

## SECTOR ASSESSMENT (SUMMARY): TRANSPORT<sup>1</sup>

### Sector Road Map

#### 1. Sector Performance, Problems, and Opportunities

1. The weak national transport network is a major constraint to economic growth and improved social services in Papua New Guinea (PNG). The Asian Development Bank (ADB) transport program attempts to improve the performance of the country's land, water, and air transport sectors.

2. **Road transport.** The overall length of the road system has not increased since 2000. The government's current policy is to improve rather than expand the existing road network. (Expansion would require funds used for maintenance of existing roads, resulting in a net system loss.) Frequent landslides, floods, and other natural disasters necessitate repeated emergency works.

3. **Water transport.** About 60% of the population resides on the coast, or near rivers and swamps suitable for water navigation. The country's primary port—Lae—suffers from insufficient wharf space, limited storage capacity, and the absence of equipment to handle large containers, while the country's many loss-making ports have excess capacity. State-owned PNG Ports Corporation, which operates Lae, has expanded and improved the port's wharves, and ADB and Independent Public Business Corporation (IPBC) are funding further expansion to include a tidal basin providing sufficient capacity from 2018. Otherwise, however, PNG Ports has made limited investments in port capacity improvements since 2005

4. **Air transport.** The navigation equipment at most of the 21 national airports is old, unreliable, and deteriorating. Rescue and firefighting services are available at only seven airports. Large aircraft introduced in recent years threaten to damage tarmac runway surfaces and endanger safety. Most national airports lose money on their operations. These losses combined with a lack of national government funding have precluded air transport investments, although assistance from the Australian Agency for International Development (AusAID) and ADB's Civil Aviation Development Investment Program is available.<sup>2</sup>

#### 2. Government's Sector Strategy

5. The PNG Development Strategic Plan (DSP) 2010–2030<sup>3</sup> proposes specific, ambitious transport infrastructure investments. These include increasing the share of national roads in good condition from 32% in 2010 to 100% in 2030, while tripling their length, in the next 20 years. The plan envisages creating a national road network. The plan anticipates even greater increases in shipping and air transport traffic. Government funds and construction sector capacity sufficient to support these investments will likely accrue later, once the PNG liquefied natural gas (LNG) project and other developments boost government revenues. There are

---

<sup>1</sup> The full version of the transport sector assessment is one of the supplementary documents listed in Appendix 2 of the Papua New Guinea country partnership strategy, 2011–2015. Other infrastructure sector background documents provided as supplementary documents include *Institution Building in Infrastructure Sector* and *Civil Works Capacity Constraints*.

<sup>2</sup> ADB. 2009. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility to Papua New Guinea to the Civil Aviation Development Investment Program*. Manila.

<sup>3</sup> Government of PNG. 2010. PNG Development Strategic Plan 2010–2030. Port Moresby.

likely, however, to be capacity constraints during 2011 to 2015, the duration of the next ADB Country Partnership Strategy.

6. The Department of Transport is responsible for transport planning and coordination, while other agencies handle maintenance and civil works, operations, safety, registration, and other line functions. The Department of Transport is preparing a national transport strategy, 2011–2030 and a medium-term transport plan, 2011–2015 (a 5-year capital improvement program). These are likely to emphasize maintenance and rehabilitation above system expansion, just as the previous national transport development plan, 2006–2010 did. These will also focus on institutional arrangements.

### **3. ADB Sector Experience and Assistance Program**

7. ADB is the largest lender and the second largest source of foreign assistance in Papua New Guinea's transport sector. While ADB typically concentrates on one transport subsector in each country, it is active in land, water, and air transport in PNG. ADB's land transport programs concentrate in the Highlands Region. ADB loan and TA projects have supported asset maintenance and upgrading, institutional strengthening, and capacity building.

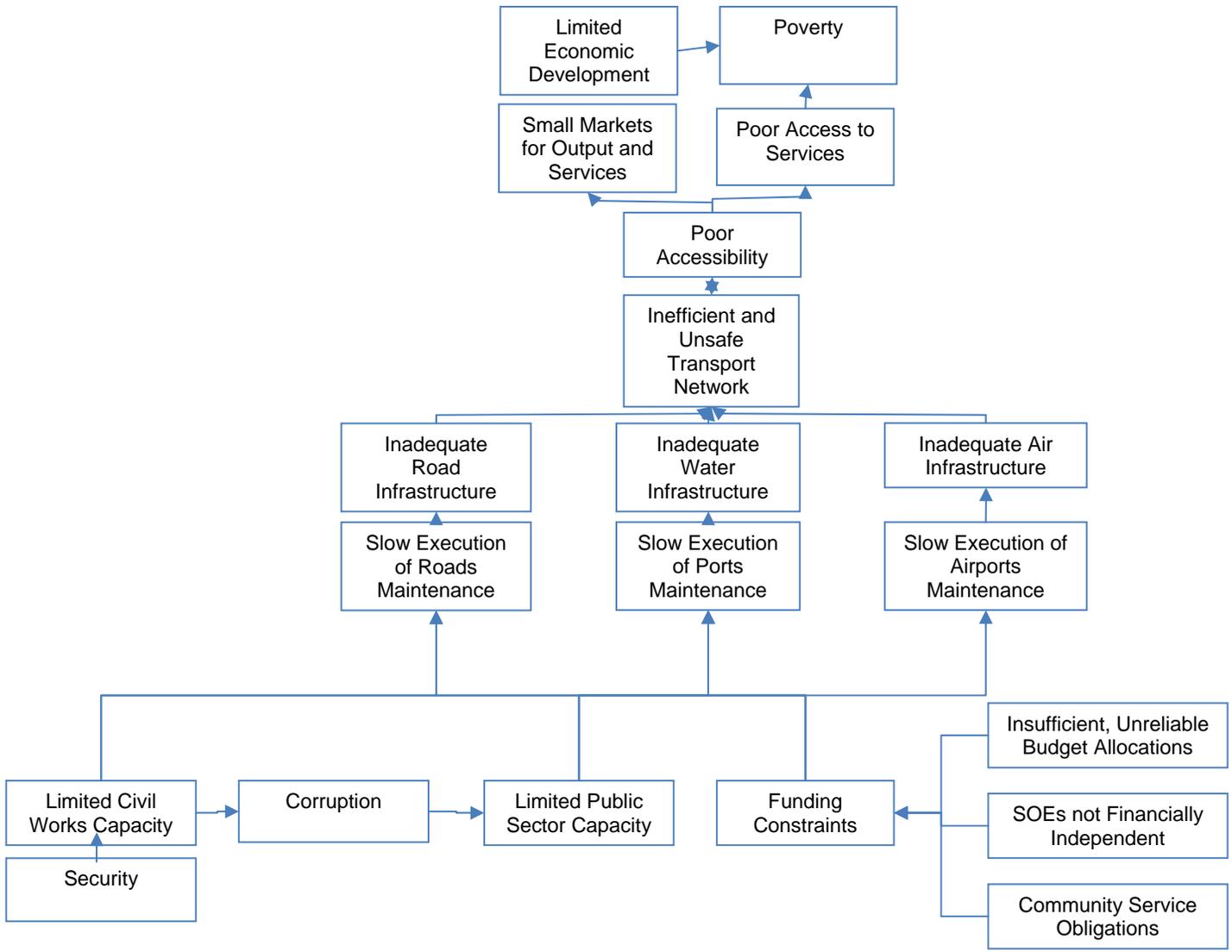
8. The AusAID Transport Sector Support Program (TSSP) umbrella transport program provides about A\$50 million (\$42 million) per year to build capacity, support asset maintenance, and improve governance. It funds large land, water, and air transport projects in many provinces, including highways in the Highlands Region. AusAID also manages capacity building assistance to the transport sector through the Strongim Gavman Program. The World Bank and the Japan International Cooperation Agency fund road and bridge programs in many provinces. The development coordination matrix lists the AusAID and other foreign assistance projects active in the country.

9. The greatest concern arising from the performance of ADB's transport loans in PNG has been the frequent delays and cost overruns during project implementation. Road infrastructure projects have a poor history of falling short of output targets, even after extensions, and costing much more than anticipated. Several causes of the implementation delays and cost overruns have been identified: counterpart funding shortages, capacity shortfalls in government institutions, an extended procurement process, and a constrained private civil works sector, as well as the special land acquisition, compensation, and security challenges that arise in land transport projects in PNG, especially in the Highlands Region.<sup>4</sup>

---

<sup>4</sup> See also *Civil Works Capacity Constraints and Sector-Level Risk Assessment and Risk Management Plan* listed under supplementary documents of the PNG country partnership strategy 2011–2015 (Appendix 2).

### Problem Tree for the Transport Sector



SOE = State-Owned Enterprises  
Source: Asian Development Bank

**Table 1: Sector Results Framework (Transport, 2011–2015)—Land Transport**

Country Sector Outcome		Country Sector Outputs		ADB Sector Operations	
Outcomes with ADB Contributions	Indicators with Targets and Baselines	Outputs with ADB Contributions	Indicators with Incremental Targets	Planned and Ongoing ADB Interventions	Main Outputs Expected from ADB Contributions
More efficient, safer movement of people and goods on roads in the Highlands Region	<p>Number of people (women, men, children) with 25% reduced travel time from their communities to nearest school, aid post, health center, maternal health ward, or market (from 0 in 2011 to 100,000 in 2015); and of which people from disadvantaged communities (from 0 in 2011 to 40,000 in 2015)</p> <p>Percentage of national roads in good condition (from 20 in 2011 to 30 in 2015)</p> <p>Road accident incidence in Highlands (baseline indicator to be determined)</p>	Efficient and functioning road system in the Highlands Region	<p>Kilometers of core network roads upgraded or rehabilitated in the Highlands Region (from 1,000 in 2011 to 1,800 in 2015)</p> <p>Kilometers of highways under NRA's maintenance responsibilities (from 800 in 2011 to 2,500 in 2015)</p> <p>Expansion of civil works sector: (increase of 5,000 graduates from vocational or technical schools by 2015; national contractors increase from 15 in 2010 to 24 in 2015; international contractors increase from 5 in 2010 to 8 in 2015)</p>	<p><b>Planned key activity areas</b></p> <p>Regulating and Improving Road Transport TA (\$750,000)</p> <p>Small and medium civil works capacity improvements TA (\$2 million)</p> <p><b>Pipeline projects with estimated amounts</b></p> <p>Rural Access Expansion Program (\$90 million)</p> <p><b>Ongoing projects with approved amounts</b></p> <p>National roads, road maintenance, and road transport policies and reforms:</p> <p>(i) road maintenance and upgrading (\$53 million)</p> <p>(ii) HRRIP (\$400 million)</p> <p>(iii) extending socioeconomic benefits (\$2 million)</p> <p>(iv) improving road user charges and increasing private sector participation TA (\$0.8 million)</p>	<p><b>Planned key activity areas</b></p> <p>Skills training</p> <p>Draft legislation and enabling environment favoring small and medium-sized enterprises.</p> <p><b>Pipeline projects</b></p> <p>Bridges replaced and/or upgraded</p> <p><b>Ongoing projects</b></p> <p>(i and ii) Improvements to 1,600 km of core roads in the Highlands Region</p> <p>(ii and iv) Maintenance contracts on 1,000 km of roads</p> <p>(ii) Baseline studies conducted in 2011, 2013, and 2015</p> <p>(iii) (a) 8 rural infrastructure facilities rehabilitated, (b) 32 community skills development workshops, (c) 32 health awareness training programs, and (d) 320 people demonstrate HIV/AIDS prevention methods</p> <p>(iv) (a) 80%–100% increase in road user charges, and (b) increase in number of foreign and national contractors awarded road projects</p>

HRRIP = Highlands Region Road Improvement Investment Program, km = kilometer, NRA = National Road Authority, TA = technical assistance.

**Table 2: Sector Results Framework (Transport, 2011–2015)—Water Transport**

Country Sector Outcome		Country Sector Outputs		ADB Sector Operations	
Outcomes with ADB Contributions	Indicators with Targets and Baselines	Outputs with ADB Contributions	Indicators with Incremental Targets	Planned and Ongoing ADB Interventions	Main Outputs Expected from ADB Interventions
More efficient, safer, movement of people and goods through Lae and other ports; and also the movement of goods by water transport among remote communities	<p>Lae Port; Tons of break bulk throughput (from 2.8 million revenue tons in 2011 to 4.0 million revenue. tons in 2015)</p> <p>Lae Port: Cargo handling rate (from 140 tons/hour in 2011 to 210 in 2015); ship calls per year (from 600 in 2011 to 900 in 2015)</p> <p>Maritime safety risks are effectively monitored and controlled; declining rates of accidents and deaths (baseline indicator to be determined); rate of successful rescue operations rise (from 50% in 2011 to 90% in 2015)</p> <p>Number of men, women and children from remote communities with access to operational piers and jetties (from 1.0 million in 2011 to 2.0 million in 2015); reduction in travel costs to nearest aid posts (by 50% from 2011 to 2015)</p>	Efficient, safe, and functioning port system; and water transport system linking remote communities	<p>Redevelopment of Lae, Port Moresby, Wewak, Kimbe, Kieta, Daru, and Vanimo ports (from 1 port in redevelopment in 2011 to 3 in 2015)</p> <p>Improved safety and security (from 100 Papua New Guinea vessels with ISPS certification to 600 in 2015; from 0 international ports IMO compliant to 14 in 2015); increase use of safety equipment in small craft (from 0% to 100% in new craft, and from 50% to 100% for existing craft); 4 NMSA Regional offices</p> <p>Number of remote communities served by new shipping routes (from 30 in 2011 to 200 in 2015)</p> <p>Ratio of trust fund dividends to shipping company subsidies (from &lt;1.0 in 2011 to 1.0 in 2015)</p>	<p><b>Planned key activity areas</b></p> <p>Maritime and Waterway Safety (a.k.a. NavAids II) Project (\$35 million)</p> <p><b>Pipeline projects with estimated amounts</b></p> <p>Sea Transport Development (\$75 million)</p> <p>Community Water Transport Project, Phase II (\$55 million)</p> <p><b>Ongoing projects with approved amounts</b></p> <p>Lae Port Development Project (\$100 million)</p> <p>Community Water Transport Project, Phase I (\$18.5 million)</p>	<p><b>Planned key activity areas</b></p> <p>400 navigation aids upgraded and/or installed</p> <p>70 updated hydrographic charts</p> <p>2 NMSA regional offices</p> <p><b>Pipeline projects</b></p> <p>220-meter wharf expansion in more ports</p> <p>400 demonstrations of HIV/AIDS prevention</p> <p>160 additional piers and jetties</p> <p>8 additional service routes</p> <p>Baseline studies conducted in 2011, 2013, and 2015</p> <p><b>Ongoing projects</b></p> <p>New tidal basin: 280,000 square meters of surface area</p> <p>240-meter wharf expansion,</p> <p>Expansion of container storage area</p> <p>ISPS certification</p> <p>40 piers and jetties,</p> <p>7 river and/or coastal routes serving small communities</p> <p>Regulations and guidelines</p> <p>Training and technical transfer of safety practices, including the installation of safety devices in boats</p>

IMO = International Maritime Organisation, ISPS = International Shipping and Port Facility Security, NMSA = National Maritime Safety Authority.

**Table 3: Sector Results Framework (Transport, 2011–2015)—Air Transport**

Country Sector Outcome		Country Sector Outputs		ADB Sector Operations	
Outcomes with ADB Contributions	Indicators with Targets and Baselines	Outputs with ADB Contributions	Indicators with Incremental Targets	Planned and Ongoing ADB Interventions	Main Outputs Expected from ADB Interventions
More efficient and safer movement of people and goods through the 21 NAC airports	<p>Number of passengers per year (from 100,000 in 2011 to 116,000 in 2015)</p> <p>Tons shipped from airports in a year (from 12,000 in 2011 to 13,000 in 2015)</p> <p>Monthly average of NAC airport incidents (from 4 in 2011 to 2 in 2015)</p> <p>Percentage coverage of operating costs from revenues (from 50% in 2011 to 62% in 2015)</p>	Efficient and functioning air transport system	<p>Number of NAC airports with long-term, performance-based maintenance contracts (from 0 in 2011 to 5 in 2015)</p> <p>Number of NAC airports able to accommodate larger jet aircrafts (from 2 in 2011 to 5 in 2015)</p> <p>Number of ICAO certified national NAC airports (from 2 in 2011 to 16 in 2015)</p> <p>Airport fees, terminal facility charges, and air navigation fees revised and implemented (baseline indicator to be determined)</p>	<p><b>Ongoing projects with approved amounts</b></p> <p>Civil Aviation Development Investment Program (\$480 million)</p>	<p><b>Ongoing projects</b></p> <p>8 airports with runways and aprons ICAO certified,</p> <p>8 airports with safety and security meeting ICAO standards</p> <p>4 airports with runways, taxiways, and aprons meeting fleet requirements</p> <p>Long-term, performance-based maintenance contracts at 10–12 airports</p> <p>Mt. Hagen capable of supporting international traffic</p> <p>2 rescue and fire fighting contracts signed</p> <p>Reduced ICAO audit findings of safety and security noncompliance</p> <p>Communications, navigation, and surveillance equipment at 2 airports certified by ICAO</p> <p>Recommendations and training provided on organization and financial management</p>

ICAO = International Civil Aviation Organization, NAC = National Airports Corporation.

**Table 4: Sector Results Framework (Transport, 2011–2015)—Intermodal Transport**

Country Sector Outcome		Country Sector Outputs		ADB Sector Operations	
Outcomes with ADB Contributions	Indicators with Targets and Baselines	Outputs with ADB Contributions	Indicators with Incremental Targets	Planned and Ongoing ADB Interventions	Main Outputs Expected from ADB Interventions
More efficient, safer, integrated movement of people and goods through all modes of transport.	Greater understanding of need for intermodal links and coordination among agencies	Improved connectivity between road, water, and air transport modes	Interdepartmental memorandum of understanding giving priority to intermodal links by 2015	<p><b>Planned key activity areas</b></p> <p>Intermodal Transport System Planning technical assistance (\$2 million)</p>	<p><b>Planned key activity areas</b></p> <p>Training workshops</p> <p>Increased capacity to plan and implement intermodal improvements</p>