Transport systems face disruption by extreme weather—better risk management is needed

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Extreme weather conditions due to climate change pose a new threat to ageing infrastructure. We need to be better prepared, according to a publication by the OECD's International Transport Forum. The findings of a number of research projects can now be applied worldwide. VTT Technical Research Centre of Finland was the lead author of the report in Finland.

Extensive preparations should be made for extreme weather events to minimise or avoid dangerous situations. In an OECD report, experts from a number of countries have broadly appraised the costs of disruption to transport systems and the most effective ways of reducing such costs. The report also included a list of long and short-term strategic measures. The results combine earlier research findings with experiences from the EU, the USA, Canada, Japan and Australia. For example, according to the EWENT (Extreme Weather Impacts on European Networks of Transport) project coordinated by VTT, transport system disruptions alone could cost national economies in the EU up to 0.15% of GDP. Such disruptions include traffic accidents, infrastructure damage, and delays in travel and transport, for example.

The freshly published report lists nine strategic measures which it proposes for inclusion in the transport and infrastructure policies of OECD countries. 1) act now! 2) invest in maintenance, 3) prepare for more frequent extreme weather events, 4) draw up continuity plans for

sudden events, 5) assess the vulnerability of transport systems, 6) focus on the system's resilience, not just better infrastructure, 7) re-evaluate redundant transport infrastructure, that can provide valuable alternative routes if main routes fail, 8) extend your assessment beyond traditional cost-benefit analyses, 9) develop new investment appraisal methods that take better account of uncertainties, risks and a possible future in which extreme events become more frequent.

"Each of these recommendations is very serious and they should be taken into account in managing the entire transport system life cycle - they address planning, construction, appraisal, maintenance and use. Experts need this information when improving the resilience and durability of different parts of the transport system. Citizens will benefit from a transport system that continues to serve the public during extreme weather conditions and situations," emphasises Principal Scientist Pekka Leviäkangas of VTT. "Many impacts of climate change and extreme weather events emerge only after a long delay, so this is not just about sudden phenomena such as torrential rain or snow storms. We need to improve resilience in the long term as well, with an eye on the cost impacts on future generations."

A new approach to risk management will also provide new business opportunities to companies involved in maintenance, diagnostics technologies, in the strategic design of the transport system and infrastructure, and life-cycle management.

More information: Adapting Transport to Climate Change and Extreme Weather Implications for Infrastructure Owners and Network Managers. *International Transport Forum*.
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