ROADS TO RESILIENCE: LESSONS FROM A LENGTHSMAN

ABSTRACT Walking along a rural road, it is easy to identify damage that can put the resilience of the road at risk. What quickly becomes clear is that the details and the interfaces between the infrastructure and its surroundings are critical, and water is the principal actor.

Whether it's a rural road or a high-speed rail link, resilient transport infrastructure is crucial to provide the security needed for investment and development. Although good design and regular maintenance are fundamental to ensure resilience, for more sophisticated infrastructure a more formal framework is helpful. A recent guidance note [1] produced by the World Bank identifies four stages in infrastructure management and expands on the detailed work that is required at each stage:

- Policies and Procedures that define responsibilities and set out clear requirements to ensure infrastructure is resilient,
- Planning and Design stages that factor in the risks and the availability of any alternative routes to prepare resilient and economical designs,
- Construction that provides the details needed to tailor the infrastructure into its surroundings, and
- Operation, Maintenance and Response systems that address small issues before they become major problems, and support infrastructure users when things do go wrong.

Although this framework guides us in producing infrastructure that should be resilient, capacity to withstand hazardous events provides the acid test of resilience. So how can resilience be assessed?

The paper explores these issues, highlighting the importance of experience and construction details.

[1] Reference: Keou, O. et al. (2025). Disaster and Climate-Resilient Transport Guidance Note, Washington DC: World Bank.