

## SECTOR ASSESSMENT (SUMMARY): TRANSPORT

### Sector Road Map

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

1. Inadequate provision of transport infrastructure and services is a major constraint on inclusive economic growth in Papua New Guinea (PNG). The country's 600 islands and altitude ranging from sea level to 4,500 meters adds to the challenge of providing access, especially in rural areas.<sup>1</sup> Geography and poor transport infrastructure networks isolate large segments of the population from social services, regional markets, and income-earning opportunities. International comparisons show the coverage and quality of PNG's transport networks lag far behind most other countries in Asia and the Pacific. Climate change represents a risk to communities and to the sustainability of transport infrastructure.

2. A major constraint facing the sector is unequal distribution of infrastructure, which is a factor in the unequal access to economic opportunities. It is not possible to travel by land between most provinces and to ports. Coastal shipping services and aviation attempt to overcome these network gaps, however outside of major regional centers many of these services are not cost-effective. Against this background, studies continue to demonstrate the strong link between increasing access to transport infrastructure and levels of poverty reduction and more inclusive economic growth.<sup>2</sup> Living standards and poverty rates improve as transport networks improve.<sup>3</sup>

3. **Road transport.** Addressing the poor and deteriorating condition of transport infrastructure remains one of PNG's most pressing development challenges. Rural accessibility is low, with just 68% of the rural population living within 2 kilometers (km) of access to an all-season road. PNG contains approximately 22,000 km of roads.<sup>4</sup> The national road network comprises 8,738 km, only 40% of which is sealed. The focus of most road planning is the 4,256 km of national priority roads (i.e., half of all national roads, both sealed and unsealed) in 16 separate alignments (footnote 4). More than 75% of national, provincial, and district roads become impassible at some point during the year.<sup>5</sup> It is notable, however, that the condition of the 4,256 km of national priority roads has improved in recent years. While 33% of the national priority road network was in good condition in 2007, 46% had achieved that status by 2011 (footnote 4). Estimates indicate that crashes remain very high by Pacific standards.<sup>6</sup>

4. The National Transport Strategy considers maintenance of the national priority roads the transport sector's greatest priority. The Department of Works is responsible for major road improvements and rehabilitation while the National Roads Authority is responsible for maintenance, with cooperation from the Department of Works.

5. **Water transport.** Approximately 60% of the population resides on 6,500 km of coastline and waterways, often without access to roads. Water transport predominates in these areas,

<sup>1</sup> Asian Development Bank (ADB). 2012. *PNG Critical Development Constraints Report*. Manila. p.xi, p.91.

<sup>2</sup> See ADB. 2014. *Poverty Assessment*, under supplementary documents of the PNG country partnership strategy 2016–2020.

<sup>3</sup> de Albuquerque, K. and E. D'Sa. 1986. Spatial Inequalities in PNG: a district level analysis. *Economics Review*, Vol.14. pp. 23–9.

<sup>4</sup> Government of PNG, Department of Works. 2012. *PNG Road Statistics database*. Port Moresby.

<sup>5</sup> Footnote 1, p. xi.

<sup>6</sup> Government of PNG, National Roads Safety Council. 2010. *Papua New Guinea Road Safety Review: Discussion Paper*. Port Moresby. pp.11–20.

especially on smaller islands. The state-owned PNG Ports Corporation (PNGPCL) operates 16 ports, while private corporations operate at least five more. Lae port handles nearly half the country's maritime freight. Port Moresby and Kimbe are the next largest and operate on a cost-recovery basis; the remaining 13 PNGPCL ports incur losses.<sup>7</sup>

6. The PNGPCL's domestic ports have generally low cargo processing costs and the national shipping market is competitive.<sup>8</sup> However, PNG's international shipping is among the most expensive in the Pacific region, with low levels of competition. It takes 23 days to export goods from PNG (the same as the regional average).<sup>9</sup> The National Maritime Safety Authority (NMSA) provides navigation and safety services, and is the operator of navigational aids. Deaths due to the sinking of overloaded ferries are not uncommon, and more than 100 people are estimated to die in small craft every year.<sup>10</sup>

7. **Air transport.** In addition to the 22 international and regional airports owned and managed by the National Airports Corporation (NAC), PNG has hundreds of rural airstrips. While recent Asian Development Bank (ADB)-financed investments have helped to lift standards, the overall condition of the NAC's airports has deteriorated over time and they are beginning to pose threats to safety. PNG Air Services (PNGASL) provides navigation services. International air traffic serving the country's international gateway (Port Moresby's Jackson's International Airport) is very expensive with unit costs (per passenger, per nautical mile) on flights to Australia the most expensive in the Pacific. Air Niugini's unit cost on Asian routes is more than 2.5 times that of inter-Asian flights.

## 2. Government's Sector Strategy

8. **Planning framework.** The PNG Development Strategic Plan, 2010–2030 outlines an ambitious array of transport infrastructure investments, including increasing the share of national roads in good condition from 32% in 2010 to 100% in 2030, and tripling its length. The plan also includes a similarly large expansion in shipping and air transport capacity.<sup>11</sup> The National Transport Strategy released in 2013 provides a more prioritized list of transport investments, emphasizing the importance of asset maintenance and restoring PNG's existing but damaged road network. It also seeks to clarify institutional roles, increase capacity, and outline cost-recovery mechanisms.<sup>12</sup>

9. **Funding.** National government funding for transport has grown rapidly over recent years. PNG's 2014 national budget for transport was approximately \$1 billion, with additional funding focused primarily on land transport and to a lesser extent civil aviation and maritime transport. The total 2014 transport budget represents nearly triple the funds allocated to the sector in 2011. Roads represent 82% of this investment while maritime and civil aviation investments each represent approximately 9% of the total.<sup>13</sup>

10. While financing was previously an important factor constraining transport infrastructure improvements, implementation capacity has now become the major challenge for budget

<sup>7</sup> Government of PNG, Department of Transport. 2013. *National Transport Strategy*, Vol 3. Port Moresby. pp. 246.

<sup>8</sup> ADB. 2012. *Finding Balance: Benchmarking the Performance of State-Owned Enterprises in Papua New Guinea*. Manila; and Canada Pacific Consultancy Services (CPCS). 2011. *Review of Domestic Shipping Rates*. Ottawa.

<sup>9</sup> World Bank Group. 2014. *Doing Business 2014: Regional Asia Pacific Islands*. Washington DC.

<sup>10</sup> CPCS Transcom. 2011. Cost-Benefit Analysis of Proposed Small Craft Safety Act. *Working Paper 44*. Port Moresby. p. 4.

<sup>11</sup> Government of PNG. 2010. *PNG Development Strategic Plan 2010–2030*. Port Moresby.

<sup>12</sup> Government of PNG, Department of Transport. 2013. *National Transport Strategy*, Vol 1. Port Moresby. p. 40.

<sup>13</sup> Government of PNG. 2014. *National Budget, Volumes 1 and 2*. 2014. Port Moresby (and earlier years).

execution and enhanced infrastructure quality.<sup>14</sup> Core systems and processes are in place but not always followed. The lack of alignment between transport agency budget submission and the cabinet-approved budget results in the public sector trying to hurriedly implement unfamiliar projects. Tendering delays, cost escalation, private sector construction capacity, training, public sector capacity, law and order, and geography pose a threat to a strong and rational implementation policy.

11. PNG's transport sector is making slow progress in introducing cost-recovery models. While the NMSA has good cost recovery, the National Roads Authority's portion of the fuel taxes cover only about one-sixth of its estimated annual maintenance requirements.<sup>15</sup> The NAC and PNGASL charge transport operators for their services, but the sums are inadequate to cover operations or capital improvements. Meanwhile, a lack of community service obligations require the PNGPCL and other state-owned enterprises to cross-subsidize loss-making activities from the proceeds of remunerative assets, damaging their financial health. A higher level of redistribution of central government funds to lower tiers of government promises some progress. However, provincial road management capacity is insufficient.<sup>16</sup> Partly for this reason, the National Transport Strategy seeks to give the national Department of Works responsibility for managing lower-level government roads.

### 3. ADB Sector Experience and Assistance Program

12. ADB has supported land, aviation, and maritime connectivity, and disbursed \$133 million in assistance to PNG's transport sector in 2013, a significant increase over the \$10 million–\$20 million per year during 2006–2010. This establishes ADB as the lead development partner in the sector. ADB currently finances the improvement of roads and bridges, institutional development of land transport agencies, the expansion of the country's largest port, rehabilitation of navigational aids, institutional support to the NMSA, safety improvements at NAC-owned airports, and technical assistance to the PNGASL. ADB projects have supported asset maintenance and upgrading, institutional strengthening, and capacity building.

13. Part of ADB's success in achieving results and lifting disbursement rates within its transport sector operations derives from its increasing use of multitranche financing facilities (MFFs.) ADB has two transport MFFs in PNG: (i) the Highlands Region Road Improvement Investment Program, improving 1,400 km of roads; and (ii) the Civil Aviation Development Investment Program, improving runway and airport safety and security in 22 national airports.<sup>17</sup> The use of MFFs has allowed ADB to establish long-term sector programs that provide assurance of sustained funding to government and private contractors. These assurances assist all parties in their investment decisions and promote cofinancing from other development partners. The long-term nature of MFFs have also helped to encourage executing agencies to improve project planning and preparation and to develop staff capacity.

<sup>14</sup> ADB. 2013. *Pacific Economic Monitor: Budget Analysis*. Manila (December).

<sup>15</sup> Government of PNG, Department of Works. 2014. *Department of Works Brief to Strengthen Project Infrastructure Implementation*. Port Moresby (28 February). p.4; Government of PNG, Transport Sector Coordination Monitoring Implementation Committee (TSMIC). 2013. TSMIC Minutes, 26 September, 2013; and Government of PNG, National Roads Authority. 2013. Road Maintenance Program Updates. (PowerPoint Presentation) 26 September.

<sup>16</sup> ADB. 2011. *The Importance Of Engaging Provincial Governments in the Design and Implementation of ADB-Funded Road Sub-Projects In Papua New Guinea*. Manila.

<sup>17</sup> ADB. 2008. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility to Papua New Guinea for the Highlands Region Road Improvement Investment Program*. Manila; and ADB. 2009. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility to Papua New Guinea for the Civil Aviation Development Investment Program*. Manila.

14. **Development partners.** The Government of Australia provides assistance worth \$60 million–\$80 million per year to build capacity, support asset maintenance, and improve governance in the nation's road, water, and air transport subsectors. Japanese International Cooperation Agency (JICA) funds road projects, and advises the NMSA. The World Bank funds trunk and feeder road projects in Central Province. JICA and the World Bank each fund transport programs of about \$10 million per year. The development coordination matrix lists foreign assistance projects active in the country.<sup>18</sup>

15. All donors active in the transport sector, plus the European Union, have stated an interest in cofinancing road projects. In the past, ADB has taken advantage of funds provided by the Organization of the Oil Producing Countries (OPEC) Fund for International Development (OFID) for the financing of the original Lae Port Project<sup>19</sup> (3.9% of the original total project investment, 2.1% under the revised investment package), and the first Community Water Transport Project (14.2%).<sup>20</sup>

16. **Opportunities.** Financing improvements to national roads and priority bridges, particularly the Highlands Highway, would play an important role in facilitating the movement of commodities, especially fresh goods, from remote areas to larger markets. An intermodal approach to financing network improvements across national highways and feeder roads that provide access to ports (including community water transport piers and jetties) and airports will be targeted to improve the flow of commodities, create local economic opportunities, and provide access to services. A focus will be placed on ensuring investments in land transport are resilient to the impacts of climate change and are gender sensitive, in particular with bridge designs allowing for safe pedestrian crossing and access to water by stairways for women and children. The air transport sector includes opportunities to expand support to the PNGASL, particularly to overhaul its aging navigation aids and flight management systems, and improve the nation's air transport safety, either under the existing Civil Aviation Development Investment Program MFF, or as a separate loan facility.

17. ADB will also pursue opportunities to undertake knowledge management activities in the transport sector. Trade and transport facilitation technical assistance is needed to address customs, trade procedures, and protectionism and promote competitiveness in international transport. ADB's transport program should explore links with public financial management assistance to improve budgeting systems and implementation. ADB may support the education and training strategy that the Transport Sector Capacity Task Force will produce in 2015. More physical infrastructure and capacity development can support broader access to growth centers and create greater economic opportunities. Investments in education and training can also support sustainable inclusive growth.

18. Gender mainstreaming will be a core focus of all ADB transport sector investments. Projects will directly benefit women through better opportunities for employment, prioritizing women's involvement in project training programs, and gender-sensitive community awareness programs on road safety. Road and bridge designs will incorporate gender aspects, such as safe walkways and washing bay access near rivers.

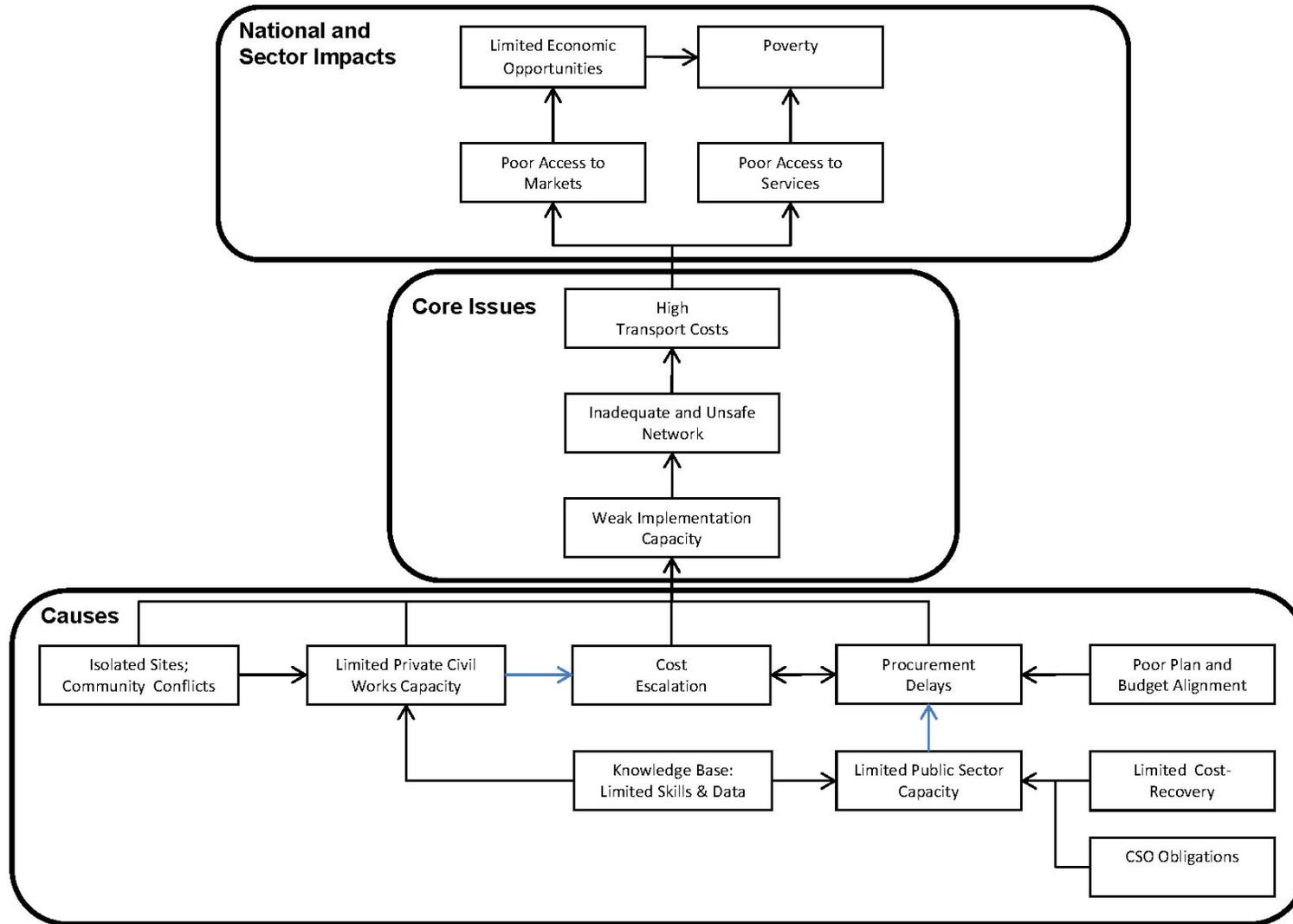
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<sup>18</sup> ADB. 2014. Country and Portfolio Indicators. *Country Partnership Strategy: Papua New Guinea, 2016–2020*. Manila (Appendix 2).

<sup>19</sup> ADB. 2007. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to Papua New Guinea for the Lae Port Tidal Basin Project*. Manila.

<sup>20</sup> ADB. 2004. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to Papua New Guinea for the Community Water Transport Project*. Manila. p.11.

**Figure 1: Problem Tree for Transport Sector**



Source: Asian Development Bank. CSO = Community service obligation.

**SECTOR RESULTS FRAMEWORK (TRANSPORT SECTOR, 2016–2020)**

Country Sector Outcomes		Country Sector Outputs		ADB Sector Operations	
Outcomes with ADB Contributions	Indicators with Targets and Baselines	Outputs with ADB Contribution	Indicators with Incremental Targets	Planned and Ongoing ADB Interventions	Main Outputs Expected from ADB Interventions
More efficient, safer movement of people and goods which reduces regional economic and social inequalities and increases trade competitiveness	<p>1 million rural residents benefiting from a 25% reduction in the cost of travelling from their communities to nearest market by 2020, of which 50% are women and girls (2014 baseline: 50,000)</p> <p>200,000 rural residents have access to and utilize climate-resilient bridge infrastructure by 2020, of which 50% are women and girls (2015 baseline: 0)</p> <p>1 million domestic and international commercial air passengers by 2020 (2014 Baseline: 550,000)</p>	<p>National, provincial, and rural roads and bridges rehabilitated and climate proofed</p> <p>Establishment of effective and sustainable maintenance finance mechanisms for transport infrastructure</p> <p>All regional airports meet international civil aviation safety authority standards</p> <p>Enhanced private sector participation in operation and maintenance of transport assets</p> <p>Strengthened institutional capacity to assess and improve transport and logistics performance</p>	<p>400 km of core road network upgraded or rehabilitated in the Highlands Region by 2020 (2015 baseline: 0)</p> <p>800 km of national highways contracted to private sector for long-term maintenance by 2020 (2015 baseline: 0)</p> <p>15 national bridges rehabilitated and resilient to the impacts of climate change by 2020, of which 100% to include pedestrian amenities for women, and safe river access (2015 baseline: 0)</p> <p>Three airports with International Civil Aviation Organization certification by 2020, one operated through PPP (2015 baseline:1)</p> <p>22 regional airports meet minimum national safety standards by 2020 (2015 baseline: 14)</p> <p>25% decrease in the average container cost to export goods from PNG (2014 baseline: \$1,250 per container)</p>	<p><b>Planned Key Activity Areas</b></p> <p>Transport sector policy, including organizational, budgeting, and maintenance</p> <p>Road rehabilitation and maintenance</p> <p>Bridge rehabilitation</p> <p>Aviation safety</p> <p><b>Pipeline projects with amounts</b></p> <p>Land Transport Investment Program tranche 1 (\$106 million); HRRIP tranche 3 and 4 (\$190 million); CADIP tranche 4 (\$140 million);</p> <p><b>Ongoing projects with amounts</b> HRRIP tranche 2 (\$103 million); CADIP tranche 2 and 3 (\$223 million); Bridge Replacement for Improved Rural Access Project (\$88 million); Maritime Waterways Safety Project (\$42 million)</p>	<p><b>Planned Key Activity Areas</b></p> <p>Certified runways, aprons, and taxiways at all regional airports (45%)</p> <p>PPP operational model at Jackson's International Airport (1%)</p> <p>National highlands highway network rehabilitated (44%)</p> <p>Major national bridges rehabilitated with climate-resilient and gender-sensitive design including access to water by stairways for women and children (11%)</p> <p><b>Ongoing Projects</b></p> <p>27 bridges constructed with climate-sensitive and gender-responsive design</p> <p>150 km of national highway rehabilitated</p> <p>Improvement in navigational shipping aids</p> <p>Safety and security upgrades at six regional airports</p>

ADB = Asian Development Bank, CADIP = Civil Aviation Development Investment Program, HRRIP = Highlands Region Road Improvement Investment Program, km = kilometer, PPP = public-private partnership.  
Source: Asian Development Bank.