

Key Messages

Global Infrastructure Resilience 2025

Capturing the Resilience Dividend

A Biennial Report from the
Coalition for Disaster Resilient Infrastructure



Buildings in Kathmandu, Nepal Source: Floris Boogaard

Assessing infrastructure risks and measuring the benefits of resilience are key to resilient infrastructure planning.

1. Risk assessments are invaluable tools to prioritize resilient investments, including maintenance, retrofitting, constructing cost-effective and resilient new assets, and rebuilding damaged assets more efficiently after a disaster.
2. Localized infrastructure risk assessments at national and subnational levels are needed to inform resilience investment decisions. National-level risk assessments can help governments obtain an aggregated overview of risks across various infrastructure sectors, thereby informing national policies more effectively. However, translating policies into action requires a more granular analysis.
3. CDRI's Global Infrastructure Risk Model and Resilience Index (GIRI), developed to conduct infrastructure risk assessments, is not only global—it can also be applied at regional, national, and subnational levels, leveraging better data and local knowledge. The standardized financial risk metrics generated by GIRI represent a common language for identifying, understanding, visualizing, and estimating physical risk to infrastructure.
4. Infrastructure agencies, regulators, ministries of planning and finance, and infrastructure asset operators should mainstream the use of risk assessment and cost-benefit analysis tools to make new infrastructure investment decisions. The quantification of direct and indirect resilience benefits is indispensable for allocating limited funds to maintenance and retrofitting; building new, stronger assets; and rapidly and fully reconstructing after disasters.

II

Recovery-readiness and faster reconstruction reduce the economic impacts of disasters.

5. CDRI's economic impact modelling in eight diverse countries shows that the economic costs associated with infrastructure failures due to disasters are, on average, 7.4 times the cost of direct damage to infrastructure assets. When roads and ports fail, products do not reach the market. If electricity and water services are interrupted, businesses and households suffer.
6. Faster and comprehensive reconstruction after disasters significantly reduces economic losses. If a country is able to execute a full reconstruction over 10 years—instead of the usual long, partial reconstruction processes—the average gross domestic product (GDP) impact in 2050 may decline by more than half, from 7.4 percent to 3 percent. Faster reconstruction reduces the economic impacts even further. Financial and institutional readiness for fast reconstruction is key.

III

Businesses that build end-to-end resilience capabilities can better absorb, respond to, and recover from disasters, and have shorter downtime and faster market-share recovery.

7. According to CDRI's global survey of more than 500 businesses, over three-quarters of respondents believe that clearer policies and stronger enforcement of resilient infrastructure are necessary to protect companies from the impacts of disasters. The ability to withstand and recover from disasters depends not only on the businesses' internal continuity planning and response but also on the timely recovery of the infrastructure services they rely on.
8. The vulnerability of businesses is determined not only by the hazards faced by a company's own sites but also by the resilience of suppliers, logistics, and customers. For many industries, value-chain risks—such as disrupted inputs and blocked logistics nodes—may be more important than direct damage to their facilities. According to the survey, 85 percent of large firms do not consider supplier resilience during vendor selection.
9. To build their resilience, businesses need to test their business continuity plans and support them with detailed standard operating procedures, agreements with reliable vendors and suppliers, and insurance packages to protect their assets and revenues. While insurance penetration is high among large businesses, more than 40 percent recognize they do not have sufficient coverage for disasters.

IV

New technologies are radically changing the way infrastructure becomes resilient.

10. New technologies hold immense promise for transforming the resilience of infrastructure systems. They can help improve the data value chain, communication, and the robustness of the infrastructure system.
11. The cost of new technologies is a fraction of the cost of infrastructure service interruptions. However, the benefits of new technologies for resilience can be short-lived if infrastructure agencies and asset operators do not establish strong standards, incentives, and an organizational culture that fosters innovation and learning. Furthermore, the most cost-effective technologies do not necessarily require high-tech solutions at the forefront of innovation.
12. With clear policies, guidance and incentives, the private sector can be an ally in the technological transformation for infrastructure resilience.
13. Technology is evolving rapidly – its integration into resilience efforts should too. New infrastructure should be designed in a manner that can easily accommodate evolving technologies.

V

Resilient infrastructure financing requires a layered approach, with a range of instruments available to absorb, respond to, and recover from the impacts of disasters.

14. Infrastructure failures not only have significant economic impacts but also increase a country's public debt burden and lower its credit ratings.
15. No single instrument can fully cover all disaster-related risks. A combination of financial instruments, including dedicated resilience budget lines, contingent budgets, loans, insurance, and fast access to international grants and soft credit, is needed. Each of these can be used at different times before, during, and after a disaster.
16. Risk transfer through insurance instruments can provide resources faster than emergency appeals to external donors in a post-disaster situation. Ministries of finance and infrastructure agencies can consider a range of insurance products as part of an overall disaster financing strategy. These products include property and asset insurance, public asset insurance, sector-wide insurance, and catastrophic risk products.
17. Systematic investments in maintenance, retrofitting, data systems, and capacity building for infrastructure professionals are indispensable to building infrastructure resilience. These resilience measures are less visible than building new infrastructure or rebuilding after disasters. However, these 'invisible' measures can bring immense benefits. The survey shows that these actions receive inadequate funding across countries of all income levels.
18. Poorer regions within a country and small, low-income countries cannot be ignored. Even small investments to strengthen resilience in areas with a high infrastructure deficit will yield enormous social and economic benefits.

VI

Infrastructure resilience requires strong coordination across government agencies, infrastructure asset owners, operators, businesses and communities.

19. CDRI's Global Infrastructure Resilience Survey received responses from over 3,000 professionals across more than 100 countries. A key message from the survey findings is that strengthening policies, standards, codes, and regulations that adequately address resilience and consider future climate risks is the most critical action governments can take.
20. Procurement processes are critical to embedding resilience into infrastructure projects. Beyond applying technical codes and standards, procurement documents, especially at the design and planning stages, should explicitly include resilience.
21. Infrastructure agencies alone cannot fix the resilience challenge. They need the support of ministries of finance and planning, disaster risk management agencies, subnational governments, standard-setting bodies, and the private sector. Resilience is everybody's business.
22. Infrastructure agencies and disaster risk management authorities must work together to develop integrated disaster preparedness plans, organize drills, strengthen and utilize early warning systems for critical infrastructure services, and mobilize resources for faster and complete reconstruction of more resilient infrastructure.

VII

Policies, governance frameworks, standardized technical guidance and well-designed financial instruments are necessary to move NbS from pilots to mainstream infrastructure practice.

23. Nature-based Solutions (NbS) offer cost-effective, adaptive ways to build resilient infrastructure with ecological and social co-benefits. Supported by strong policies and monitoring, NbS can complement traditional infrastructure. They require proactive maintenance and strong engagement across various sectors (water, transport, environment, and disaster risk management), as well as among different actors, including local communities and indigenous groups. Infrastructure agencies will also need to acquire technical expertise in ecology and related fields, in addition to traditional engineering skills.
24. To scale up the implementation of Nature-based Solutions for resilient infrastructure, they should be embedded in master plans, infrastructure strategies, and concession agreements, ensuring that NbS are considered from the outset of infrastructure planning for adaptation, water security, and hazard mitigation, not as optional add-ons.
25. The availability of financial resources and well-designed instruments is indispensable to scaling the use of NbS. Instruments such as blended finance, PPPs, and performance-based contracts align incentives for both public and private actors.



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This Work is a product of the Coalition for Disaster Resilient Infrastructure (CDRI) as part of the second Global Infrastructure Resilience report (GIR 2025) and features external contributions from multiple organizations. The full report and the executive summary may be accessed at <https://cdri.world/resilience-dividend/global-infrastructure-resilience-report-second-edition/>. All working papers prepared for this report (GIR 2025 Working Paper Series) are available on CDRI's official website, accessible on the web link mentioned above. They provide detailed background material, methodologies, analyses, and case studies for each chapter of the report. The papers will be released sequentially starting November 2025 through 2026.

An online data platform enabling visualization, analyses, and downloading provisions for the results of the Global Infrastructure Risk Model and Resilience Index (GIRI) is available at <https://cdri.world/giri>. Updates incorporating the GIRI 2025 results will be available on this platform in early 2026.

GIR 2025
Executive Summary



GIR 2025 Report



This document is a launch edition and may undergo minor changes in design.