

BOLSTERING ROAD GEOHAZARD RISK MANAGEMENT IN DEVELOPING COUNTRIES

Gathering, sharing and applying Japanese knowledge



Main Menu

Geohazard Risk Management Case Studies in South Asia

These are examples of brief representative case studies that illustrate various approaches to Road Geohazard Risk Management in practice.

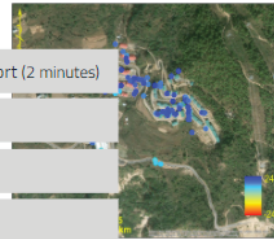
GFDRR-EU Program on Strengthening Geohazard Risk Management in DRM and Transport (2 minutes)

Proactive Monitoring and Assessment of Critical Slopes Using Remote Sensing (2 Minutes)

Transportation Geohazard Decision Support System (2 minutes)

Training for Engineers in Nepal (2 minutes)

South to South Workshop on Geohazard Risk Management in South Asia (2 minutes)



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Road Geohazard Risk Management E-Learning

AT A GLANCE

Region: Global

Hazards:
Geohazards

Areas of Engagement:
Resilient infrastructure

Geohazards include almost all hazards affecting road infrastructure such as landslides, debris flows, floods and erosion. In many countries, the lack of road geohazard risk management is causing the loss of human life, damage to vital infrastructure, and disruptions to critical services such as water and energy supply.

The impacts of climate change are likely to result in an increase in the frequency and intensity of geohazards, most of which are linked to climate activity including rainfall and thawing of ice and snow.

Under a \$700,000 grant, the **Japan-World Bank Program for Mainstreaming Disaster Risk Management (DRM) in Developing Countries** has supported the development of a global knowledge program on road geohazard risk management, drawing on Japan's expertise and experience tackling road geohazards at home.

A key first step for the technical team was to systematically gather Japanese knowledge in road geohazard risk management. One key finding from this initial deep dive, which

has been made publicly available in a [case study report](#), is that Japan has taken a systematic approach to road geohazard risk management which covers all aspects of the sector, from governance and laws to engagement with a range of stakeholders before, during, and after a geohazard event.

With an eye for distilling these findings into practical insights that would be both relevant and accessible to resilient transport practitioners everywhere, the team subsequently produced the [Road Geohazard Risk Management Handbook](#). The comprehensive how-to guide for policymakers and practitioners, which has been published in the World Bank's Open Knowledge Repository, covers several key areas including institutional capacity and coordination, systems planning, engineering and design, operations





Photo: Masatsugu Takamatsu

and maintenance, and contingency planning. Featured in a technical paper for the *Natural Hazards Review*, the handbook also includes standard templates for terms of reference that can be adapted to technical assistance projects for road geohazard risk management, as well as an operations manual for practitioners working in the sector.

**Over 16 countries
have drawn on
Japanese expertise and
experience to build
their resilience to road
geohazards.**

The handbook was presented to transport officials from 16 countries at the Resilient Transport technical knowledge exchange (TKX) in Tokyo in May 2017. The handbook has also been converted into an [e-learning course](#) available to the public at the World Bank's Open Learning Campus, which also includes a reference list, online resources, and real-world case studies of road geohazard risk management. The handbook and e-learning will be further disseminated in South Asia and other geohazard prone regions.

In Brazil, Serbia and Sierra Leone, the team has used the handbook as a starting point to conduct an assessment of road geohazard risk management practices and provide strategic recommendations for key actions moving forward. In an effort to inform practices in other countries, these [assessments](#) have been made publicly available. A similar assessment is currently in the pipeline for Dominica.

A key finding from the assessments, which are now beginning to drive policymaking and planning, is that there is a need to strengthen country-level institutional frameworks. Heeding the recommendations of the country-level assessment, which highlighted gaps in coordination capacity, the government of Sierra Leone has established a National Disaster Management Agency which is expected to work with the Sierra Leone Roads Authority to mainstream geohazard risk management into road asset management.

Both the Brazil and Serbia assessments also drew on technical assistance from Japanese experts, including from the Japan International Cooperation Agency (JICA) and Nippon Koei, while the Sierra Leone assessment was conducted in partnership with the Ministry of Transport and Aviation (MoTA) and Sierra Leone Roads Authority, among other agencies in the country.

RESULTS HIGHLIGHTS

- **Japanese knowledge on road geohazard risk management synthesized and shared.** The team produced a widely disseminated Road Geohazard Risk Management Handbook, also available as an e-learning course, which serves as a comprehensive how-to-guide covering several key areas including institutional capacity and coordination, systems planning, engineering and design, operations and maintenance, and contingency planning.
- **Road geohazard risk management policies in developing countries informed and strengthened.** For example, the government of Sierra Leone has established a National Disaster Management Agency which is expected to work with the Sierra Leone Roads Authority to mainstream geohazard risk management into road asset management.

KEY PUBLICATIONS

- [Road Geohazard Risk Management Handbook](#)
- [Technical Knowledge Exchange on Resilient Transport – Summary Report](#)
- [Second Technical Knowledge Exchange on Resilient Transport – Summary Report](#)
- [Road Geohazard Risk Management – Solutions Brief](#)
- [Road Geohazard Risk Management Handbook: Appendix C – Japan, Serbia and Brazil Case Studies](#)
- [Road Geohazard Risk Management Handbook: Appendix A and B – Terms of Reference and Operations Manual](#)
- [Road Geohazard Risk Management Sierra Leone Study](#)
- [Road Geohazard Risk management: new tools and e-learning](#)

CONTACT INFO:

Akiko Toya, atoya@worldbank.org

Masatsugu Takamatsu, mtakamatsu@worldbank.org



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