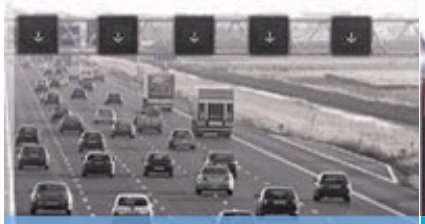

European Journal of Transport and Infrastructure Research
(ISSN 1567-7141)

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Climate Adaptation of Railways: Lessons from Sweden

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Abstract

The current variability in weather and climate is posing a challenge for transport infrastructure. However, during the past decade the need to adapt to a changing climate has attracted increasing attention. This paper summarises a case study on the future vulnerability to climate change of the Swedish railway transport system and its adaptive capacity. The combination of a long time horizon in planning and an expected increasing demand for rail traffic raises many questions regarding how adaptation to climate change can be accounted for in future planning, design and management of railways. The case study was essentially based on interviews with key personnel within the Swedish Rail Administration. Views on vulnerability and adaptation to climate change were documented, and the need for improved methods to assess the vulnerability and adaptive capacity related to climate change for the Swedish railways was addressed. The conclusions of the paper are addressed to the European railway context at large. Firstly, systematic mapping of current climate vulnerabilities and their consequences is important in order to guide the implementation of adaptation measures. Secondly, climate change should be considered in the early stages of planning and included in risk and vulnerability assessments. In assessing future conditions with the aim of prioritising adaptation measures, current methodologies should be complemented with more future-orientated tools. When designing adaptation measures, the effects of potential goal conflicts should also be assessed, in order to avoid the implementation of counter-productive measures. The possibility of creating synergies with climate mitigation goals and other environmental goals should also be investigated.

Received: June 2008
Accepted: March 2009

Keywords: climate change; adaptation; vulnerability; transport; railway; Sweden; Europe