

# **B. WORKSHOP - CONTRIBUTIONS**

## **1. BRIDGES BETWEEN POLICY AND RESEARCH**

Joop H.KRAAY

Ministry of Transport  
The Hague, The Netherland

### **1.1 INTRODUCTION**

ICTCT - or to give it its full name, International Co-operation on Theories and Concepts in Traffic Safety - seems to have found its way. After an initial period when conflict observation methods dominated the road safety issue, attention has now shifted to the broader aspects of transport policy. This is clear from the organisations' current programme, which includes the following:

- research contributions to the formulation of sustainable transport systems, including road safety aspects;
- raising matters such as the usefulness of conflict observation as a diagnostic and evaluation technique in the short term for existing and proposed infrastructural measures;
- the use of other methods of evaluating road safety measures, such as questionnaires, interviews and accident analyses.

Obviously, this new approach from ICTCT fits in better with the wider issues of transport policy. For this reason, I am delighted that you have asked me to talk about the Netherlands' transport policy in relation to the concepts of a sustainable society and a sustainable safe transport system.

### **1.2 EUROPEAN PROBLEMS**

Traffic has almost doubled in Western Europe over the last twenty years. Traffic jams are now the rule rather than the exception. Petrol consumption has gone up by a third, and diesel consumption has doubled. Air pollution has increased - smog is with us again - and more and more people have to put up with the constant din of traffic.

At the very least this undermines the quality of our society - at worst it costs lives.

The forecasts are not good either. If we do nothing about it in The Netherlands, there will be 70% more traffic by the year 2010. The United Kingdom expects 80 to 140% traffic growth

over the next thirty years. And in the Paris region, the next quarter century will see 21 million daily journeys increase to 28 million.

The rise in world trade, steady economic growth, the single European market, Eastern Europe throwing open its borders - all these mean more private cars and more commercial vehicles on Europe's limited road network.

Yet little progress has been made in tackling the growth in mobility and the traffic congestion it generates. I doubt if any European country would claim to have found a long-term solution to the traffic problem. True, advances in traffic management have improved road capacity and helped keep traffic moving, but this approach has its limits. It is only a matter of time before traffic management technology starts failing to keep pace with traffic growth.

In terms of road safety this is a calamity. Every year, 50 thousand people die on Europe's roads and more than 1 1/2 million are injured. The annual cost of this slaughter has been put at 250 000 billion guilders - more than the gross national product of Ireland, Portugal or Denmark.

Death and injury on the roads has to be seen as a major public health issue. Consider these statistics:

- one in three deaths in the age group 5-25 years is the result of a road accident;
- road accidents account for more lost years of life than heart and arterial diseases, and nearly as many as those lost to cancer;
- one in ten people injured in a road accident will suffer some degree of long term trauma;
- more than half of rehabilitated disabled people received their injuries in road accidents.

These figures are in stark contrast to safety records on other forms of transport. Rail or air travel is 100 to 200 times safer per kilometre than the private car. In all other areas of our lives where technology plays a part - from health and safety at work to protection from natural disasters - we design precautions against probabilities of death many times (sometimes thousands of times) lower than those we take for granted on the roads.

### **1.3 DUTCH PROBLEMS**

Good access to the principal Dutch mainports - Rotterdam Harbor and Schiphol Airport - is vital to their competitive position, and to the Dutch economy as a whole. Road transport is therefore a cause of great concern. Its quality and cost can make or break the Netherlands' claim to be the gateway to Europe; transport is one of the first things firms look at when they are thinking of opening an office or factory.

Road traffic has grown much faster than anyone could have predicted. Motorway tailbacks now threaten to strangle our economic centres. Congestion (especially in the Randstad) has become commonplace, as the road haulage industry expands even faster than private car use.

In spite of increasing expenditure on road safety, the decline in road accidents is slowing down. The law of diminishing returns is telling us that we have to find new ways to solve the problem.

## 1.4 TRANSPORT STRATEGY

Although The Netherlands is only a small country, the Dutch have plenty of ideas when it comes to changing current thinking about transport - you only have to look at the concept of the Woonerf in The Netherlands. Given our geography and location relative to the rest of Europe, it is in the Netherlands' interest to find solutions to European transport problems. This also means striking a balance between individual freedom, mobility and the quality of life, one aspect of which is road safety.

The yardstick for the Netherland here is the concept of the "sustainable society". The sustainable society provides for the needs of the present generation without damaging the ability of future generations to provide for theirs.

This presupposes a transport system that is not going to bequeath a legacy of environmental problems to future generations.

And that calls for some courageous political decisions. It means setting limits on the adverse effects of traffic, while simultaneously guaranteeing efficient transport. This delicate balancing act can only be maintained if we modify mobility patterns and adopt stringent traffic management. Accordingly, The Netherlands has opted for the following approach up to the year 2010:

### Step 1 - Tackling the sources.

Vehicles will have to be as clean, as economical, as safe and as quiet as possible. Limits must be set on road building and car access to urban areas and areas of natural beauty. The measures being taken include promoting catalytic converters for private cars and cleaner and quieter engines for lorries and buses; making road surfaces quieter; enforcing speed limits more strictly and designating more 30 kph zones in cities and villages; providing better urban and regional public transport; and replacing roads with cycle tracks in scenic areas.

### Step 2 - Planning for mobility.

The number of kilometers driven by private motorists and businesses has to be reduced. Planning measures must stem the current trend of commuting ever greater distances. Public transport has to be good and private car travel has to be more expensive.

Among the measures being developed here are: incentives for new businesses to locate close to public transport; experiments with teleworking; road tax surcharges in the rush hour to encourage private drivers to live closer to work or use public transport; less free parking in urban areas and at the workplace; urban renewal plans that discourage cars and promote alternatives; mandatory transportation plans for companies with more than 5 000 employees; and new legislation on the carriage of dangerous goods.

### Step 3 - Improving the alternatives.

Measures here include better public transport and passenger information; better infrastructural provisions for cyclists, including cycle lock-ups; promotion of carpooling; more comfortable and more frequent rail services; and shorter journey times on public transport.

### Step 4 - Selective access by road.

New roads will only be built where necessary to maintain the Netherlands' strong position in the distribution industry. In congested areas, special lanes are being provided for commercial vehicles, people who car-pool, and buses. Other measures include dynamic traffic management for main roads; electronic route guidance systems; more rampmetering; and allowing buses to use the hard shoulder.

Step 5 - Strengthening the institutional framework.

We have to do more too in related areas - publicity campaigns, administrative measures, finance, enforcement and research. The Netherlands government is working with interested parties to develop a marketing plan, to achieve better enforcement rates for traffic violations, and to evaluate more accurately the measures being taken.

The important point here is that this is proactive policy, anticipating rather than responding to transport developments. The objectives of the strategies and measures set out in the resulting Netherlands transport policy should be achieved by the year 2010.

## 1.5 ROAD SAFETY

Dutch policy is to reduce private car use, and this will help improve road safety. The aim is to increase the number of journeys people make by public transport or bicycle rather than by car. These preferred forms of transport have therefore to be safe.

The concept of the sustainable society embraces road safety too. It is simply not acceptable for us to bequeath our massive rate of road deaths and injuries to the next generation. We have to try to build roads which reduce the risk of accidents - or at least the most serious accidents.

This requires a whole new approach. Reducing accident rates and creating conditions to eliminate the most serious accidents is not feasible with our present road traffic systems. Sustainable road traffic - in the sense of safe road traffic - can only be achieved by applying the same kinds of standards we apply to other technical systems - nuclear power, oil refineries, air and rail transport for instance. The premise here is that road safety - or rather the lack of it - is a variable which we can change, not a constant fact of life.

The road user is central to any notion of sustainable road traffic. Road traffic, therefore, needs a road infrastructure designed to take account of human fallibility, and vehicles to simplify the road user's task and to offer maximum protection. Road users need to be better trained, better informed and, where necessary, more strictly controlled.

In operational terms, these general ideas about safety and sustainability translate into three principles:

- Prevent unintentional road use, i.e. journeys that are not strictly necessary by road transport or by that particular roadtype.
- Eliminate potentially dangerous conflicts between different categories of road user by keeping apart traffic of different speed, weight and direction.
- Improve traffic predictability and driving behaviour by removing uncertainty on the part of the road user.

What, then, would our sustainable safe road system look like? In the first place, every road would be assigned a particular function and be designed for maximum safety for that function. We envisage three functional categories: roads carrying fast through traffic performing a flow function; a link function to allow vehicles to reach given areas; and a function for staying and giving access to roadside destinations while ensuring that the street remains a safe place for pedestrians and bicyclists.

Road design must conform to the function assigned, with mixed-function road being eliminated altogether.

Each function would preferably be characterised by a distinctive design, so that there could be no confusion in the minds of road users. This could only work if the number of road categories based on function and safety criteria were strictly limited. Access points for each of the different categories would also need to be immediately identifiable by drivers, by having road markings and signs unique to that road category. Distinguished speed limits would also apply to each category.

These principles are comparatively easy to apply at either end of the road category spectrum - on the motorway or in the 30 kph residential areas. It is the bits in between that are the problem - the urban arterial roads of 50 kph and the 80 kph roads outside built-up areas. Here, numerous discontinuities mean greater accident risks and here all kinds of traffic use the same road space at a whole range of different speeds.

In vehicle design too, improvements are needed not just in passive safety (reducing the effects of an accident) but mainly in active safety (devices to warn the driver and improve his ability to take avoiding action).

Clearly, road must be designed to foster safer behaviour on the part of road users. But road users are people, and this is the crux of the road safety issue. Road users must be trained properly, whether they are pedestrians, cyclists, motorcyclists or drivers. There will always be a need to educate different road users.

The Dutch Institute for Road Safety Research SWOV states that the number of road deaths can be reduced considerably by the year 2010. This falls short of the ideal if we adopt a policy of sustainable safety. We could have safe roads in 30 years by adding the new safety features to the normal road building and maintenance programme. According to SWOV, this would bring road deaths down to 10% and injuries to 20% of their present figures, assuming a 35% growth in traffic between 1986 and 2010.

Another prerequisite for our sustainable safe road system is that the public supports it, not just the politicians. This means co-operation between different levels of administration and the whole range of interest groups. The Minister of Transport took a lead here recently in June when she accepted the jointly formulated recommendations of the country's research institutes concerning the approach to a sustainable and safe road traffic system.

The striking thing here is that in The Netherlands it is the research world that is shaping the new sustainable transport policy (albeit at the behest of the Ministry), rather than outline policy coming from government first and the details being filled in later. If nothing else, this demonstrates closer links between policy-makers and researchers, that have always had something of a love-hate relationship in the past.

Research and experimental work is producing the policy, and specific measures then appear in regional transport plans. The Netherlands has recently been divided into 26 Transport Regions, geographical units with common transport characteristics. In an organisational sense, the regions serve as the forum for government and industry to work together on an integrated regional traffic and transport policy. Regions draw up their own transport plans, designed to curb car use, promote the alternatives and still achieve the greatest degree of accessibility. Plans therefore cover the most appropriate forms of public transport, transportation plans for companies, road improvements, carpool facilities, parking policy, cycling facilities, and provisions for road freight.

Obviously for ICTCT, looking at road accident prevention, research into the traffic processes involved is going to be more fruitful than a study of road accidents themselves. Analyses of accident black-spots - a retroactive approach which smacks of treating the symptoms, not the disease - is becoming much less popular. Conversely, studies of traffic behaviour in a spatial environment now carry more weight. In The Netherlands, policymakers and researchers now give special weight to the new research into subjects like patterns of mobility, town planning, road design and telematics in relation to their effects on traffic behaviour.

## 1.6 TRANSPORT POLICY OBJECTIVES

But in The Netherlands, we do not just think in terms of long-term policies and strategies. We have already gone as far as setting a number of detailed targets for the years 1995 and 2010. For full details of these, I refer you to our Transport Structure Plan 1992 Action Book, but the most important are the following:

- Reducing to 35% the 72% growth in car traffic predicted for 1986-2010;
- 20% reduction in the 1986 level of NOx emissions from private and commercial vehicles by 1995, and 75% reduction by 2010; NOx is a major cause of acid rain.
- 20% reduction of CO2 emissions per vehicle kilometre by the year 2010; CO2 is a major cause of the greenhouse effect.
- Vehicle noise standards will be tightened by at least five decibels.
- Road deaths should be reduced by 15% by 1995 (based on 1986 figures) and by 50% by 2010. Targets for reductions in the number of road injuries are 10% and 40% by the same dates.
- Regulations for the carriage of dangerous substances will be maintained at least at current levels.
- From 1995, all major new residential developments must have high quality public transport. From 1992, planning regulations already require new businesses to locate close to public transport.
- From 1995, new regulations will restrict the number of parking spaces available at work from 10 to 40 spaces per 100 employees, depending on the location.
- Urban redevelopment schemes will seek to discourage the motor car with measures like 30 kph zones, roundabouts and speed reduction devices (in this area, ICTCT can apply its

- diagnosis and evaluation techniques).
- Pricing structures will favour public transport at the expense of the private car.
  - Main roads from the principal ports will only have a 2% probability of a traffic jam in 2010, and other trunk roads a 5% probability.
  - Cities will have short, safe and attractive cycle routes; a complete public transport "product" incorporating the bicycle is being developed. (This is also an area of concern for ICTCT).
  - The Netherlands is working towards a European-level structure plan.

## 1.7 POLICY EVALUATION

The Netherlands governments is committed to policy impact reporting. All the government departments involved are expected to describe their policy targets in quantifiable terms, so that progress can be measured. Differences between actual and targeted performance can then be used to modify the measures being taken.

So we do not stop at good intentions - we have a monitoring system as well. After all, we need to know what is happening in transport and why. For instance, are there external factors affecting a particular observed development, or is it the result of measures we have taken?

Better information increases policy effectiveness, and for this we are collecting ever more data on people and vehicles. But our analysis is still not sophisticated enough always to be able to say whether we have achieved a particular goal with a particular policy. This is one area where ICTCT might benefit from developing a methodology for assigning measured impacts to given policy measures. Ideas from ICTCT in this area are always welcome.

## 1.8 CONCLUDING REMARKS

To conclude, our vision of the transport systems of the future is slowly taking shape. Road safety is already an integral part of this thinking, and is a central policy issue at the Ministry of Transport.

Much of the new policy is already being put into practice, or is being prepared. Objectives and tasks are constantly being updated as plans are implemented, but always on the lines of the Transport Structure Plan.

ICTCT can make a contribution here with its expertise, especially in diagnostics and evaluation. I believe as well that ICTCT could broaden the scope of its work, as governments become more willing to have their policies evaluated, as it is the case in The Netherlands.

It is still true to say that, as a rule, too little use is made of expert knowledge when we draw up policy plans. The question then is how to arrange for all the expertise held by ICTCT partners to be made available to people planning transport at national, regional and local government level. ICTCT can support us with research contributions for the formulations of a sustainable safe transport system.

The Netherlands would like to start work now on a European transport plan, using the experience it has gained with the concepts of a sustainable society and sustainable safe transport. But a single country cannot tackle that; Europe-wide support is essential.

The Earth Summit in Rio de Janeiro failed to get the rich countries to agree to sustainable use of raw materials and less environmental pollution. In European transport policy, we hope to go further than Rio. Too ambitious? I do not think so.

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