Summary

Measuring Enforcement Activities

'In 2004, inspections prevented 107 fatal accidents and 1,889 injuries.'

This information comes from a report by the Federal Motor Carrier Safety Administration of the US Department of Transportation. In the Netherlands, it is not possible yet to show the effects of enforcement activities in this way. The study 'Measuring Enforcement Activities' (*Toezicht Tellen*) carried out by the Netherlands Institute for Transport Policy Analysis (KiM) for the Transport, Public Works and Water Management Inspectorate (IVW) shows that there are ways of measuring the effects of enforcement. By that the IVW gets a step nearer to a statement like the one above from the US DOT-report.

The IVW and safety

The IVW monitors road and rail transport, inland and ocean-going shipping, aviation and water management. It is essential that the IVW is able to measure the effects of enforcement activities so that it can account for its inspections, plan inspections and improve enforcement in general.

The IVW's contribution to transport safety is currently often expressed in terms of activities, such as the number of inspections or the number of licences granted. In order to measure the effects of enforcement activities, targets must be clearly defined. The targets can refer to final outcome, such as reducing the number of traffic accidents, or refer to so-called intermediate outcome, such as increased use of seat belts or less alcohol abuse. It is advisable to compare different indicators in order to obtain a balanced and comprehensive view of the effects of enforcement activities. For the number of road transport accidents, for example, it is useful to distinguish between the number of deaths, the number of injuries and the amount of material damage.

Methods used to measure effects

There are both quantitative and qualitative methods that can be used to obtain a picture of the effects of enforcement. The two methods compli-

ment each other. One method can serve as a 'reality check' on the results of the other and vice versa. This reality check makes it possible to draw more robust conclusions about the effects of enforcement.

In this study KiM looked for best practices abroad, especially for quantitative ways to measure the effects because those methods are not yet usual in relation to enforcement. Based on the most promising quantitative method revealed by this international comparison, KiM built a model to measure the effects of enforcement activities in relation to road transport. The model has been used to carry out test calculations. The model compares the number of accidents involving monitored transport companies to the number of accidents involving unmonitored companies. The initial calculations show that monitored companies are involved in fewer accidents after these inspections have taken place than the number of accidents where unmonitored companies are involved.

Options per sector

KiM explored the practical applications of this method for monitoring of passenger transport (busses and taxis), ocean-going shipping and airspace activities (air traffic control, special training for pilots and flying clubs). Whether the method can be applied largely depends on the availability of sufficient basic data, such as information about accidents per transport company, inspections per company and company characteristics. There are clearly options for measuring the effects in relation to final outcome for busses and taxis. This also seems probable as regards the monitoring of ocean-going shipping. For the monitoring of airspace activities, the options seem to be limited to intermediate outcome. KiM has identified a number of indicators for measuring the effects of enforcement activities in these sectors.

Predicting the risk of an accident

KiM has looked in more detail at the options of using effect measurements to plan enforcement activities. The key factor is then the extent to which the IVW can predict the risk that an accident will occur at a certain company. Research carried out in the US and the Netherlands shows that safety is linked to the number of times that a company has been involved in accidents in the past, to violations of regulations and to the company's safety policy. Based on this information, a company safety score can be awarded, from which the risk of an accident at that company can be predicted. This enables the IVW to focus above all on companies with a high accident risk. This tool is a useful addition to the IVW's current working method using risk analyses.

In theory, a planning tool can be developed which builds on the company safety scores. However, the details of the design still have to be worked out.

'Learning evaluations' in separate environments

Measuring effects of enforcement is complex and therefore cannot be achieved overnight. As a result, measuring effects can best be approached as a development process – a process of 'learning evaluations'. Measuring effects to experiment must be separate from measuring effects for accountability purposes. In a development environment mistakes must be made visible, because it is then possible to learn from the method used, to ensure that information is properly in order and to make effective agreements regarding the application of the results.
This is at odds with the aims of accountability in the planning & control cycle. The problem reduces with two separate environments.