

## SUMMARY ASSESSMENT OF DAMAGE AND NEEDS: TRANSPORT SECTOR

### A. Sector Overview<sup>1</sup>

1. Cyclone Pam affected transport infrastructure—particularly roads, airports, wharves and jetties—in Shefa and Tafea provinces, and some outer islands. Ongoing development and adequate maintenance of transport infrastructure are critical to facilitate trade for economic growth, and to restore socioeconomic activities to pre-cyclone levels.

2. **Roads.** Vanuatu has an estimated 1,776 kilometers (km) of roads; 234 km are sealed, 1,142 km are gravel, and 400 km are simple earthen roads. The total road length in Shefa and Tafea provinces is 539 km. There are 158 km of sealed roads (all in Shefa province); 279 km of gravel roads (93 km in Shefa and 186 km in Tafea province); and 102 km of earthen roads (72 km in Shefa and 30 km in Tafea province).

3. Shefa's main highway is the 130-km sealed Efate ring road, which traverses a combination of hilly to flat and low-lying coastal terrain. The ring road is the only road servicing the rural population (29,150 people) with a link to the capital Port Vila (55,525 people). The ring road is critical for transportation of agriculture products to market in Port Vila, and for access to the central hospital and central business district. There are also several tourist sites accessible via the ring road. The government maintains the ring road through the Public Works Department (PWD) of the Ministry of Infrastructure and Public Utilities. Maintenance works are carried out using small and medium-scale contracting and labor-based technology by national contractors managed through the PWD, to strengthen local private sector capacity to undertake works. The participation of the local private sector in road maintenance and construction contracts was recently introduced.<sup>2</sup>

4. **Airports.** There are 29 airports in Vanuatu. Airports Vanuatu operates the three main airports at Port Vila (Bauerfield), Luganville (Pekoa), and Tanna (Whitegrass). The other 26 are domestic airfields regulated by the Civil Aviation Authority of Vanuatu, and operated and maintained by the PWD. The Bauerfield airport is Vanuatu's principal international gateway and handles around 250,000 international passengers per year. The runway can accommodate most commercial aircraft, although some (i.e. Boeing 767, 777 and Airbus A330) have weight restrictions, and others (i.e. Boeing 747 and Airbus A380) require a runway extension. Projections of passenger numbers and accommodation capacity indicates that with improvements, Bauerfield can cope with demand for at least 20 years (until 2025).<sup>3</sup> Airports Vanuatu is contracting consultants to prepare a master plan for Bauerfield improvements. Cyclone Pam had minimal impact on the airports, closing those in affected areas for only 1 day. The World Bank is funding the Vanuatu Aviation Infrastructure Project.

5. **Seaports.** Vanuatu has 64 populated islands, and depends heavily on water transport for movement of cargo and passengers. Poorly maintained wharves and jetties constrain vessels from calling at many destinations in all but ideal weather conditions, thus restricting cargo and passenger movement and increasing waiting times and costs. In some cases, vessels are prevented from reaching rural areas altogether. Inadequate and unsafe facilities also inhibit safe

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<sup>1</sup> 2015. Government of Vanuatu, Pacific Region Infrastructure Facility. *Vanuatu Infrastructure Strategic Investment Plan 2015-2024*. Port Vila. (Available on request).

<sup>2</sup> Concept developed in 2011 and implementation commenced in 2012 and is to expand to outer island-based contractors in 2015. Prior to this concept, the PWD was maintaining the transport infrastructure by force account.

<sup>3</sup> Government of Vanuatu. 2006. *Future Airport Options for Vanuatu*. *Airports Vanuatu Working Paper*. Port Vila.

passenger embarkation and result in loss of goods when ships are unable to berth at the ports.<sup>4</sup>

6. Remote outer-island communities are among the poorest in Vanuatu. They are widely dispersed, with low passenger and cargo demand, which undermines the viability of the private shipping providers that service these locations. To maintain commercial viability, operators are often forced to shift to routes with sufficient passenger and cargo volumes, or to reduce the frequency of ship calls to increase demand. This results in low trade volumes in remote areas. Without strategic, measured attention to outer-island shipping and transport, it is unlikely poverty will decline, and almost certain that out-migration will increase. The Interisland Shipping Support Project, financed by the Government of New Zealand and the Asian Development Bank,<sup>5</sup> seeks to strengthen interisland shipping infrastructure and establish a strategic subsidised shipping scheme to service remote islands in Vanuatu. The government-owned domestic wharves and jetties are maintained by the PWD using small- to medium-sized contracting, outsourced to local contractors.

7. The cruise ship business has grown significantly in recent years and is projected to continue at the recent high traffic levels. In 2009, 93 cruise ships visited Vanuatu; this increased to 252 cruise ship visits in 2013. Port Vila alone accounted for 50 cruise ship visit in 2009, increasing to 126 in 2013. In 2014, 111 cruise ships visited Vanuatu; by the end of July 2015, 50 cruise ships had visited, with a further 34 planned to visit during August–December. In 2016, around 300 cruise ship visits are planned.<sup>6</sup>

## **B. Damage Overview**

8. Transport infrastructure, and particularly roads, was heavily affected by Cyclone Pam. Heavy rainfall and destructive high storm surge caused severe flooding and widespread damage in Tafea and Shefa provinces and some outer islands. A combination of large flood flows and debris accumulation caused washouts and extensive damage to bridges, approach roads, piers, abutments, river banks and service connections. The debris accumulation at bridges, coupled with water pressure from flood waters, disconnected the bridges from the approach roads and washed out many major bridge components (e.g. culverts with headwalls completely collapsed or washed away as a result of the flooding and/or storm surges). The flood waters caused a change in flow patterns for many rivers and streams. The Efate ring road was the most severely affected road. About 19 km of the road suffered extensive pavement damage, with roadside drains blocked or silted with accumulated sediment and debris. Several road sections are open to single lane traffic only, because of wave scouring and a major landslide at Klems hill.

9. There was minimal damage to airports, wharves and jetties in the affected areas and there no reports of damage to vehicles, ships and aircraft at these ports. Transportation was disrupted for week for some 132,000 people in Shefa and Tafea provinces because of fallen trees and damage to the connecting roads. International and domestic flights resumed after a 1-day airport closure. Cruise liners, international cargo ships and domestic vessels and ferries resumed sailing 1 day after the cyclone.

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<sup>4</sup> When ships are unable to berth at the ports, goods must be transferred by small craft to and from ships anchored at sea.

<sup>5</sup> ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan, Administration of Grant, and Technical Assistance Republic of Vanuatu: Interisland Shipping Support Project*. Manila.

<sup>6</sup> <http://www.cruisetimetables.com/cruises-to-vila-vanuatu.html>.

### C. Government's Sector Recovery Strategy

10. The government led a joint rapid post-disaster needs assessment with development partners to estimate the damage and conduct a loss assessment. The assessment report identified short term (0–12 months) and medium–long term (0–4 years) recovery and reconstruction needs for each sector. For transport, including public and private sector shares, recovery and reconstruction needs have been estimated at \$34 million.<sup>7</sup> The sector will require short- to long-term resources to reconstruct improved, more disaster-resilient and climate proof infrastructure by adopting “build back better” principles.

11. **Short-term needs (up to 12 months).** The short-term needs involve immediate and transitional measures to resume delivery of transportation services in the affected areas until the reconstruction and/or replacement of damaged structures are completed. Short-term interventions include immediate restoration works to provide access and connectivity to road users, de-silting of blocked drains and provision of remedial measures or blocking water from entering landslide areas. The government, through its recurrent budget, has undertaken most of these works and is keeping roads open to traffic. It has used its existing resources and funds to engage national contractors following its own emergency procurement processes. Existing labor-based contractors were issued with contract variations to clear the fallen trees and debris to open access for delivery of emergency relief supplies. The engineering and equipment assistance provided by the Australian and New Zealand Defense Forces were instrumental in opening access on outer islands.

12. **Medium- to Long-term needs (up to 48 months).** The medium- and long-term needs involve rehabilitation, reconstruction or upgrading of transport infrastructure and roads works along “build back better” principles. Thorough site surveys and assessments with geotechnical investigations will lead to robust detailed engineering designs that apply international best-practice standards and practices. Detailed engineering designs will include disaster-resilient and climate-proof elements (for seismic activity, cyclones, and floods), including technical specifications for strengthened structures and protection works. Reputable, experienced and qualified firms and contractors through competitive bidding processes under standard sample bidding documents and for larger procurement packages will be carefully planned and executed.

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<sup>7</sup> Government of Vanuatu. 2015. *Post Disaster Needs Assessment*. Port Vila.