Insight brief

Australian Government
Department of Foreign Affairs and Trade

Partnerships for INFRASTRUCTURE
AN AUSTRALIAN GOVERNMENT INITIATIVE

Planning for resilience: Queensland's approach to disaster recovery

November 2025

Southeast Asia is projected to face continued warming, with average temperatures rising by up to 5 °C by the end of the century under a business-as-usual scenario. Rising sea levels, heavier rainfall and more destructive storms will compound risks. Increased precipitation is expected to result in increased risk of flooding, landslides and erosion, threatening livelihoods and infrastructure, with rising sea levels particularly impacting coastal areas.[1]

Queensland, one of Australia's most disaster-prone states, regularly experiences floods, droughts, heatwaves and bushfires.[2] Australia's first National Climate Risk Assessment, released in September 2025, modelled 3 warming scenarios – 1.5 °C, 2.0 °C and 3.0 °C.[3] Under the most severe scenario, sea levels could rise by half a metre by 2090, with 18 of the 20 most at-risk regions located in Queensland. A large share of the state's population lives in high-risk areas, with North Queensland communities particularly exposed to multiple hazards.

The Queensland Reconstruction Authority (QRA) was established in 2011 in response to an unprecedented wave of disasters. QRA is the lead agency responsible for disaster recovery, resilience and flood risk management policy. QRA has developed a comprehensive governance and funding framework that prioritises long-term disaster and climate resilience over recovery. Other Australian states are now seeking to replicate the QRA model.[4] This brief outlines some relevant lessons and insights from QRA that are relevant for Southeast Asian infrastructure agencies, particularly in the transport sector, seeking to embed resilience more systematically into governance, planning and budgeting systems.

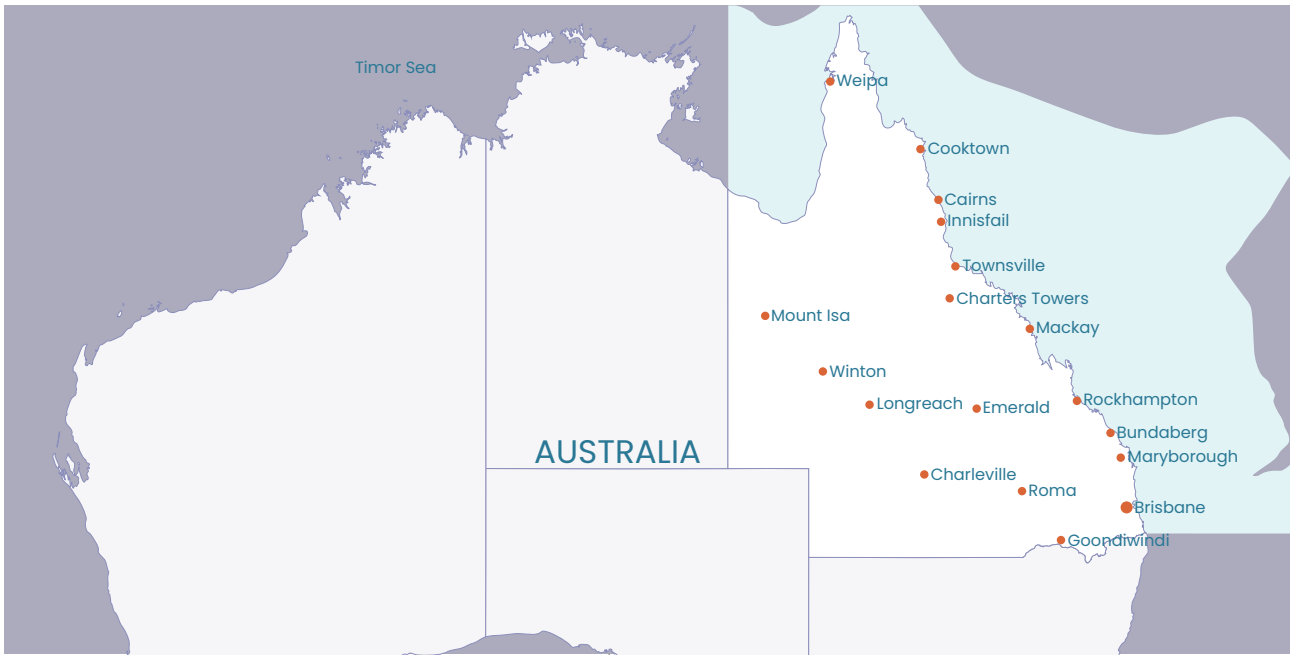
---

[1] Intergovernmental Panel on Climate Change (IPCC) Working Group II, *Asia* [fact sheet], IPCC, October 2022.
[2] Department of Energy and Climate, *Climate change in Queensland*, Queensland Government, 2024.
[3] Australian Climate Service (ACS), *Australia's National Climate Risk Assessment*, ACS, 2025.
[4] For example, in New South Wales (NSW), the state government established the NSW Reconstruction Authority in 2022.

Recurrent hazards in Queensland and impacts on infrastructure

Queensland, located in north-eastern Australia (Figure 1), is the country's second-largest state by area and encompasses the wettest and most tropical region of the continent.

Figure 1: Map of Queensland



Source: Queensland Government

The state frequently experiences extreme weather events. Climate change is likely to exacerbate their frequency and severity. Over time, climate change impacts, including rising sea levels, increased risk of storm tide inundation, coastal flooding and increased coastal erosion, will place growing pressure on infrastructure along the highly developed south-eastern coast.

Rural and remote communities, including Aboriginal and Torres Strait Islander communities (around 4.6% of Queensland's population), face heightened risks of isolation due to their geographic location and limited access to infrastructure and services.

Sea level rise, more intense flooding and stronger tropical cyclones are also projected to significantly increase clean-up, recovery and asset maintenance costs (Table 1).

Table 1: Types of climate hazards facing Queensland and potential impacts on infrastructure

Sector	Climate hazards	Potential impacts
Human settlements and infrastructure	• Sea level rise • Increased extreme fire weather • More heatwaves and extreme heat events • Increased tropical cyclone intensity • Flooding	• Inundation, erosion and infrastructure damage along the coastline • Increased maintenance and recovery costs • Increased disruption to services • Increased energy usage

Source: Department of Energy and Climate, *Climate change in Queensland*, Queensland Government, 2024, p 5.

Role of the Queensland Reconstruction Authority

Australia's system of government has 3 levels:

- **federal (Commonwealth) government** – responsible for national issues like foreign affairs, defence, and shaping national policies
- **state and territory governments (for example, the Queensland Government)** – responsible for state and territory infrastructure, including roads, hospitals, emergency services, and housing
- **local councils** – responsible for issues including local roads, rubbish collection and town planning.

The floods and storms that impacted Queensland in the summer of 2010–11 exposed some issues and inefficiencies,[5] with multiple state government agencies involved in various parts of response and recovery, and no clear coordinating authority. This also limited the ability to think and plan strategically for the long term. In response, the Queensland Government established the Queensland Reconstruction Authority in 2011.[6]

QRA's mandate includes coordinating and managing reconstruction, recovery and resilience policy after disasters. It is also charged with disaster mitigation (risk reduction), working with Commonwealth, state and local government partners to deliver best-practice administration of public reconstruction and resilience funds.

Queensland at the forefront of disaster recovery and resilience planning

Since QRA's establishment in 2011, Queensland has been hit by 135 disaster events, and QRA has managed more than A$29 billion in disaster recovery and resilience works.[7] Several features make QRA a leading reconstruction agency in Australia:

- **Legislative authority** – Clear statutory powers, including over development approvals in reconstruction areas, provide consistency and predictability.
- **Dedicated resilience funding** – Mechanisms such as the Betterment Fund enable investment in upgrading resilience rather than simple replacement, helping to reduce future costs.
- **Centralised yet collaborative approach** – QRA coordinates recovery at the state level while working in partnership with local governments, supporting them to access funding, assess risks and plan effectively.
- **Data-driven prioritisation** – Advanced mapping and analytics identify repeat-damage sites and cost hotspots, guiding smarter investment in resilient infrastructure.
- **Integrated resilience strategies** – Beyond administering funds, QRA develops policy, undertakes hazard and risk management, and leads regional resilience planning.

Queensland Reconstruction Authority's strategic plan

The Strategic Plan 2025-2029 outlines QRA's vision, purpose, organisational objectives, strategies, outcomes and performance indicators.[8] The plan has 4 main principles:

Principle 1 - Lead state recovery under a changing climate

Principle 2 - Strengthen resilience through preparedness

Principle 3 - Invest in betterment and disaster risk reduction for resilience

Principle 4 - A capable and empowered team

---

[5] From November 2010 to January 2011, floods affected 75% of Queensland, killing 33 people (3 bodies never recovered) and prompting the evacuation of 5,900 people from 3,600 homes. Around 28,000 homes required rebuilding or major repairs. The disaster inundated 3,572 businesses, caused A$4 billion in economic losses, damaged 19,000 km of roads, disrupted 3 major ports, and left over 28% of the rail network twisted or displaced. Australian Institute for Disaster Resilience, *Queensland and Brisbane 2010/11 Floods*, Australian Disaster Resilience Knowledge Hub website, n.d., accessed 10 November 2025.

[6] Queensland Reconstruction Authority (QRA), *Governance*, QRA website, n.d., accessed 10 November 2025.

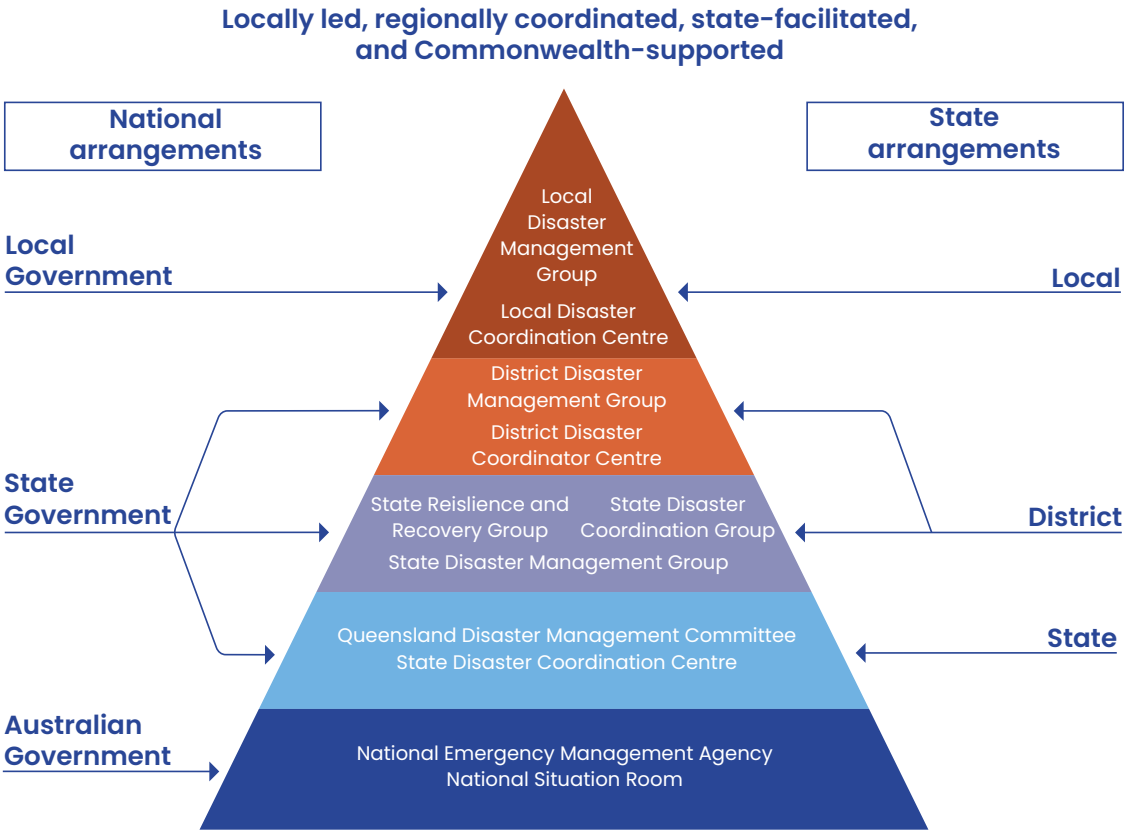
[7] QRA, *Annual Report 2024–2025*, QRA, 2025, p 5.

[8] Queensland Reconstruction Authority (QRA), *Queensland Reconstruction Authority Strategic Plan 2025–29*, QRA, 2025.

Queensland Reconstruction Authority's recovery and resilience governance model

QRA uses a recovery and resilience governance model that is locally led, regionally coordinated, state-facilitated, nationally supported and globally aligned (Figure 2).

Figure 2: Queensland's recovery and resilience governance model



Source: QRA

QRA's main planning and strategy documents include the Queensland Recovery Plan, the Queensland Strategy for Disaster Resilience, and regional resilience strategies and action plans.

Queensland Recovery Plan

The Queensland Recovery Plan outlines recovery requirements for operations, planning and arrangements at the local, district and state level.[9] It drives a collaborative and coordinated approach across all functions of recovery, all levels of government and the whole community, ensuring operations are scaled appropriately to the severity of a disaster.

The plan also sets out the arrangements for transitioning from response to recovery, clarifying the roles and responsibilities of the State Recovery Policy and Planning Coordinator, state recovery coordinators and the functional recovery and resilience groups – to assist disaster-impacted communities achieve optimum recovery outcomes. Functional recovery and resilience groups support communities across the 5 functional lines of recovery: human and social, economic, environment, building, and roads and transport.

Importantly, the Queensland Recovery Plan emphasises building resilience through recovery. It provides stakeholders with information and guidance on the governance, planning and operational issues relating to disaster recovery for all hazards.

[9] QRA, *Queensland Recovery Plan*, QRA, June 2023.

Queensland Strategy for Disaster Resilience

The Queensland Strategy for Disaster Resilience 2022–2027 guides how the Queensland Government collaboratively delivers disaster resilience commitments and actions, based on local and regional needs, to strengthen community resilience.[10]

QRA leads statewide hazard and risk management functions, including prevention, mitigation and preparedness activities. Its resilience-focused role includes:

- coordinating the development and implementation of whole-of-government policies to manage disaster risk
- providing advice to support policies that promote more resilient buildings, infrastructure and communities.

Risks are identified not only through historical hazard profiles but also using climate forecasting and physical asset vulnerability assessments, undertaken in collaboration with the Queensland Department of Transport and Main Roads and local governments. This approach ensures local knowledge is embedded, drawing on frameworks such as regional resilience strategies and action plans.

Regional resilience strategies and actions plans

In recent years, QRA has rolled out 14 regional resilience strategies, developed through a co-design and place-based approach that empowers local governments to tailor strategies to their communities. This process recognises that communities are best placed to understand their own risks and contribute local knowledge to address them.

These strategies support Australia's commitment to the global Sendai Framework for Disaster Risk Reduction 2015–2030,[11] and align with Queensland's statewide resilience goals. In addition, all 77 local councils across the state have resilience action plans in place, supported by regional liaison officers and resilience and recovery officers.

Frameworks and funding mechanisms for recovery and resilience in Queensland

Queensland's framework for recovery and resilience is built on all levels of government supporting local action. A growing proportion of funding is directed towards proactive resilience measures.

Key principles of assistance

Queensland's resilience and recovery funding system is built on the principle that recovery and resilience are shared responsibilities across all levels of government, involving Commonwealth, state and local governments. Assistance is designed to complement local initiative rather than replace it. This ensures that communities are supported while still being encouraged to plan and mitigate risks themselves. Funding is also guided by principles of equitable distribution, sustainability, and minimising the burden on taxpayers through cost-sharing arrangements.

Disaster Recovery Funding Arrangements

The Disaster Recovery Funding Arrangements (DRFA) is a mechanism through which the Australian Government provides funding to states (like Queensland) and territories to share the financial burden of responding to a disaster.[12] Acting as a financial safety net, the DRFA covers eligible relief and recovery expenditures following disasters. While its primary focus is on recovery, the DRFA also requires resilience measures to be embedded in reconstruction, helping reduce the risk of repeated damage. Queensland's councils and partner organisations can also make use of other funding mechanisms, as described in Table 2.

---

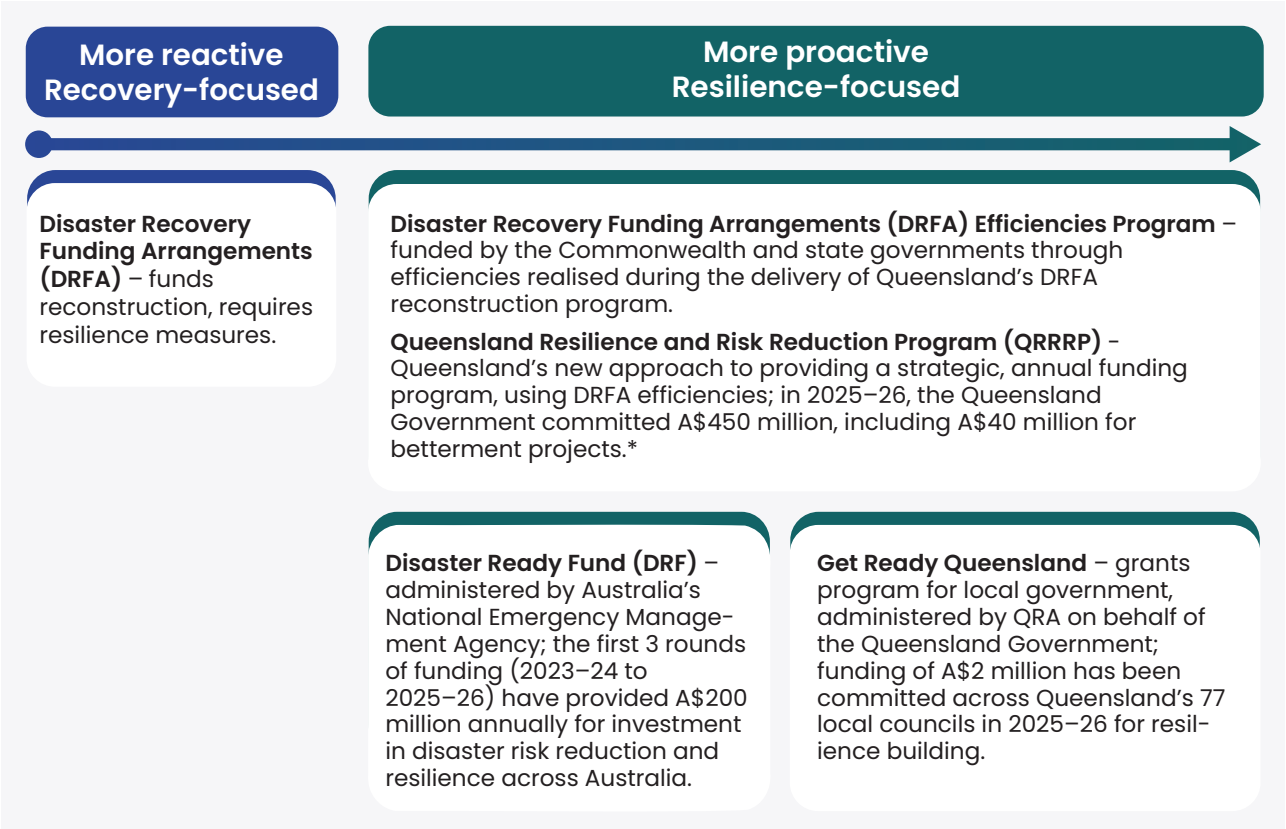
[10] QRA, *Queensland Strategy for Disaster Resilience 2022–2027*, QRA, September 2022.

[11] United Nations Office for Disaster Risk Reduction (UNDRR), *Sendai Framework for Disaster Risk Reduction 2015–2030*, UNDRR, 2015.

[12] Department of Home Affairs, *Disaster Recovery Funding Arrangements 2018*, National Emergency Management Agency, 2018.

Over recent years, Queensland has significantly evolved its funding approach, allocating a growing proportion of resources towards proactive resilience measures rather than traditional reactive post-disaster recovery. This is demonstrated by increased investment in strategic programs such as the Queensland Resilience and Risk Reduction Program (QRRRP), which leverages savings from past recovery efforts to finance risk reduction and resilience-building projects, such as betterment projects under the QRRRP.

Table 2: Queensland resilience and recovery funding continuum



* More information about betterment projects is provided below.

Sources: QRA, '*Betterment the centrepiece of $450 million resilience program*', QRA, 24 June 2025; National Emergency Management Agency (NEMA), *Disaster Ready Fund*, NEMA website, n.d., accessed 10 November 2025; QRA, *Get Ready Queensland funding for councils*, QRA website, n.d., accessed 10 November 2025.

Queensland's Betterment Program

Queensland has progressively shifted from a reactive to a proactive approach to resilience. The Betterment Program, launched in 2013, is a strong example of this shift. The program enables local governments and state agencies to rebuild essential public assets, such as roads, bridges and floodways, to a more resilient standard, helping them better withstand future disasters. Improvements may include stabilising low-lying roads to reduce erosion and scouring, upgrading drainage structures to increase capacity, or replacing gravel with reinforced concrete to improve resilience.

Since its launch, more than 920 Betterment Program projects have been delivered across Queensland, supported by over A$790 million of investment.[13] As of October 2024, betterment projects had been exposed to 44 events, with 79% suffering no or only minor damage. For projects that were re-impacted, an initial investment of A$244 million has generated over A$988 million in avoided costs – a return of more than A$4 for every dollar invested.[14]

Figure 3 illustrates example projects and their associated avoided costs.

[13] QRA, *Queensland Betterment Funds*, QRA website, n.d., accessed 10 November 2025.

[14] QRA, *Queensland Betterment Programs*, QRA, October 2024.

Figure 3: Examples of Betterment Program projects and avoided costs

Sources: QRA, *Betterment: Gayndah Mundubbera Road*, QRA website, 11 July 2024; QRA, *Betterment: Villis Bridge*, QRA website, 11 July 2024; QRA, *Betterment: Inverdon Bridge*, QRA website, 23 August 2021.

Quantifying direct and indirect benefits of betterment: the SAVi tool

Developed by the International Institute for Sustainable Development (IISD), the Sustainable Asset Valuation (SAVi) is a cost–benefit assessment tool that enables governments and investors to make informed decisions on financing sustainable infrastructure.[15] By integrating a range of direct and indirect costs and benefits from infrastructure projects with traditional project finance modelling, SAVi provides a comprehensive evaluation and comparison of the total value of Betterment Program projects. Unlike traditional cost–benefit analysis, SAVi quantifies in financial terms the externalities generated directly by projects, revealing co-benefits and trade-offs that might otherwise remain hidden, thereby supporting more risk-informed infrastructure development.

QRA has explored applying SAVi to its Betterment Program, with a focus on road infrastructure and the impacts of closures. To date, the tool has been used retrospectively to assess the economic benefits of Betterment Program investments. SAVi relies on well-developed, localised datasets to quantify the full value of investing in betterment projects, including the wider socio-economic and environmental costs avoided and benefits gained from more resilient infrastructure.

Box 1

Applying SAVi to the Aurukun Access Road betterment project

The Aurukun Access Road in remote North Queensland was a gravel road that provided the only road link to and from the Aurukun community. It was flood-damaged 4 times from 2010 to 2013.

In 2013, Betterment Program funding was used to seal a flood-prone 10-kilometer section, which has since withstood 10 flood events without repairs. SAVi assessed the project's wider benefits using 15 indicators related to transport, the economy, mental health, and access to services. The analysis estimated daily savings of A$29,228 from these wider benefits – making it a clear case for investing in more resilient infrastructure.

Source: QRA, *Betterment: Aurukun Access Road*, QRA website, 11 July 2025.

[15] International Institute for Sustainable Development (IISD), *Sustainable Asset Valuation* [website], ISSD, n.d., accessed 10 November 2025.

Overall, Betterment Program investments have demonstrated major cost savings, with SAVi providing strong support for justifying future betterment investments. Recent floods showed millions of dollars in avoided reconstruction costs, stronger connectivity for communities, and increased public confidence. By allocating A$40 million in 2025–26 for betterment projects through the Queensland Resilience and Risk Reduction Program, Queensland has institutionalised resilience integration in infrastructure planning.

Peer-to-peer experience sharing

Queensland's experience demonstrates the importance of integrating resilience through governance, funding and locally led approaches. Southeast Asian countries facing similar climate challenges have the opportunity to adapt these strategies in ways that respect and build upon local knowledge, governance structures and community priorities. Given the region's diverse governance systems, spanning national, provincial and municipal levels, QRA's approach could be tailored to fit more decentralised or multilevel administrative frameworks in Southeast Asian countries. Additionally, the emphasis Queensland places on equity by addressing the needs of vulnerable, remote and Indigenous communities aligns well with the varied social contexts across the region, making this approach especially relevant for some countries.

Rather than prescribing solutions, QRA's approach, along with supporting analysis tools like SAVi, offers a starting point for dialogue and co-development. The model recognises that resilience must be proactively promoted by governments and shaped by those who live with the risks.

Key principles for governments seeking to strengthen infrastructure resilience include:

- **Build a compelling narrative that justifies resilient investment**: Boosting resilient investment relies on buy-in from key decision-makers within government, and a clear justification (for example, economic benefits to be gained) is a key enabler of this.
- **Governance clarity matters**: Resilience should be treated as a shared responsibility, with clearly defined roles and accountabilities across agencies.
- **Link recovery funding to resilience funding**: Programs focused on the betterment of disaster-impacted infrastructure demonstrate how recovery savings can be leveraged to mitigate future risk.
- **Embed resilience in budgeting**: Investment frameworks and budget processes should incorporate resilience objectives and indicators.
- **Base decisions on evidence**: Tools like SAVi, adapted to local contexts, can help build strong, data-driven business cases for resilient investments to be reflected in national priorities. Strengthening data quality and availability will be crucial to support this evidence.

QRA and Thailand Ministry of Transport representatives exchange knowledge on resilience and recovery in July 2025 in Bangkok, Thailand. Source: P4I

Ho Chi Minh City, Vietnam. Source: Shutterstock

About this document

This insights brief summarises and updates information presented by QRA at the Resilience and Recovery Program Knowledge-Sharing Session on 7 July 2025 in Bangkok, Thailand. The session, part of Partnerships for Infrastructure's ongoing collaboration with Thailand's Ministry of Transport, explored how new approaches and assessment tools can strengthen resilience in the transport sector in Thailand.

Acknowledgement

This publication has been funded by the Australian Government through the Department of Foreign Affairs and Trade and the Partnerships for Infrastructure (P4I) initiative. P4I partners with Southeast Asia to drive sustainable, inclusive and resilient growth through quality infrastructure. More information about P4I is available at partnershipsforinfrastructure.org.

Partnerships for Infrastructure acknowledges Aboriginal and Torres Strait Islander peoples as the traditional custodians of Country throughout Australia, and we pay our respects to Elders past and present. P4I also recognises early connections between Southeast Asia and the First Nations peoples of Australia.

Disclaimer

Australian Government
Department of Foreign Affairs and Trade

Partnerships for INFRASTRUCTURE
AN AUSTRALIAN GOVERNMENT INITIATIVE