mt) and Banjarmasin (41 mt) are major oil and gas export ports (including liquid bulk from private jetties).

### *c. Fleet and Operations*

26. There are 8,000 national registered sea vessels in Indonesia and, compared to international standards, they are relatively small with an average 4,000 deadweight tons (dwt). Foreign vessels (7,500 vessels) are bigger with 15,000 dwt–25,000 dwt but still small compared to the current trend in the world fleet. There are more than 1,000 shipping companies. Indonesian shipping companies are usually small, owning only a few ships and having difficulty to raise capital to upgrade their fleet.

27. Passenger ferries play an important role in connecting Indonesian islands carrying 47 million passengers and 41 mt (2007). On certain interisland routes, the government provides a pioneer route subsidy program to ensure that carriers can continue to serve those routes profitably. In 2009, 85 ferry routes received \$14.9 million in subsidies with a further \$29.6 million allocated to 67 interisland freight routes. Subsidies are given for 1 year and are terminated when the route becomes commercially viable. On behalf of MOT, a review of the public service operation (PSO) policy for pioneer services was conducted in 2010 and a series of recommendations was made, which suggests that competitive bidding be increased, quality of service for suppliers be defined, and multiyear contracts be used to allocate routes.<sup>11</sup> The responsibility for passenger ferries and roll-on/roll-off freight services is included in the national marine highway system and falls under the DGLT of MOT.

28. The global trend is to have larger container ships on major international routes. In the future, larger vessels are likely to serve the Jakarta–Singapore route, and smaller vessels will then be used on feeder and domestic routes. This means that improvements in port facilities will be needed to accommodate larger vessels. However, the more immediate constraint in commercial ports is a lack of proper handling equipment to increase the productivity of rapidly aging container cranes.

29. Domestic shipping companies have small container ships<sup>12</sup> and cannot capture economies-of-scale benefits from larger vessels. High interisland freight rates imply that goods are more expensive in remote areas.

<sup>11</sup> Indonesia Infrastructure Initiative (financed by the Australian Agency for International Development). July 2010. *Public Service Obligation and Pioneer Service Policy in the Transport Sector*. Jakarta.

<sup>12</sup> Domestic container vessels are small due to low demand for interisland container services.

30. Poor inter-modality and lack of good connections between the rail system and ports, and airports and city centers have been a serious limitation for the development and expansion of the railway system.

31. In 2008, the new Shipping Law was enacted, breaking the monopoly of the Pelindos, redefining the cabotage policy, and forcing a clear distinction between regulatory functions and operations. The required new organizations and institutional changes concerning, for instance, the establishment of the port authority and the harbor master are not expected to be completed before 2011/12. Key issues revolve around the ownership of the port lands, which now rests with the Pelindo and which, in the future, should be transferred to the new port authority.

32. Following the enactment of the new Shipping Law, MOT in 2009 launched the National Port Master Plan (NPMP), due for completion in 2011. The NPMP is a joint effort of MOT and the Australian Agency for International Development (AusAID) through the Indonesia Infrastructure Initiative. The draft NPMP, among its different tasks, has produced a relatively optimistic forecast for 2030.<sup>13</sup> Parallel to the NPMP, MOT has launched a national port system in which ports are now classified according to a new hierarchy (main ports, collector ports, and feeder ports). One of the preliminary conclusions of the draft NPMP is that new ports will be required in the short to medium term. In this context, JICA is conducting a study to determine the optimum location for such a new port in the Jakarta area.

### 3. Rail Transport

#### *a. Legal and Institutional Framework*

33. Railway operations are under the responsibility of an SOE, P.T. Kereta Api Indonesia (PTKA), which reports to the MSOE, while the overall management of the sector is left to the Directorate General of Railways of MOT. While the rail infrastructure is formally the responsibility of the government, PTKA maintains the track under an infrastructure maintenance obligation which exactly matches the cost of maintenance carried as a track access charge. In addition, PTKA received a further \$60.5 million in PSO payments. In 2008, PTKA made an operating loss of \$21.5 million, but the addition of nonoperational revenue results in a small profit of \$1.6 million.

34. PTKA as an operator is barely profitable, and services are largely not able to cover costs with revenues supported by PSO payments.

35. Until the enactment of the new Railway Law (Law No. 23/2007), MOT remained responsible for sector policy, planning, and regulation, and the provision of rail infrastructure and signaling, while PTKA had the mandate to operate and provide all services, and maintain the infrastructure. The law, however, allows the private sector, the local government, and the community to be involved in the provision of railway services in the form of special-purpose railways. It also allows freedom in freight and passenger rates. New institutional arrangements are being designed and will form part of the Railway Master Plan scheduled for 2010/11.

36. PTKA faces severe competition from low-cost airlines for passenger traffic and from the road and coastal shipping for long-distance freight services. The only major institutional reform has been to separate the commuter operation from PTKA in Jabotabek<sup>14</sup> and create a new company that collects revenues and carries its own maintenance. Separation of infrastructure from operations and the introduction of private sector operators through special-purpose railways have not yet been implemented,

<sup>13</sup> The forecast assumes an annual growth of 8.6% for containers, 15% for petroleum products, 5% for coal, and 10% for crude palm oil.

<sup>14</sup> Jakarta, Bogor, Depok, Tangerang, and Bekasi.

and different options are still under consideration by the government. Until it is resolved and institutional changes are carried out, the railway system will not be able to become commercially oriented, profitable, and forward-looking.

### *b. Infrastructure*

37. The railway system is made up of four unconnected segments, three of which were built during the colonial time beginning in 1864, with the final main Bukit Asam coal line built during the 1970s, the Java segment (3,700 km), and the Sumatra segments—North, South, and West—totaling 1,340 km consisting mainly of meter-gauge single tracks.

38. Most railway assets are old and deteriorating with two-thirds of the serviceable rolling stock being more than 20 years old. However, in the last 5 years, improvements have been carried out on 1,850 km of track with 245 km being added to the network, and signaling, communications, and electrification being installed in 96 rail segments.

39. There are great prospects of improving and developing private sector rail lines to move coal to the port in Sumatra and in Central Kalimantan. These are sizable investments that would be carried either by the private sector alone or in a PPP scheme.

40. There are also interesting opportunities in developing urban rail systems in major cities. Indonesia is also considering bringing high technology into the sector, and a feasibility study (2010) has been prepared with JICA support for a rapid train system between Jakarta and Surabaya.

### *c. Fleet and Operations*

41. In 2008, PTKA was operating 341 locomotives. Since 2000, the number of locomotives in operation has dropped by 20%, coaches by 10%, and wagons by 60%. Electric coaches used in Jabotabek, however, increased by 50%.

42. The total annual number of passengers was recorded at 198.3 million (2008), with the Java operation dominating with 194 million compared to 4.3 million for all Sumatra railways. In Java, passenger traffic has been relatively constant with a drop during 2003–2006 with passenger-kilometers slightly decreasing since the average distance decreased from 97 km (2000) to 91 km (2008). In Sumatra, annual railway passenger numbers have been constant over the period with a declining trend in terms of passenger-kilometer. The average travel distance decreased from 238 km to 225 km.

43. Total rail freight (2008) is 15.2 mt for Sumatra and 4.3 mt for Java (or 4.4 billion ton-km in Sumatra and 1.11 billion ton-km in Java). Freight has been slightly declining in Java with no clear trend in terms of ton-km. In Sumatra, volume of freight has remained relatively constant with the average distance slightly increasing.

44. In 2008, commodities transported were concentrated among coal (57%), cement (15%), and petroleum products (14%), with container traffic low at 1.5%. Since 2000, coal traffic has increased with petroleum and cement decreasing. PTKA has not been able to attract container traffic.

45. In Java, two-thirds of the passenger traffic comes from the Jabotabek corridor, emphasizing the commuter role of the PTKA. In terms of revenue, the Java railway contributes 75% of PTKA total annual revenues, with 20% coming from the South Sumatra railway (mostly coal trains), 2% from the West Sumatra railway (mostly coal trains), and 3% from the North Sumatra railway (miscellaneous).

46. In 2008, there were 147 reported railway accidents on the network with 196 victims (45 fatalities). The majority of accidents (99 cases) were due to derailments followed by collisions with vehicles at level crossings (21 cases). The number of accidents and accident severity have not significantly improved since 2000. While rail remains a relatively “safe” mode of transport compared to road, there are concerns with the high numbers of derailments and accidents at level crossings.

#### 4. Urban Transport

47. Populations in metropolitan and large cities have been growing at much faster rates than the national average, putting pressure on city services and aggravating the already congested transport system. There are 11 metropolitan cities and 19 declared big cities in Indonesia.

48. Cities have different types of public urban transportation systems. Public urban buses are not yet operating on a large scale, and many cities are still relying on vans and taxis. Public transportation is more developed in Medan, to a lesser extent in Surabaya, and not developed in cities such as Bandung. According to DGLT, public bus systems are going to be implemented in Palembang, Gorontalo, and Yogyakarta in near future.

49. TransJakarta started operations in 2004 with the aim of providing faster, convenient, yet affordable bus transportation for the citizens of Jakarta. It was originally a public service board of the city administration, but in 2006, it changed into BLU TransJakarta Busway—a service unit under the Transport Department of Jakarta DKI.<sup>15</sup> A BLU is an autonomous not-for-profit service delivery unit of a government body. It operates according to normal commercial accounting and reporting principles and reports to a supervisory board.

50. TransJakarta currently operates eight routes for a total of 240 km on segregated corridors on city streets. For bus service to be affordable, ticket prices (Rp3,500) are subsidized by the city government. Operators on the routes are selected by open tender. Currently, there are six operators, with five serving more than one corridor.

51. The organization currently has 426 buses, but will add another 100 in 2010, some being articulated buses. The design capacity of the present buses is 55 passengers, but during rush hours they carry up to 85 passengers. In near future, TransJakarta will carry in excess of 80 million passengers annually.

52. There is also a proposal to extend TransJakarta to the whole of Jabotabek, but this means dealing with three provinces and six authorities and improving the administration of the company. Mass transport service is provided to the whole of Jabotabek by commuter rail service operating on PTKA lines. This service now carries about 130 million passengers annually.

53. Despite the introduction of a dedicated bus route, congestion has not been reduced in Jakarta, and average speed is low.<sup>16</sup> Additional measures were therefore planned. The first attempt was the construction of a monorail (30 km network). Project work started in 2004 but came to a halt in 2008 over financing problems. The government has indicated its intention to restart the project during 2010–2011 for completion during 2015–2016. The second attempt is an urban mass rapid transit system with tracks at grade, elevated, and underground currently under design by JICA. The line presently considered is

<sup>15</sup> Daerah Khusus Ibukota Jakarta (literally: special area of the capital city of Jakarta) is the capital city of Indonesia.

<sup>16</sup> The *Jakarta Post* (29 March 2010) reports that police records in 2009 show Jakarta with 9 million vehicles and a very deteriorating air pollution record.

14 km long with a preliminary cost estimate of \$1.3 billion. Prefeasibility studies have been carried out for extension, and consideration is given for a second line. A first loan to start construction is also being prepared by JICA.

54. Other metropolitan and large cities already suffer from congestion and are candidates for urban rapid transit systems. The GIZ is currently helping MOT to design bus routes for selected cities and helping the government to meet its obligation in greenhouse gas reduction under an integrated climate change program. Once the study is completed, KfW may consider loans.

55. The Government of Australia, through AusAID's Indonesia Infrastructure Initiative, is also providing technical planning support for development of bus rapid transit (BRT) systems in Bogor, Palembang, Surakarta, and Yogyakarta. The support is focused on technical assistance—essentially supporting teams of development planning staff in each municipality to develop the BRT systems themselves.

56. The Government of France is considering giving assistance to an urban rail system in either Bandung or Surabaya using funds from the Direction Générale du Trésor or Agence Française de Développement. In 2006–2007, the French National Railroad (SNCF),<sup>17</sup> for the benefit of the French government, conducted a feasibility study of implementing an urban rail system in Surabaya. The study concluded that the cost would be over \$1.4 billion, which was then far above the cap of the RPE<sup>18</sup> program. The Surabaya project has been put in the blue book. A second study by SNCF was completed in 2009. It then recommended implementing first the downtown part of the network with the airport link with a revised price of \$700 million. As designed, the project is unlikely to be able to find financing.

57. A similar study for Bandung indicated that the investment cost would be approximately \$550 million, not including rolling stock. A follow-up assessment is under way to determine the potential viability of implanting the project in phases—the first of which would be targeted at the \$140 million level. However, significant relocation and resettlement issues are likely to delay implementation, as there is strong resistance to the project plan by the 12,000-strong city transport lobby.

## 5. Air Transport

### *a. Legal and Institutional Framework*

58. Establishment of aviation policy and administration is the responsibility of the Director General of Civil Aviation in MOT. The new Aviation Law was issued in 2009. The required Air Master Plan, which will guide implementation of the law, has not yet been prepared. As with the other modal laws, the intent of the Aviation law is to open provision of infrastructure services more fully to the competitive private sector. However, at the moment, the air services infrastructure is under the direct authority of the Angkasa Pura I and II (Persero).

### *b. Infrastructure*

59. There are 186 airports in Indonesia, 24 of which are registered as international airports. In a few international airports (besides the ones with the highest traffic), capacity improvements and modernization are required. This might be hampered by the fact that airport charges are low and may not be able to cover new investment costs. Also, in many domestic airports, air navigation equipment is in clear need of updating.

<sup>17</sup> Société Nationale des Chemins de fer Français in French.

<sup>18</sup> RPE stands for “Reserve Pays Emergents,” is DG Trésor’s Fund which provides concessionary (tied) loans to developing countries.

### *c. Fleet and Operations*

60. Since 2000, civil aviation in Indonesia, especially domestic travel, has exploded. With liberalization and an open-sky policy dating back to 1999, the number of air carriers has been mushrooming (though it varies by year with new entrants and bankruptcies). In 2008, there were 11 commercial carriers with regular scheduled operation: Air Asia, Garuda, Lion Air, and Merpati all had domestic and international services; and Batavia, Kartika, Mandala, Riau, Srivijaya, Triguna, and Wings concentrated almost exclusively on domestic services.

61. In 2008, there were 938,000 total aircraft movements in Indonesia: 795,000 domestic and 143,000 international. This translated into 80 million passengers in 2008—67 million domestic and 13 million international—with domestic passenger traffic growing at 18% per year, international at 5%, and overall at 15% since 2000. Four major airports (Bali, Jakarta, Medan, and Surabaya) capture almost all international traffic and more than half of the domestic traffic.

62. Total baggage and air cargo traffic, however, was still very low at only 1.7 mt in 2008, but has been growing at 8.5 % per year. The low air cargo traffic recorded is not a constraint but a lost opportunity. The cause may not be clearly established, yet the low development of the logistics industry might be the principal cause.

63. Air safety and security remain issues that are somewhat limiting the smooth expansion of commercial civil aviation in Indonesia. In 2008, there were 56 recorded incidents and accidents: 8 due to breakdown in flight separation, 13 due to breakdown in coordination, 32 incidents, and 3 accidents. There is no definitive improvement in the total number of incidents and accidents, which is disturbing, though with the dramatic increase in air traffic, risk per travel kilometer has significantly decreased. Nevertheless, air safety remains a serious concern. In 2007, the European Union issued a blanket ban for all Indonesian airlines. This ban was lifted in 2009 for Garuda and Mandala (plus two charter companies). The International Civil Aviation Organization has issued no less than 600 safety recommendations to Indonesia. In 2009, with three accidents, there were a total of 16 fatalities.

## **6. Intermodal Transport**

64. Intermodal transport in Indonesia, while superficially of great value and interest, is in reality more a concept than a reality. While all ports are connected to roads, in most cases, the roads are congested and do not lead to a high-capacity network of expressways that, in turn, can move containers and other goods quickly to their destinations. The exception is at Tanjung Priok where, with Japanese support, DGH is now constructing a high-capacity freeway connector to the port.

65. Other than the private bulk terminals for coal, oil, cement, or fertilizer, ports are not served by PTKA. PTKA has three dry port container terminals—the most successful being Gedebage, 10 km east of Bandung. In 2003, an international consultant conducted a detailed linked cost comparison between shipments from factories to the dry port and then directly to the container terminal in Tanjung Priok port. The conclusion was that the cost for movements through the dry port was significantly higher than the comparative cost per teu directly by road (Rp1.7 million versus Rp1.4 million) and the time for the transfer was longer (over 10 hours versus 6 hours by road). As a consequence, the volume of movements through the dry port is not significant, and the conclusion is that intermodal container traffic for shorter distances in Java cannot compete with direct road transport.

66. In the PTKA strategic business plan (2009), traffic in containers is estimated to increase from 554,000 tons (in 2009) to 1,304,000 tons by 2013. With competition from direct trucking and interisland and intransland shipping, this estimate is likely optimistic.

**Table A1.1** Action Plan on Infrastructure Development (RPJMN 2010–2014) (Rp billion)

| Projects   | Cost          | Projects  | Cost           |
|--|---------------|---|----------------|
| <b>Maritime</b>  |               | <b>Road</b>   |                |
| Procurement of ferries (18)                              | 51            | Road maintenance (171,695 km)                               | 47,546         |
| Navigation equipment (93 lighthouses)                    | 1,128         | Road capacity improvement (19,370 km)                       | 67,021         |
| Dredging (61.7 million m <sup>3</sup> )                  | 880           | Ring roads and bypass (37 km)                               | 535            |
| Development of 275 small ports                           | 3,500         | Strategic roads (1,378 km)                                  | 7,404          |
| Procurement of passenger on pioneer routes (34)          | 2,794         | Construction of toll roads (120 km)                         | 8,815          |
| Pioneer routes subsidies (76)                            | 2,135         | Bridge maintenance (602 km)                                 | 5,426          |
| Monitoring systems in Malacca, Sunda, and Lombok straits | 1,025         | Construction of new bridges (16 km)                         | 4,001          |
| Procurement of coast guard vessels (15)                  | 120           | Flyover/underpass (11 km)                                   | 2,437          |
| River ferry facilities (20)                              | 1,265         | Land transport safety facility (5)                          | 21             |
| Subsidies (510 routes)                                   | 776           | Access road to Belawan, Tanjung Priok, and Surabaya airport | 3,300          |
| <b>Subtotal</b>  | <b>13,674</b> | <b>Subtotal</b>   | <b>146,506</b> |
| <b>Aviation</b>  |               | <b>Railways</b>   |                |
| Construction of Bandara Kualanamu Airport                | 2,000         | New lines and double tracking (954 km)                      | 9,752          |
| Upgrading of airports and airstrips (205)                | 6,976         | Procurement of rolling stock (locomotives 186)              | 881            |
| Upgrading of border area airports (49)                   | 1,066         | Electrification systems (71 for 289 km)                     | 2,088          |
| Civil aviation safety equipment (1,835)                  | 2,542         | Railway safety facilities (72)                              | 392            |
| Flight information system (3)                            | 443           | <b>Subtotal</b>   | <b>13,113</b>  |
| Building of 15 terminals/year                            | 610           | <b>Urban Transport</b>                                      |                |
| Pilot flight services (510 routes)                       | 892           | Master plans and urban traffic information system (14)      | 283            |
| <b>Subtotal</b>  | <b>14,529</b> | Bus rapid transit (5)                                       | 379            |
| <b>All Modes</b>   |               | Environment-friendly systems (5)                            | 138            |
| Improved coordination on transport issues                | 19            | Purchase of buses (577)                                     | 285            |
| <b>Subtotal</b>  | <b>19</b>     | <b>Subtotal</b>   | <b>1,085</b>   |
| <b>Total</b>   |               |   | <b>188,926</b> |

km = kilometer, m<sup>3</sup> = cubic meter, RPJMN = National Medium-Term Development Plan.

Source: RPJMN 2010–2014 Matrix.

**Table A1.2** Transport Infrastructure Requirements, 2010–2014

|  | Rp trillion |
|--|-------------|
| Infrastructure requirements 2010–2014    | 689.00      |
| MPW max budget under medium scenario     | 344.89      |
| PPP Water                                | 6.28        |
| PPP Toll Roads                           | 167.09      |
| PPP Total                                | 173.37      |
| Regional Governments                     | 170.74      |
| (a) DGH max budget under medium scenario | 210.78      |
| DGH annual budget under (a)              | 42.00       |
| (b) DGH max budget under low scenario    | 154.30      |
| DGH annual budget under (b)              | 31.00       |
| DGH annual draft budget 2010             | 16.20       |

DGH = Directorate General of Highways, MPW = Ministry of Public Works, PPP = public–private partnership.

Source: DGH National Road Assessment 2005–2009 and Strategic Plan 2010–2014, p. 43.

# Appendix 2

## Sector Results and Problem Tree

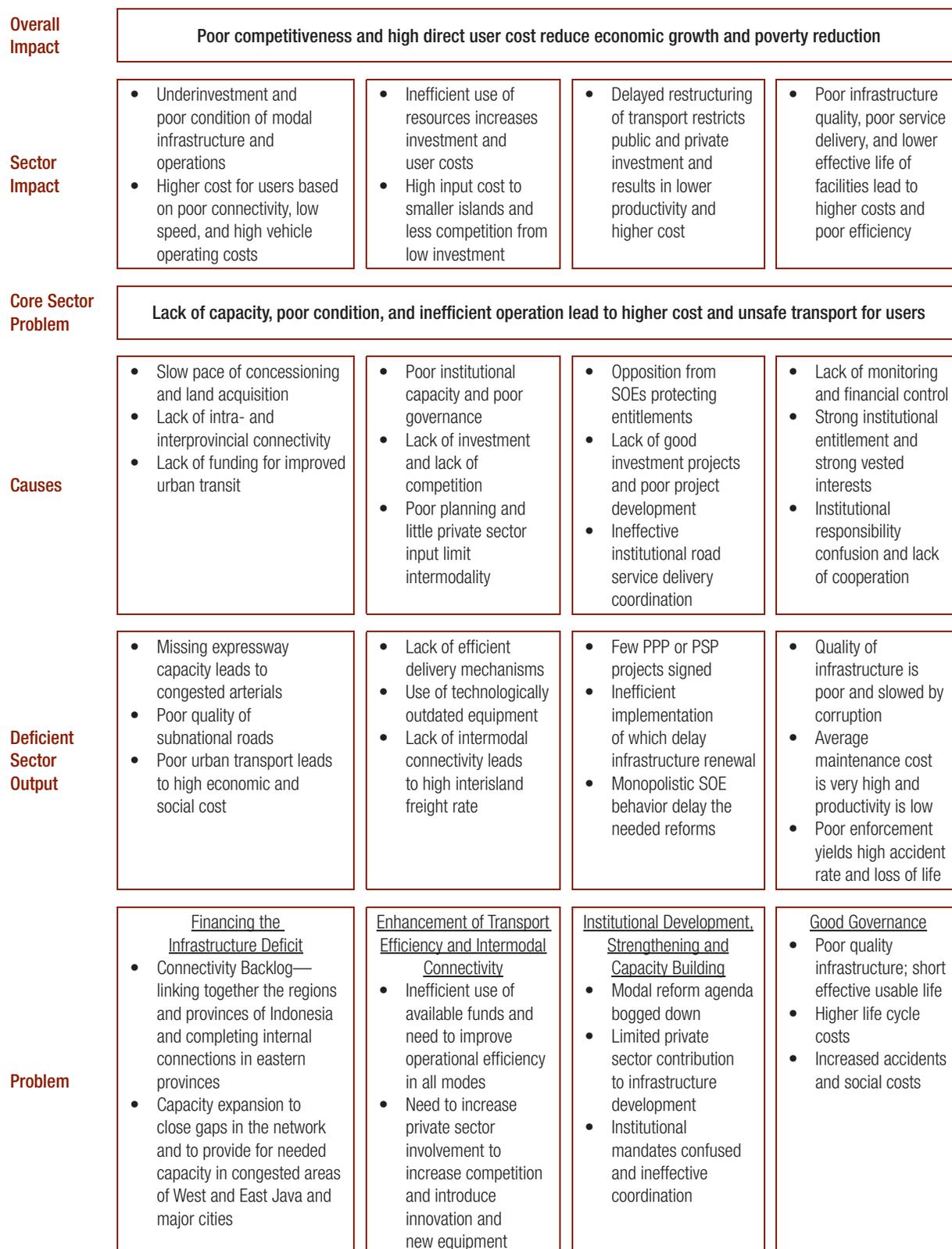
Table A2.1 Links between Transport Sector Issues, Government Plans, Gaps, and Expected Results

| Core Sector Issues  | Government Plans   | Policy, Institutional, Investment, and Resource Gap Needs   | Expected Results  |
|---|--|---|---|
| Financing the infrastructure deficit                            | <ul style="list-style-type: none"> <li>Expansion of budget for roads</li> <li>Some expansion of budget for other modes</li> <li>Commitment to increased private sector input</li> </ul>  | <ul style="list-style-type: none"> <li>Large-scale private investment not likely to materialize</li> <li>Institutional barriers remain</li> <li>Reform agenda still incomplete</li> <li>Implementation capacity lags even current funding levels</li> </ul>   | <ul style="list-style-type: none"> <li>Enabling environment remains work in progress</li> <li>Overall increase in invested capacity expansion lags demand</li> <li>Capacity constraint in key areas to constrain economic growth</li> </ul>   |
| Enhancement of transport efficiency and connectivity            | <ul style="list-style-type: none"> <li>Increased use of private sector contracting</li> <li>Increased competition in contracting for public service operations</li> <li>Commitment to key corridor development for improved connectivity</li> <li>Continued commitment to eastern Indonesia for improved linkage to key markets and suppliers</li> </ul> | <ul style="list-style-type: none"> <li>Policy on multiyear contracting still limits private sector input</li> <li>Lack of contractor capacity and capability to need time to overcome</li> <li>Expanded infrastructure in eastern Indonesia beyond capability of local economy to support. Subsidies to continue</li> <li>Lack of competition limits improvements to efficiency</li> </ul>  | <ul style="list-style-type: none"> <li>Slow pace of contracting out to limit efficiency gains</li> <li>Slow change to monopolistic operations of key infrastructure to keep logistics cost high</li> <li>Commitment to current fuel subsidy arrangements to limit rationalization of funding commitments and longer-term contracting</li> <li>Gradual improvement in performance-based budgets to lead to greater accountability</li> </ul> |
| Institutional development, strengthening, and capacity building | <ul style="list-style-type: none"> <li>Removal of SOE monopolies built into new modal legislation</li> <li>Some evidence in modal administrations of commitment to internal institutional reform</li> <li>Gradual development of action plans to effect mandated changes</li> </ul>  | <ul style="list-style-type: none"> <li>Strong power of existing SOEs to resist change. Need for technical assistance to show how change can be beneficial</li> <li>Continued need for investment support to attract private sector</li> <li>Completion of policy agenda with extension of change to regulations and rules remains incomplete</li> <li>Lack of trained and competent private sector contractor capacity</li> </ul> | <ul style="list-style-type: none"> <li>Slow pace of institutional change</li> <li>Lack of competition to limit achievement of efficiency objectives</li> <li>Improvements to transport cost and logistics slow to achieve</li> </ul>  |
| Good governance   | <ul style="list-style-type: none"> <li>Use of performance-based budgeting to help increase accountability</li> <li>Increased use of performance-based contracts to improve quality of delivery</li> <li>Reduced monopolistic behavior to limit opportunities for rent seeking</li> <li>Increased use of contracting to reduce budget erosion</li> </ul>  | <ul style="list-style-type: none"> <li>Strongly entrenched entitlement commitment to resist change</li> <li>Long-standing channels for low enforcement standards to slow improvements</li> <li>Lack of high-level commitment to better governance cancels effectiveness of low-level improvements</li> </ul>  | <ul style="list-style-type: none"> <li>Reform agenda remains incomplete because of strong resistance from vested interests</li> <li>Erosion of public trust in effective operations</li> <li>Lack of progress on sector reform limits cost savings and efficiency improvements</li> <li>Continued misallocation of scarce public resources</li> </ul>   |

SOE = state-owned enterprise.

Source: ADB consultant.

Figure A2.1 Problem Tree Analysis of the Transport Sector in Indonesia



PPP = public-private partnership, PSP = private sector participation, SOE = state-owned enterprise.

Source: ADB consultant.

## **Indonesia: Transport Sector Assessment, Strategy, and Road Map**

The Asian Development Bank (ADB) is preparing sector assessments, strategies, and road maps (ASRs) to help align future ADB support with the needs and strategies of developing member countries and other development partners. ASRs are working documents that help inform the development of country partnership strategies. This transport sector ASR highlights development issues, needs, and strategic assistance priorities of the Government of Indonesia and ADB, with a focus on roads and interisland and intrainland connectivity. It highlights sector performance, priority development constraints, the government's strategy and plans, other development partner support, lessons learned from past ADB support, and possible future ADB assistance including knowledge support and investments. The product serves as a basis for further dialogue on how ADB and the government can work together to tackle the challenges of managing transport sector development in Indonesia in the coming years.

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ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to two-thirds of the world's poor: 1.8 billion people who live on less than \$2 a day, with 903 million struggling on less than \$1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

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