Executive summary

Introduction
In the period starting the middle of 2004 until November 2006, the Ministry of Transport, Public Works and Watermanagement is carrying out a follow-up experiment with so called Longer and Heavier Vehicle Combinations (LHV's) on urban and rural roads. The experiment includes LHV's which are longer and heavier than presently allowed in the Netherlands (without a release). It was only allowed to use the LHV's in The Netherlands.

The follow-up study offers the opportunity to experiment, under strict conditions, with combinations with a maximum gross mass of 60 ton (allowed by Dutch law: 50 ton) and a maximum length of 25,25 meters (allowed by Dutch law: 18,75 meters). The follow-up study is a continuation of a previous experiment. The results of the first experiment were successful, but due to the small amount of participants (4) it wasn't possible to make generalisations to the national level about for example the accident risk, or the macroeconomic consequences of allowing LHV's in the Netherlands. This was the background for a follow-up experiment with a maximum of 100 companies or 300 LHV's who were allowed to participate on the basis of a release. To gain insight in the (generalised national) effects before the end of the experiment, the dataset as build up in November 2005 was analysed. This dataset refers to 66 companies and 100 LHV's.
In commission of the Advisory body Traffic and Transport (one of the six specialist services of the Ministry of Transport, Public Works and Water Management), ARCADIS Spatial planning & Environment en SEO Economic Research monitored the follow-up experiment. Mainly by the analysis of special forms but also by, among other methods, observation and interviews, insight is gained in the possibilities and potential limitations of allowing LHV's. The analysis is based on data collected in the period until December 2005.

Study questions
In this study the following questions were being examined:
1. What market size and –segment can be expected by releasing the present limitations regarding the number of participants and vehicles?
2. What are the consequences for the transport market of inter-modal transport in conducting the experiment's conditions?
3. Will the large scale use of LHV's influence the traffic safety (both subjectively and objectively)?
4. What will be the effects of the large scale use of LHV's on a macro level on environment (emission, noise), traffic (congestion, effective use of capacity, number of rides), costs (for labour, per ride and per freight unit) and competitive position?
5. What consequences do LHV's have in daily life for logistic (planning) processes?

Results
The outcome of the study is derived from the research questions formulated:
1. Depending on the level of the preconditions, 7 to 31% of the regular truck rides with a loading capacity of over 20 tons will be replaced by LHV's. With this in mind the potential number of LHV's ranges from 6 to 12 thousand. These LHV's will replace 8 to 16 thousand regular combinations. On balance, the number of combinations in the Netherlands will be reduced by 2 to 5 thousand. In the experiment, LHV-transport is used more for longer and heavier transport (68% of the mileages, 77% of the tonnekilometres) than for longer transport.
2. The introduction of LHV's causes only a limited modal shift. Transport by road increases 0,05 to 0,1%, depending on the preconditions by which LHV's are allowed. This decreases the inland navigation transport by 0,2 to 0,3% and rail transport by 1,4 to 2,7%.
3. Based on the experiment there is no reason to assume that a LHV has a higher safety

risk compared with a regular vehicle combination, partly because of the preconditions set in the experiment. Since LHV's reduce the number of mileages, the traffic safety can increase. As the number of mileages saved increases, the number of deaths and injuries will decrease proportionally. The expected decrease in fatal accidents amounts to 4 to 7 and the decrease of injuries to 13 to 25. During the experiment just one accident occurred. This accident was not related to the specific characteristics of LHV's. Due to the short duration of the experiment and the relatively small number of LHV's it was not possible to conduct a reliable accident analysis. Therefore a risk analysis has been conducted, based on accident typologies. The main outcome of this analysis is that risks can be managed sufficiently by the use of technical appliances. Points of attention for traffic safety are:

- The traffic safety of LHV's on other types of roads than used in the experiment (other roads than highways).
- The requirements set for drivers of LHV's. It is not recommended to relieve the strictness of the requirements on the experience of the drivers
- Enough line-up space (with respect to the length of LHV's) at intersections.
- The warning sign at the back of LHV's is difficult to understand for other road users.

4. The use of LHV's reduces the number of rides and thereby the total mileages of inland road transport. As a result the fuel consumption of LHV's is lower, compared to regular trucks in case they transport an equal amount of freight. This leads to a small decrease of emissions in exhaust gases and noise. Furthermore, the use of LHV's can reduce congestion by 0,7 to 1,4%. Finally, the cost price per mile for LHV's will increase with approximately 6,5%, but thanks to the reduction of the number of rides, the total cost reduce in road transport will amount to 1,8 to 3,4% (depending on the preconditions). The modal shift caused by the introduction of LHV's is merely limited.
5. The study shows that participants are able to fit in LHV's – with regard to logistics - flexibly. Big changes in logistical planning are not required. Some logistical innovations have been noted, but these do not cause big shifts in logistical processes.

A more detailed description of all the conclusions can be found in chapter 6.