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Critical size events: a new tool for crisis management resource allocation?

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Abstract

To accommodate future growth and economic development, various autonomous developments take place simultaneously in the Netherlands. On one hand, regional economical development focuses on spatial planning, characterized by concepts such as compact cities, transportation corridors and multifunctional use of limited space, including underground infrastructure. On the other hand, developments in the transportation area are addressed from an European perspective, including Trans European networks, High Speed lines, dedicated freight lines, open railway markets, innovative technology and interoperability requirements. In the Netherlands, both developments have become inseparably interwoven because they have to be realised in already densely inhabited and industrialised areas. Safety consequences are involved which may manifest themselves as major events due to inherent deficiencies in the systems. The nature and extent of potential events as well as the probabilistic nature of risk decision making do not take into account specific needs and requirements of the rescue and emergency management sector. New instruments are developed for this sector to cope with requirements of a transition towards a regional crisis and emergency management force with explicit performance standards. To this purpose, a Critical Size Event for contingency planning and crisis management is introduced, similar to the concept of a Maximum Credible Accident in the process industry. A broad-brush outline of the instrument is given and the potential for further development of the concept is discussed.

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1. Introduction

In the Netherlands, debates on urban and spatial development focus on regional development, characterized by the name of the region, such as the ‘Groene Hart’, ‘Noord Brabant’ and ‘Gelderse vallei’ (PZH, 1995). The debate deals with contradictions between a compact city concept, urbanization, transport corridors, multi-functional use of limited space and requirements of economical development. In the transportation arena, attention is paid to the Netherlands as a Distributing Country, intensified use of transportation corridors with high percentages of hazardous material, mainports, hubs and spokes and connections to international transportation networks and markets. The transportation sector foresees major changes in transportation volumes, a tight coupling of modes into corridors with high-density transportation of passengers and goods, a permanent use as a consequence of the 24-h economy. These developments are also characterized by the use of underground infrastructure, new traffic control systems, new logistic concepts and the large-scale implementation of information technology and telematics. A major role is allocated to the railways, leading to large-scale infrastructure projects and international network links such as the ‘Betuweroute’ dedicated cargo line and the Amsterdam–Antwerp ‘High Speed South’ line for passenger transport. Encompassing documents on a national policy making level structure the decision making and act as guidelines for implementation of spatial planning and transportation initiatives (VenW, 2000; VROM, 2001). Spatial planning, regional development and transportation systems have become inseparably interwoven. However, it is a question whether the spatial planning debate has sufficient knowledge of the developments, which are occurring in the transportation industry. Relatively little attention is paid to developments in transportation, which seem to possess its own international context and decision-making arena. Both arenas are hardly related to each other (Baggen, 2001). Several limitations and weaknesses are discussed to ensure that these developments do not result in unforeseen safety problems in practice, exceeding social unacceptable risk levels and available resources of local and regional crisis management organisations.

2. Urban planning and regional development

The present governmental policy for the ‘Groene Hart’ aims at preservation of open landscapes, nature and agricultural use. Developments with respect to housing, industrial development and infrastructure have been constrained to certain limits (PZH, 1995). For the sake of preservation, the compact city was developed as a concept, combining a variable and multi-functional city into a ‘Delta Metropolis’, characterized by intensification, combination and transformation of functions. Such characteristics prove to be cumbersome in practice because the close vicinity of many functions causes hindrance in terms of noise or bad smells and introduces risk in terms of social and traffic safety. Such intensification poses limits to the reduction of spatial planning demands in terms of permanent loads and requires mitigating

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