

An uncertain climate

Written by: Robin Davis, OECD Observer

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Adapting Transport to Climate Change and Extreme Weather

Implications for Infrastructure Owners and Network Managers



Research Report



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Extreme weather is now par for the course worldwide thanks to climate change. While everyone may enjoy a day off work due to transportation troubles, extreme temperature and rising sea levels can damage infrastructure. Heat exposes it to a higher risk of fire, storms and precipitation can cause physical asset damage, and rising sea levels endanger low-lying systems. We must change our existing systems and *Adapting Transport to Climate Change and Extreme Weather: Implications for Infrastructure Owners and Network Managers* provides a wealth of information about why and how we can best do this.

Since 1980, we have tallied up increasing losses due to extreme weather events. Public transportation systems are not the only ones affected by weather. Unusually warm temperatures cause bridges to unduly expand, strong winds delay flights, and flooding increases mudslides, and rail and road washouts. A

recent assessment of how much extreme weather cost affected transport systems in Europe from 1998 to 2010 came to an estimated €2.5 billion per year. This included damage, repairs, and maintenance and systems operations costs.

While the financial impact is substantial, it's near impossible to do cost-benefit analyses of adapting transportation systems because of the myriad of probabilities in climate-change effects. Instead, we need to measure criteria such as the robustness of our systems to determine how to adapt current transport infrastructure to extreme weather eventualities. We can utilise real-options analyses, which is a management evaluation tool used to decide whether to engage in or defer in acquiring or upgrading capital equipment, to determine when to build new systems and how to upgrade them.

As accurate climate change projections are viable only until 2050, we need to find ways to prepare for what comes after. We need to develop new tools and new ways to re-evaluate our systems. Most importantly, we need to act now.

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References

ITF (2016), *Adapting Transport to Climate Change and Extreme Weather: Implications for Infrastructure Owners and Network Managers*, OECD Publishing, Paris. <http://dx.doi.org/> <http://dx.doi.org/10.1787/9789282108079-en>