



**SUMMARY AND PUBLICATION OF BEST PRACTICES
IN ROAD SAFETY IN THE MEMBER STATES**

**THEMATIC REPORT:
INSTITUTIONAL ORGANISATION OF ROAD SAFETY**

THE FINAL REPORT OF SUPREME CONSISTS OF 14 PARTS:

PART A	METHODOLOGY
PART B	LIST OF MEASURES COLLECTED AND ANALYSED
PART C	BEST PRACTICES IN ROAD SAFETY HANDBOOK FOR MEASURES AT THE COUNTRY LEVEL
PART D	BEST PRACTICES IN ROAD SAFETY HANDBOOK FOR MEASURES AT THE EUROPEAN LEVEL
PART E	REVIEW OF IMPLEMENTATION AT THE COUNTRY LEVEL
PART F1	THEMATIC REPORT: EDUCATION AND CAMPAIGNS
PART F2	THEMATIC REPORT: DRIVER EDUCATION, TRAINING & LICENSING
PART F3	THEMATIC REPORT: REHABILITATION AND DIAGNOSTICS
PART F4	THEMATIC REPORT: VEHICLES
PART F5	THEMATIC REPORT: INFRASTRUCTURE
PART F6	THEMATIC REPORT: ENFORCEMENT
PART F7	THEMATIC REPORT: STATISTICS & IN-DEPTH ANALYSIS
PART F8	THEMATIC REPORT: INSTITUTIONAL ORGANISATION OF ROAD SAFETY
PART F9	THEMATIC REPORT: POST ACCIDENT CARE

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PROJECT MEMBERS























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	ÖRK Austrian Red Cross	AT		SWOV Institute for Road Safety Research	NL
	IBSR-BIVV Institut Belge Pour La Sécurité Routière	BE		TNO Business Unit Mobility & Logistics	NL
	CDV Transport Research Centre	CZ		DHV Group	NL
	DTF Danish Transport Research Institute	D K		TØI Institute of Transport Economics	N O
	DVR Deutscher Verkehrssicherheitsrat e.V.	DE		IBDIM Road and Bridge Research Institute	PL
	CERTH/HIT Hellenic Institute of Transport	EL		PRP Prevenção Rodoviária Portuguesa	PT
	FITSA Foundation Technological Institute for Automobile Safety	ES		SPV Slovene Road Safety Council	SI
	INRETS Institut National de Recherche sur les Transports et leur Sécurité	FR		VÚD Transport Research Institute Inc.	SK
	NRA National Roads Authority	IE		bfu Schweizerische Beratungsstelle für Unfallverhütung	C H
	SIPSiVi Italian Society of Road Safety Psychology	IT		VTT Technical Research Centre of Finland	FI
	ETEK Cyprus Scientific and Technical Chamber	CY		VTI Swedish National Road and Transport Research Institute	SE
	SIA Road Traffic Research Ltd.	LV		TRL Limited	U K
	TRRI Transport and Road Research Institute	LT		CIECA Commission Internationale des Examens de Conduite Automobile	IN T
	KTI Institute for Transport Sciences	H U		ETSC European Transport Safety Council	IN T

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Introduction

1 The SUPREME project

The objective of the SUPREME project is to collect, analyse, summarise and publish best practices in road safety in the Member States of the European Union as well as in Switzerland and Norway, with a view to implementation in as many partner states as possible. By making the study results available to a broad target audience across Europe – and thereby encouraging the take-up of successful strategies – the project wants to contribute to reaching the 50% reduction target of road fatalities, which the European Commission set in its White Paper "European transport policy for 2010: time to decide" (2001).

Analysis, synthesis and further selection of collected data were carried out along nine categories of measures and covers all areas of road safety work.

1. Education & Campaigns
2. Driver Education, Training & Licensing
3. Rehabilitation and Re-Licensing
4. Vehicles (incl. ITS)
5. Infrastructure (incl. ITS)
6. Enforcement
7. Statistics & In-depth Analysis
8. Institutional Organisation of Road Safety
9. Post Accident Care

In order to avoid overlapping between these categories, a detailed list of subcategories and – in some cases including even sub-subcategories - has been provided.

Accordingly, nine "Thematic Reports" (of which one is the volume in front of you) shall give a detailed description of best available practices for each of these categories, featuring basic characteristics such as target groups, quantitative and qualitative goals, key issues, duration of implementation and effects, coverage, costs, actors involved, implementation procedures as well as **key success factors** and potential **implementation barriers** in other countries or at the European level.

The crucial task of the project lies within the sound **identification of best practice** from the vast amount of available measures. In order to facilitate this process, a set of tools for collection, classification, selection and ranking of measures has been developed, along with guidelines for the assessment process at country level. As the common basis of all further activities, a list of eight best practice criteria was developed and transferred into a questionnaire. While the major part of this questionnaire consisted of a common set of core elements, some questions also addressed key features for each category.

On this basis, the SUPREME network of "Country Experts" has provided information from various stakeholders in cooperation with the respective Analysis Group members. Although 227 questionnaires have been completed, not all subcategories of road safety measures have been addressed. So this is the first step of data collection.

As an additional step, a list of road safety measures that had not been covered by questionnaires but were considered potential best practices by the SUPREME consortium, was compiled. Additional

information was gathered from available scientific literature and earlier European projects. This extended list of potential best practices was the starting point for the second step of selection and analysis within each of the nine Thematic Reports.

Further SUPREME activities

Based upon these findings, 27 country surveys will be produced. The current status of implementation of best practice measures as well as implementation barriers shall be addressed and necessary steps shall be outlined.

Further, two separate handbooks will be provided, one for the European level (European institutions, international organisations, global industries) and one for the Country level (Ministries, regions, local level: stakeholders, policy makers, practitioners and the interested public).

For more information about the SUPREME project and latest results, please visit the SUPREME website, which is http://ec.europa.eu/transport/supreme/index_en.htm.

2 Best Practice in Institutional Organisation of Road Safety

Institutional Organisation of Road Safety aims at providing a basis for the implementation of safety measures on all fields of road safety. Measures in this category of the SUPREME project are related to the general organisational framework, visions, targets, and strategies, provision and allocation of financial resources, and tools and strategies for the selection and implementation of measures. Activities in this area are for the most part integrated in the political and administrative systems of the countries.

Best Practice (BP) measures in this category are measures which, in the given context, improve road safety by supporting the implementation of safety measures which are effective in reducing accidents in the short, medium or long term.

A set of criteria for the evaluation of BP measures has been developed in the SUPREME project. These criteria are applied to measures in all nine categories. For the evaluation of measures in the category Institutional Organisation of Road Safety the criteria are defined as follows:

Focus of the measure: The first criterion for BPM in the area Institutional Organisation is that measures have a clearly defined focus. This may be a specific types of accidents or risk factors, as for other types of road safety measures. A clearly defined focus must be a precise idea of how the measure is expected to affect road safety, for example by describing procedures, assigning responsibilities, or defining decision criteria.

Size of the road safety problem: This criterion is relevant for organisational measures which aim at reducing the number of a specific type of accidents or accident contributing risk factors and indicates a large potential for increased efficiency in reducing the particular problems addressed. BPM measures aim at reducing accidents or risk factors which stand for a large proportion of severe injuries and fatalities in road accidents.

Evaluation of processes and effects: BPM are effective in improving road safety. The assessment of this criterion requires an estimation of expected effects. An evaluation of effects on road safety is ideally based on an assessment of the effects on numbers of accidents and injuries. Since Institutional Organisation measures only have indirect effects on road safety, often over long periods of time, this type of assessment will in most cases not be feasible. An evaluation of effects may also be based on a process evaluation. This requires a clearly defined focus of the measure as described in the first criterion. Accordingly, a process evaluation may focus on how much influence the measure has in practice on the implementation of effective road safety measures. This includes the degree to which procedures are followed, how responsibilities are assumed in practice, how funds are allocated, etc. If these types of evaluation are not available, an assessment of the effectiveness may be based on a qualitative assessment of the measure, or on previous studies and experiences with similar measures in the same or other countries.

Costs and benefits: The benefits of BPM exceed their costs. A cost-benefit analysis is in most cases not possible for Institutional Organisation measures. They are mostly integrated parts of other measures, which makes the assessment of their costs difficult or impossible. They are also meant to support other measures, which makes it difficult or impossible to evaluate their part in the effect on accidents. An analysis of costs and benefits will therefore as far as possible be based on rough estimates or on qualitative assessments.

Acceptance: The criterion acceptance refers to acceptance by the public, by road user, policy makers, and other stakeholders (e.g. automotive industry). Other relevant issues can be political, legal, financial, technical and administrative aspects.

Sustainability: Sustainability refers both to the durability of the measure and to long-term effects on accidents. An organisational measure can be considered sustainable when it can function in the long term, when is not likely to be repelled while it is still working, and when its effect is permanent and does not decrease over time.

Transferability: Transferability includes prospects for using the measure successfully in other countries or regions, or on a larger scale. This refers to the measure as a whole, or to the basic idea of the measure, on how it influences the implementation of effective road safety measures, or on how it directs other measures, institutions towards effective road safety work.

Overview

3 Studies on Institutional Organisation of Road Safety on a European or global level

Measures in field of Institutional Organisation of Road Safety as defined in this report have been studied in OECD countries by OECD expert groups, although not recently¹. These studies evaluated the first attempts, mostly by European countries, at organising intersectoral road safety management at the national and the local levels, and at programming road safety to achieve quantitative targets, and they provided recommendations.

Some studies and analyses have been conducted more recently on a European level which refer indirectly to institutional organisational measures for road safety.

OECD² has evaluated the progress of all member countries in reducing the numbers of fatalities in road accidents. Surveys in 39 countries have investigated the main accident contributing factors and analysed in which areas there is most need for improvements. A lack of political will and coordination has been identified as one of the key road safety problems. It has been noted that such aspects generally receive little attention. The final report which addresses successful implementation of road safety strategies will be published first in 2007.

The **task force on road safety of the working party on accidents and injuries**³ has given recommendations to the EC how the issue of road safety from a public health point of view can be supported by DG SANCO. Recommendations concerning Institutional Organisation of Road Safety are the identification of stakeholders in order to facilitate EU-wide actions, and the promotion of national road safety plans which include cooperation between the transport and public health sector. It is also recommended to integrate road safety issues in the public health agenda. This might be done by the national health administrations which set guidelines and legislation for financing health promoting activities.

The **WHO** has analyzed causes and implications of road traffic injuries on a global level⁴. It concludes that road safety policy should adopt a view of road traffic injuries according to the following principles:

- ◆ Road safety is a multisectoral issue, a public health issue, and a social equity issue.
- ◆ Road accident injury is largely preventable. Errors should not lead to death or serious injuries.
- ◆ The implementation of local solutions needs to be based on local knowledge.

¹ OECD, 1984: Programmes intégrés de sécurité routière. Felrice, Ephraim, Jorgensen et al, rapp.; OECD, 1990: Gestion intégrée de la sécurité routière en zone urbaine. Dijkstra, Lynam, Muhrad, Salmivaara, Wouters, rapp.; OECD, 1994: Programmes ciblés de sécurité routière. Wegman, Elvik, Lynam, Ojajarvi, Schelling, Gorrikan, ed.

² OECD, Working Group on Achieving Ambitious Road Safety Targets. Country surveys on road safety performance. July 2006.

³ Kisser, R., Körmer, C. and Sector, Mathilde. Actions for the public health sector to improve road traffic safety. Final statement March 2005. Task force on road safety of the working party on accidents and injuries (Public health programme 2003-2008). 2005.

⁴ World Health Organisation (WHO). World report on road traffic injury prevention. Geneva, 2004.

The EU-project **PROMISING** has investigated how the safety of vulnerable road users might be improved. One of the main conclusions is that transport planning usually does not take into account these transport modes (pedestrians, cyclists, and motorized two-wheelers). This leads to infrastructure and legislations that are mainly adjusted to requirements of cars. Solutions are, beside specific safety measures, transport policies which take into account mobility requirements and non-motorized transport alternatives on a broader basis than individual motorized transport. These principles are taken into account in some of the measures that are described in this report.

Organisational aspects of road safety are also an important topic in the **Swedish report on recommendations for development aid**⁵. The recommendations include the adoption of a multidisciplinary approach and to involve as many different actors as possible in road safety work. This includes central and local governmental and non-governmental organisations, decentralization, and the creation of centres of excellence. It is also recommended to provide a systematic human resources management and knowledge management. In each country a leading agency should be identified in order to facilitate coordination within and between countries.

4 Measures within Institutional Organisation of Road Safety on a European level and in non-EU countries

Some of the measures that will be presented in this report have counterparts on a European level. These will be referred to in the descriptions and evaluations of the measures in European countries in the Chapter Description and analysis of Best Practice Measures of this report. These measures can be found in:

- ◆ **The European Road Safety Action Programme**⁶ which describes the principles of Vision Zero and relevant safety measures. The programme is the basis for development of the European Road Safety Charter, the White Paper, and the European Road Safety Observatory.
- ◆ **The White Paper** of the EU in which the goal to reduce the number of fatalities in the EU by 50% is described⁷.
- ◆ **The European Road Safety Charter**⁸ which is an appeal to civil society organisations to contribute to increasing road safety in Europe. Activities are for example road safety awards, conferences, and campaigns.
- ◆ **The European Road Safety Observatory**⁹ which has the aim to collect and document statistics and knowledge on accidents and accident contributing risk factors.

⁵ Elsenaar, P. and Sahlin, Å. Institutional sustainability and capacity development within sida financed road safety projects. Department for Infrastructure and Economic Co-operation: Sida-evaluation 05/29. 2005.

⁶ http://ec.europa.eu/transport/road/roadsafety/rsap/index_en.htm

⁷ European Commission. White Paper European transport policy for 2010: Time to decide. 2001.

⁸ http://ec.europa.eu/transport/roadsafety/charter/index_en.htm

⁹ <http://www.erso.eu/>

- ◆ **The Road Safety Action Plan in New Zealand**, which aims at coordinating road safety activities between different levels and actors, and at directing road safety work more effectively toward safety targets by providing targets and incentives.

5 Potential Best Practice measures in EU countries

Information on potential BP measures in EU countries has been collected in the SUPREME project with a questionnaire that has been used for all 9 categories of measures. The questionnaire contains questions about all criteria for BP that have been described in Chapter 2 Best Practice in Institutional Organisation of Road Safety. Some modifications were made to the questions in order to adjust them to the category Institutional Organisation of Road Safety. All questions in the questionnaire can be found in Annex 2. Each of the country experts in the SUPREME project was asked to provide measures from her country that conform to the above defined criteria for BP. Altogether 28 proposals for BP measures from 13 countries have been received. The measures in this category are divided into 6 subcategories:

- ◆ Road safety visions and targets
- ◆ Road safety plans and programmes
- ◆ Efficiency analysis
- ◆ Resource allocation processes
- ◆ Formal coordination mechanism for road safety policy
- ◆ Incentive schemes.

Proposals for BP measures were received for each subcategory. An overview of all measures is given in Table 1, all measures are summarized in Annex 2. Each measure is evaluated according to the criteria described above. The evaluation of the measures is described in more detail in the following Chapter. The most important criterion is the evaluation of processes and effects. In order to give a comparative overview of all measures the BP potential of each measure is assessed as being large, medium, or small. Accordingly, each measure is assigned one, two, or three stars (*, **, ***):

*** **Large BP potential:** There is (empirical) evidence that the measure has large positive effects on road safety, and that the effects are achieved with a reasonable amount of resources. There are no substantial undesirable side effects.

** **Medium BP potential:** It is likely that the measure has a positive effect on road safety or supports the implementation of effective road safety measures. However, a formal and thorough evaluation has not been conducted, or there are factors which may limit the effectiveness, or the measure is associated with relatively high costs. These drawbacks are likely to be overcome by some improvements of the measure.

* **Small BP potential:** It is not possible to estimate to what degree the measure has a positive effect on road safety or supports the implementation of effective road safety measures. This may be because an evaluation has not been conducted or has yielded equivocal results, or because there are

factors that are likely to limit the effectiveness. The measure is all the same regarded as BP because it is based on an idea or an approach that is promising for safety improvements.

It is to be noted that measures addressing road safety organisation and management are the least documented. This may be due to several reasons. Road safety management is seldom in itself a research topic as it raises political issues and is not easy to evaluate. Measures with a direct impact on accidents and injury figures are evaluated often without due attention to the necessary conditions to implement them and to actual implementation processes. Road safety management measures are largely based on empirical evidence and needs which differ from country to country according to the political and administrative situation. Finally, decisions on road safety management which may have a political importance are often presented with precautions, which does not provide a clear enough idea of their focus and expected way of functioning. Few countries actually evaluate their organisational changes in a systematic way. As a consequence, data collection as carried out in this project could not be expected to yield complete information from all countries.

Road safety visions and targets	
- Visions	
Netherlands: Sustainable Road Safety ⁽¹⁾	***
Sweden: Vision Zero	***
- Targets	
Finland: National safety goal for 2010	***
Austria: Visions and quantified goals in the Austrian Road Safety Programme 2002-2010	*
Road safety plans and programmes	
Switzerland: Federal Action Programme for Greater Road Safety (Via sicura) ⁽¹⁾	***
Finland: National road safety action plan ⁽¹⁾	***
Norway: National Transport Plan ⁽¹⁾	***
Netherlands: Start-up Programme for sustainable safety	***
Spain: Catalonian Road Safety Strategy (incl. Special Traffic Safety	***
Denmark: National Action Plan for Road Safety	**
Poland: National Road Safety Program	*
Efficiency analysis	
- Impact assessment	
Norway: Handbook for Road Safety Measures ⁽¹⁾	***
Finland: Evaluation of road traffic safety measures ⁽¹⁾	***
- Cost-benefit analysis	
Finland: TARVA, safety evaluation programme of road improvements ⁽¹⁾	***
- Road safety observatories	
Spain: National Road Safety Observatory	**
Resource allocation processes	
- Resource allocation according to efficiency criteria	
Belgium: Road Safety Fund ⁽¹⁾	***
Austria: Austrian Road Safety Fund	**

- Resource allocation to support priority strategies	
France: Incentive programmes for local authorities	***
Netherlands: Stimulation Plan "actie -25%"	*
Formal coordination mechanism for road safety policy	
- Advisory councils on a national level	
Belgium: Federal Road Safety Commission	***
Slovakia: Council of the Government of the Slovak Republic on Road Safety	*
- Decentralised coordination mechanism	
Netherlands: Decentralization policy	***
Switzerland: Safety delegates	**
Germany: Local accident commissions	**
- Thematic coordination mechanism	
Austria: Task group "On foot" in Vienna	***
Safety incentive schemes	
Netherlands: Improving driving behaviour of motorists by rewarding	**
(1) These measures are recommended for the European and National Handbooks	

Table 1: Overview over submitted potential BP measures

Description of the selection process

This chapter describes the evaluation of the potential BP measures in the category Institutional Organisation of Road Safety according to the 7 BP-criteria. For each of the criteria a general description is provided of how the criterion is applied to institutional organisational measures, how important it is in the evaluation of measures, and characteristics of measures or subcategories are discussed with respect to each of the criteria.

6 Focus of the measure

Most measures do not focus on specific accidents or risk factors, but aim at improving road safety work as a whole or specific aspects of road safety work (visions and targets, plans and programmes, most formal coordination mechanisms). Such measures have a clearly defined focus when they include descriptions and guidelines for how they intend to improve road safety, and how their effectiveness can be evaluated. Efficiency analysis and resource allocation processes focus on more specific safety problems. Measures that focus on accident contributing risk factors are for example the road safety funds in Belgium and in Austria, the Local Accident Commissions in Germany, and the Dutch rewarding system for individual drivers. Measures aiming at reducing a specific type of accidents are for example the Task Group “On foot in Vienna” and the Local Incentive Schemes in France. In general, measures with a precisely defined focus include goals and standards which make it possible to conduct targeted actions and against which processes and results can be evaluated.

Measures with a clearly defined focus can be expected to be more effective than measures without a clearly defined focus. A clearly defined focus can be defined in terms of types of accidents or risk factors, or in terms of goals and processes.

7 Size of the road safety problem

This criterion includes the statement that BP measures aim at solving large safety problems. However, on the field of Institutional Organisation of Road Safety, the focus is in most cases not a specific type of accidents, but certain aspects of road safety work or risk factors which are seen in a larger context. Therefore, larger problems (such as for example the largely absent organisation of the road sector in Poland) require more complex measures. The more complex a measure is, the less precisely will it be able to direct its actions effectively and in a coordinated way. This may result in little effectiveness. All the same, large problems are important to solve. Also “small measures” can be very effective, like for example the Task Group “On foot in Vienna”. This measure not only effectively reduces accidents, it also improves mobility and the climate in the town. Smaller measures are less complex and will therefore face less coordination problems and less conflicts among goals and resources. A specific focus as described in the previous section is therefore more important in the evaluation of measures than the size of the road safety problem that is addressed by a measure.

Measures addressing larger problems can achieve larger accident reductions but are more complex and more difficult to implement and evaluate. Measures addressing smaller problems are less complex and therefore more likely to achieve their goals.

8 Evaluation of processes and effects

The evaluation of processes and effects is the most central of the criteria for evaluating BP road safety measures. An evaluation may focus on effects on accidents or on the implementation and realization of a measure. Ideally, an evaluation is conducted on a sound empirical basis with well documented results. Unfortunately, on the field of Institutional Organisation of Road Safety formal evaluations are usually more complex and more difficult to conduct than for most other road safety measures.

Evaluations of Institutional Organisational measures on accidents are for the most part not available. Most measures are conducted on country level (or on a local level, but in the whole country). It is therefore often not possible to conduct methodologically sound studies to investigate the influence of measures on accidents, and changes can not reliably be attributed to the measures. For some measures the effectiveness to reduce accidents can be estimated based on the risk factors that are addressed or based on the types of accidents the measure aims to prevent. Measures that address important risk factors (such as speeding, DUI, and non-use of seat belts) or safety measures that are known to be effective (such as certain infrastructure and enforcement measures) can be assumed to be more effective than measures which address less important risk factors or measures. All the same, the effect on accident remains difficult or impossible to evaluate.

Process evaluations evaluate if the measure is implemented according to the initial intentions, and if it leads to the intended changes (e.g. increased implementation of a specific type of safety measures). Results are valid indicators for the effectiveness of the measure if the measure itself focuses on relevant aspects of road safety (e.g. on the lack of implementation of an *effective* type of safety measures). Some evaluations focus on the degree of public or political acceptance for the measure. These are relevant indicators for measures where public or political acceptance are relevant for the effect on accidents, for example because they influence how much money is spent.

More comprehensive measures like road safety plans or observatories can contain process evaluations as an integral part. Road safety observatories have the aim to monitor changes in accident risk, and they can be useful for the follow-up of national safety strategies as is the case for example in Spain. In Finland the national action plan for road safety has defined specific responsibilities not only for the implementation of safety measures, but also for the monitoring of progress towards the goals.

Evaluations of institutional organisational measures are methodologically challenging and seldom available. Process evaluations can be an integral part of institutional organisational measures.

9 Costs and benefits

Besides evaluation of processes and effects a central criterion for the evaluation of Institutional Organisational measures is the relationship between costs and benefits. BP measures are supposed to be associated with costs that are lower than their benefits. If a reliable analysis of costs and benefits is not available, as is the case for most measures in the category Institutional Organisation of Road Safety, the costs should at least seem reasonable in relation to the benefits. How this can be assessed depends on each individual measure.

A formal cost-benefit analysis has been conducted for only one of the measures in this report, the Swiss Federal Action Programme for Greater Road Safety (Via sicura). For visions and targets, for long-term road safety programmes, and for formal coordination mechanism for road safety policy costs and benefits are difficult or impossible to assess. The measures are integrated in other measures or institutions, or require cooperation between many different participants, none of whom has a budget which is dedicated specifically to the measure in question. Benefits are equally difficult to quantify because effects can not be measured directly, or because they are not attributable to the measure. Some measures also have effects on other factors than road safety, for example the Norwegian National Transport Plan which aims at improving the whole transport sector according to large variety of different targets (one of them improved road safety). For such measures, it is not possible to estimate what proportion of the total costs (if it were possible to estimate these) is spent on road safety.

Measures which are summarized under efficiency analysis and resource allocation according processes, are less widely defined, and their effects on accidents are less complex. These measures have in common, that they aim at achieving “more safety for less money”. This makes them candidates for positive benefit-cost ratios, but again, this has not been quantified, and no quantitative comparison between these measures is possible.

Benefit-cost analysis as a measure is only seldom applied. This may reflect the difficulty of assessing costs and benefits in monetary terms, but also the focus of most road safety policies. A study in Norway¹⁰ showed that funds are distributed between counties mostly according to engineering standards and so as to achieve equilibrium between counties, but not according to an economic utility model, where the aim is to optimize the total effects. Additionally, administrative structures of governments usually do not support the use of benefit-cost analyses, where the aim is a best possible total effect. The costs for the prevention of accidents and the costs for the consequences of accidents are borne by different parties. While most safety measures are paid by different levels of the government (road sector), accident costs are paid by road users, by the health sector, and by the social security system¹¹. Due to this imbalance, measures that are cost effective if all benefits and costs are considered, may be cost ineffective for those who bear the costs (but do not profit from the benefits). Some of the Institutional Organisational measures aim at reducing this imbalance. These are mainly

10 Elvik, R. Explaining the distribution of State funds for national road investments between counties in Norway: Engineering standards or vote trading? *Public Choice*, 85, 371-388. 1995.

11 Elvik, R. and Vaa, T. *Handbook of road safety measures*. Amsterdam Elsevier. 2004.

resource allocation processes and efficiency analysis (e.g. the Finish software TARVA where all accident costs are taken into account in the calculation of the socio-economic effects of measures). It can be expected that such measures, when they are made part of higher-level measures such as road safety targets and plans, can lead to improved effects of these measures.

Benefits are likely to exceed costs if measures focus on cost-effective safety measures, or if they achieve a reduction of the imbalance in whom pays for measures and for accident costs.

10 Acceptance

Most institutional measures are dependent on public acceptance and on acceptance by decision makers in the road sector. Acceptance is especially relevant for measures that are entirely voluntary and that do not provide incentives for effective road safety work. This applies to most measures in the category Institutional Organisation of Road Safety. Some measures have the aim of increasing public attention for road safety (e.g. the Task Group “On foot in Vienna”), political attention (e.g. national transport plans and the Swiss safety delegates) or both (the Swedish Vision Zero). Unfortunately it has not been evaluated to what degree these measures are successful in increasing attention. Ways to increase acceptance are for example taking into account other types of goals and the avoidance of goal conflicts, and participative procedures. Measures that are adapted to their context, that are “sold” instead of enforced, and which provide specific incentives can also be expected to receive public and political acceptance.

Institutional Organisational measures are mostly dependent on acceptance by the public or by decision makers. Acceptance increases when measures provide incentives, involve participative procedures, and avoid goal conflicts.

11 Sustainability

Most Institutional Organisational measures are implemented permanently or over several years. Visions are by definition focusing on long-term changes, targets and road safety programs are mostly set up for periods of between five and ten years. Road safety councils or similar institutions are implemented permanently. Also some of the other measures are permanently implemented. Sustainable effects can be expected when they have an influence on the implementation on road safety measures on the long term. This is likely to be the case when there is commitment to the measure, when there are incentives and responsibilities for activities towards the goals of the measures, and when structural preconditions support these activities.

Some measures focus specifically on safety measures which have long-lasting effects, e.g. the Dutch Sustainable Safety, and the associated Start-Up Programme which focus on infrastructure improvements. The Belgian Road Safety Fund focuses on enforcement activities which are not in itself sustainable (effects vanish when enforcement activities are decreased or terminated). The fund can all

the same be regarded as a sustainable measure, because it uses the money that is collected from its own activities, and therefore provides a basis for enforcement activities on the long term.

Institutional Organisational measures are sustainable if they make sure that commitment, responsibilities, budgets, and structural preconditions are not decreasing on the long term.

12 Transferability

Institutional Organisational Road Safety measures are for the most closely connected to framework conditions like the governmental and administrative structures of a country. Transfer of measures is therefore only possible if relevant framework conditions are given, or if they are adjusted as a part of the implementation of the measure. This concerns mainly measures which are a part of the governmental system, like road safety boards. Visions, targets and plans which are successful in one country can be expected to be equally successful in other countries only if there are adequate structural and financial preconditions. For example, the Norwegian Transport Plan is quite successful in influencing road safety work in Norway, but even there, the effectiveness might still be improved by increased obligation and increased coordination within the transport sector. The plan is likely to be more successfully implemented in other countries when such preconditions are provided at the same time. Efficiency analyses and impact assessments can also be assumed to be transferable to other countries if these provide adequate structures, responsibilities etc.. The availability of information on expected effects of safety measures for example is only likely to affect their implementation if there are resources and incentives for the implementation of effective measures.

Institutional Organisational measures are transferable to other countries if adequate structures, responsibilities, incentives, and budgets are present or simultaneously made available.

Description and analysis of Best Practice Measures

The aim of this chapter is the identification of factors that make measures in each of the subcategories effective in improving road safety work and thereby in reducing accidents. For each of the subcategories of Institutional Organisation of Road Safety examples for measures which were assessed as having a high BP potential are given, and it is summarized in what way they contribute to the implementation of effective road safety measures.

13 Visions and targets

Visions are more or less abstract descriptions of a desirable state. They are formulated as long-term goals, without a specified timeframe. They may be somewhat imprecise and not attainable without unreasonable efforts, but they give a direction and an idea of what types of improvements are necessary in order to approach the vision. Targets are more specific. They give a precise description of what is to be attained, and within what timeframe. Targets are usually formulated as mid-term goals, with a timeframe of up to 10 years. Even though targets may (and should) be challenging, they are formulated so as to be attainable.

An example of a **vision** is “Vision Zero” which describes the ideal state that nobody is ever fatally or seriously injured in road traffic. This vision is also supported by the EU and by the WHO. Similar visions have been defined in other countries, e.g. in Finland, Austria, Denmark, and in the UK. In Norway, Vision Zero is incorporated in the National Transport Plan and coordinated with other goals within the transport sector. In Finland, it is incorporated into the National Road Safety Action Plan. In the White paper of the European Commission, the Vision Zero-principle of shared responsibility was adopted as well. The analysis of the WHO¹² draws the broadest conclusions in that it states that road safety is a multisectoral issue for which the public health and transport sector are equally responsible, and which is also an issue of social equity.

A number of ethical problems is related to Vision Zero, especially the questions if road traffic fatalities have to be avoided at all costs, and if it is more important to prevent road traffic fatalities than to reduce mortality in other fields, e.g. in the medical sector¹³. Most countries that have chosen Vision Zero as the basis for their road safety policies or strategies have chosen either to modify the Vision in order to make it less rigorous and to avoid goal conflicts, or by deriving realistic goals which are coordinated with other types of goals.

The Dutch concept of Sustainable Road Safety is based on the idea that the consequences of human errors are to be minimised. A Sustainable Safe road system should prevent accidents and if they do occur, the consequences are to be as small as possible. This concept has large influence on road safety work in practice and has led to the implementation of highly effective and sustainable road safety measures, and it is not associated with the ethical problems and goal conflicts that arise from a strict interpretation of Vision Zero.

¹² World Health Organisation (WHO). World report on road traffic injury prevention. Geneva, 2004.

¹³ Elvik, R. Can injury prevention effort go too far? Accident Analysis and Prevention, 31, 265-286. 1999.

Targets for reductions of fatalities are defined on a European level (e.g. 50% by 2010 compared to 2000 for EU members^{14,15}). Also most European countries have defined national targets for fatalities¹⁶. The targets refer to absolute numbers or to the number in relation to some exposure measure. An example for a target is given in the Danish National Action Plan for Road Safety: The objective is a reduction of fatalities and seriously injured by 40% from 2001-2012. According to this target, the plan contains a set of measures which aims at reducing the most important risk factors for accidents. Specific targets are also defined in most other national transport plans.

**SPECIFIC GOALS DIRECT
ACTIONS - IF THERE ARE
COMMITMENT AND
RESOURCES**

Visions and targets contribute to road safety by directing attention towards specified standards against which effects of road safety work can be evaluated. Improved road safety can be expected when there is commitment to the goals and incentives to achieve the goals, when sufficient resources are available, and when continuous efforts in road safety are ensured. Targets are preferably defined in terms of relative changes in the numbers of fatalities, injuries or accidents. This allows for better evaluation studies for safety measures, and changes in traffic volumes can be taken into account.

**VISIONS AND TARGETS
SHOULD BE INCORPORATED
IN ROAD SAFETY
POLICIES, PLANS, AND
ACTIONS**

In order to achieve continuous efforts, visions and targets are used as the basis for safety programmes, and they provide criteria in efficiency analyses and resource allocation processes. This is the case for Sustainable Safety in the Netherlands, which also focuses on sustainable measures and thereby assures long-term effects. Commitment can be increased if the vision or target are shared and endorsed by the society. E.g. in Sweden, Vision Zero has been voted in the Parliament. The most important barriers to the effectiveness of road safety visions and targets are the lack of influence on road safety work in practice and lack of coordination.

From this subcategory the Dutch concept of Sustainable Road Safety is recommended for the EU / National Handbooks. Vision Zero has also been classified as being a large-potential BP measure. However, Sustainable Safety avoids some of the most important drawbacks of Vision Zero as described above, and it provides useful principles and tools that are promising also for the application in other countries.

14 Plans and programmes

Road safety plans and programmes describe goals and principles for the organisation of road safety work, mostly on a national level. They are successful in improving road safety if they increase obligation and commitment to road safety goals, and if they provide basic conditions for the achievement of these goals. A prerequisite for increased commitment is the existence of specific goals. This may be visions or targets as defined in the previous chapter. Generally, more specific goals (i.e. targets) promote more commitment of these goals.

**SPECIFIC GOALS AND
COMMITMENT ARE
NECESSARY**

ment of these goals. A prerequisite for increased commitment is the existence of specific goals. This may be visions or targets as defined in the previous chapter. Generally, more specific goals (i.e. targets) promote more commitment

¹⁴ European Commission. White Paper European transport policy for 2010: Time to decide. 2001.

¹⁵ http://ec.europa.eu/transport/roadsafety/charter/index_en.htm

¹⁶ OECD, Working Group on Achieving Ambitious Road Safety Targets. Country surveys on road safety performance. July 2006.

ment than vague and unspecific goals. Commitment and the political will to actually direct road safety work towards goals, can be improved by providing coordinating mechanisms between goals in different areas of transport policy. This is realized in the Norwegian National Transport Plan and in the Swiss Federal Action Programme for Greater Road Safety by incorporating compatibility with goals on other areas of transport as a criterion in the plans, and by providing guidelines for coordination within the whole road safety sector in Norway. Additionally, information and a “marketing” strategy for the programme can increase knowledge about the plan and its goals, and commitment to these. The National Road Safety Action Plan in New Zealand has succeeded in providing incentives for local and regional road safety authorities to increase their cooperation and effectiveness. Specific targets are defined on a local level, and clear responsibilities are assigned. According to the plan, also individual persons can be held responsible for the effectiveness of local road safety measures. The specific safety targets additionally support decision making based on success criteria and to avoid politically based decisions.

**ADEQUATE FRAMEWORK
CONDITIONS MUST BE
PROVIDED:
RESPONSIBILITIES,
INFORMATION,
INCENTIVES, FUNDING,
AND QUALITY CONTROL**

It is also crucial to clearly define responsibilities and to provide funding and incentives for the implementation of effective safety measures in order to avoid goal conflicts and conflicting demands for resources. The only programmes with an explicit link to budgeting processes are the Dutch Start-up Programme for Sustainable Safety, where budget allocation is made dependent on the quality of requests, and the Swiss Federal Action Plan for Greater Road Safety. The Swiss programme includes strategies for raising of funds, e.g. from traffic insurance premiums in addition to public funds of federal and cantonal road authorities. In these programmes, the link to budgeting provides at the same time incentives for the implementation of cost-effective safety measures. Incentives can also be provided by a system of quality control which is based on efficiency criteria (e.g. process evaluation, impact assessment). Additionally, guidelines and criteria for decision making may be provided, as for example in the Dutch Start-up Programme for Sustainable Safety. This programme focuses on measures that are in accordance with the overall goal of sustainable safety improvements, and with the principles which are defined in this vision of Sustainable Safety. These guidelines may include the requirement of a scientifically sound basis for the implementation and evaluation of safety measures, such as for example in the Norwegian National Transport Plan. They also have the potential to support road safety policies which conform to the requirement of a multisectoral approach and which take into account safety and mobility requirements on a broader basis.

**PLANS AND PROGRAMMES
SHOULD BE BASED ON A
MULTISECTORAL
APPROACH**

Most road safety plans and programmes are based on road safety visions and targets, but there are only few programmes which include precise definitions of responsibilities, which are linked to budgeting processes, and a system for quality assurance. Consequently, the most important barrier to the effectiveness of road safety plans and programmes is the lack of actual influence on road safety work.

From this subcategory the National Transport and Road Safety Plans from Switzerland, Finland, and Norway are recommended for the EU / National Handbooks. All three programmes qualify as large-potential BP measures and possess properties that make their transfer to other countries promising. Because of the close connection with specific framework conditions in the respective countries it is

not possible to select one of the three programmes as the “very best”, or to recommend transfer of a complete programme to another country. It is rather the basic ideas and the approaches to put them into practice that are recommended for transfer.

15 Efficiency analysis

Efficiency analysis are conducted to evaluate the effects of road safety measures or programmes at different stages of their implementation.

RESULTS SHOULD BE MADE ACCESSIBLE AND USED IN DECISION PROCESSES

Impact assessments refer to the systematic use of evaluation studies in road safety planning. In Norway and Finland such evaluation studies are conducted for measures on all fields of road safety. The results are used in decisions about the implementation of specific measures. The impact assessments improve road safety by providing a scientific basis and supporting the

implementation of effective measures. Impact assessments after the implementation of measures may additionally make it possible to adjust measures which are not as effective as expected. Preconditions for the effectiveness of impact assessments in improving road safety are that the results are made publicly available (such as in the Norwegian Handbook of Road Safety Measures) and that they are systematically used in planning (such as in the Finnish National Transport Plan) and in decision

COST-BENEFIT ANALYSES SHOULD BE TRANSPARENT AND BE INCLUDED SYSTEMATICALLY IN DECISION PROCESSES

processes. In both countries software tools are in use with which effects of all types of measures on the numbers of accidents and on accident costs can be estimated.

Cost-benefit analyses for specific safety measures are often conducted prior to the implementation of measures and used in decisions about which measures to implement. In Finland the road authorities use the software TARVA in order to estimate effects and cost benefit ratios of infrastructure measures on the Finnish road network. In Norway, similar programmes are in use. Conducting cost-benefit analyses in decision processes can improve road safety by providing comparable information on the most cost effective measures. Thus, larger safety effects can be achieved with the same funds. It is also possible to include other criteria than safety effects (e.g. environment, mobility) in cost-benefits analysis. The usefulness of cost-benefit analysis depends on reliable information on costs and benefits. Such information is often not available and has to be estimated or predicted. This can make cost-benefit analysis difficult to conduct, and the results may become questionable. It is therefore important to conduct cost-benefit analysis in a way that assures their credibility, and to avoid the strategic use of the result to support decisions which are based on political intentions. This can be achieved by making transparent on what types of costs and benefits the results are based, by defining these in advance of the analysis, and by including the analysis in a standardized tool.

The application of cost-benefit analysis has been investigated within eSafety, which is a joint initiative of the European Commission, industry and other stakeholders. Among the main conclusions the

study SEISS¹⁷ (Socio-Economic Impact of Intelligent Safety Systems) is that socio-economic impact assessments have the potential to enhance the basis for decision making processes. To achieve this, it is necessary to exchange information on current research, and to conduct scenario calculations which may be based on different input variations so as to yield results which are relevant for different parties.

OBSERVATIONS CAN
SUPPORT DECISION
PROCESSES AND THE
ESTABLISHMENT OF LINKS
TO SAFETY GOALS

Road safety observatories have the task to assess trends and developments in road safety. Their analyses show on which fields there is need for action, and how effective road safety programmes and strategies are in reducing numbers of accidents. They can contribute to increasing public awareness and stimulate decision makers to taking safety concerns into account. Observatories can be expected to be more effective in improving road safety when they are linked to a road safety strategy with specific safety goals, and when their work has an actual influence on the implementation of road safety measures. Examples for road safety observatories come from Spain and France. A road safety observatory is also being created on a European level. It is described in more detail in the thematic report on Statistics and in-depth analysis of the SUPREME project.

From this subcategory the measures that refer to impact assessment and cost-benefit-analysis from Finland and Norway are recommended for the EU / National Handbooks. All three measures have shown that systematic evaluations can contribute significantly to road safety by supporting the implementation of the most effective safety measures. The greatest challenge for the transfer of such measure to other countries will be to provide mechanisms that assure the use of evaluation results in decision processes.

16 Resource allocation processes

LINKS BETWEEN RESOURCE
ALLOCATION AND ROAD
SAFETY GOALS MUST BE
ESTABLISHED

Resource allocation is crucial for the effectiveness of road safety goals and programmes as has been seen in the previous chapters. Therefore resource allocation possesses are (ideally) included in all types of road safety strategies and policies. Conversely, resource allocation processes should be linked to specific goals for road safety in order to achieve a maximum benefit of the funds which are allocated in the process.

FUNDING IS PROVIDED ON
THE CONDITION OF
FRAMEWORK CONDITIONS
AND OF POSITIVE
EXPECTED AND ACTUAL
EFFECTS
ACTIONS ARE TAKEN IF
GOALS ARE NOT MET

Two examples for **resource allocation according to efficiency criteria** have been provided, the Belgian Road Safety Fund which uses fines paid for traffic tickets, and the Austrian Road Safety Fund which receives money from fees paid for customized license plates. They contribute to road safety by raising money from alternative sources, and by providing incentives for the implementation of effective measures. The strongest incentives are provided by the Belgian fund. **Re-**

¹⁷ Abele, J., Kerlen, C., Krueger, S., Baum, H., Geißler, T., Grawenhoff, S., Schneider, J. and Schulz, W.H. Exploratory study on the potential socio-economic impact of the introduction of intelligent safety systems in road vehicles (SEISS). VDI / IfV report 2005.

source allocation processes which support priority strategies also aim at providing incentives for the implementation of effective safety measures. The Dutch Stimulation Plan "actie -25%" is a part of the national road safety strategy. The French Incentive programmes for local authorities are not explicitly part of a larger strategy but also have a specific goal for the reduction of a specific type of accidents. The Dutch programme provides incentives for participation, and for goal attainment, the French programme distributes budgets according to expected accident reductions. Factors that contribute to the effectiveness of these programmes in improving road safety are, besides incentives for effective and sustainable measures, generally increased public awareness, and the direction of attention towards specific types of safety measures.

Preconditions for the effectiveness of both types of resource allocation processes are a long enough timeframe and sufficient budgets. It is also essential to conduct follow-ups in order to ensure the effectiveness of the measures which have been funded, and to avoid misuse of funds. Potential drawbacks with such incentive schemes can arise if incentives lead to increased use of a specific type of safety measures at the cost of other (and maybe more effective) measures. Such side effects may be avoided by conditioning the provision of resources on the existence of adequate framework conditions and on the types of measures they are used for. Not reaching objectives should have consequences in order to assure the effective use of resources and to stimulate evaluation activities.

From this subcategory the Belgian Road Safety Fund is recommended for the EU / National Handbooks. It is a brilliant example for how "more safety for less money" can be provided. There are especially two features of this measures that are promising for the transfer of this measure to other countries, the use of fines for road safety objectives, and the possibility to call back spent money that can not be justified.

17 Formal coordination mechanism for road safety policy

COORDINATION REQUIRES
RESOURCES AND
MECHANISMS THAT
ENSURE THAT
RECOMMENDATIONS ARE
FOLLOWED

A coordinated body is necessary to design a road safety programme, especially a targeted one. It improves coordination and commitment within the road sector, focuses attention on safety issues, and facilitates coordination and of funding of road safety programmes, plans, and measures. Most European countries have set up a formal coordination mechanism for road safety. This is often within the Ministry which is responsible for Transport, or in additional cooperation with national road authorities. The transport plans and programmes which have been described in a previous chapter have mostly been developed for the Ministries of Transport. Additionally, some countries have implemented **advisory councils on a national level**. Examples are from Slovakia and Belgium. These councils can contribute to road safety by directing attention and actions of different actors towards road safety improvements, and by providing guidelines. Incentives are provided by the Belgian Federal Road Safety Commission in the form of mid term evaluations. The impact of advisory bodies is limited if there is not mechanism which ensures that guidelines and advices are followed. Such mechanisms may be (monetary) incentives,

obligatory rules or standards, or established links to binding safety goals. Limited funds can also limit their effectiveness.

LOCAL EXPERTISE SHOULD
BE SUPPORTED AND
DEVELOPPED

In order to improve coordination between regional or local levels, some countries have **decentralized coordination mechanisms**. In the Netherlands the distribution of road safety funds is partly organized by provincial road safety bodies. These bodies contribute effectively to coordination between different levels, and stimulate road safety work on a local level. The Swiss safety delegates and the German accident commissions contribute to road safety by improving coordination between different actors within the road sector, and by integrating safety concerns in other activities on regional or local levels. They can also be useful in the sense of knowledge management by spreading information and expertise.

Another type of coordination mechanism for road safety are interdisciplinary **thematic task groups** such as the Austrian Task group “On foot” in Vienna. Such task groups can raise attention for specific road safety issues which would otherwise not be taken into account. This is an important contribution to road safety. However, taking into account the concerns of pedestrians and cyclists in the official road safety policy (e.g. in the national transport plan, in transport goals, and in budgeting processes) would be even more effective. Even then, the representation of vulnerable road users or other less popular aspects of road safety in task groups might be an important contribution to road safety.

None of the measures in this subcategory is recommended for the EU / National Handbooks. The measures are far too specialized with respect to country-specific framework conditions. However, basic principles and ideas should be considered in the design of framework conditions for road safety work.

18 Safety incentive schemes

Safety incentive schemes are different from other measures in the field of Institutional Organisation of Road Safety in that they focus on specific types of behaviour and that they have individual road users as a target group. One example comes from the Netherlands where a system called “Belonitor” (“Rewarder”) has been implemented in a lease car company. Similar systems have been applied in Sweden and in Denmark for young drivers. Drivers are individually rewarded if their speed and headways are within defined limits. Such systems might also be implemented on a larger scale. The experiment from the Netherlands has shown that the “Rewarder” is able to effectively influence driving behaviour. The application of such systems on a larger scale can therefore be expected to be favourable for road safety. A precondition is however that an adequate organisational framework is provided e.g. in the form of incentive systems and follow-up processes, which do not interfere with existing incentives or for example time pressure. As this was the only measure that was reported in

this category, there do not seem to be many incentive schemes which are implemented at the level of organisations but which focus on individual behaviour. Their contribution to road safety and their potential for Best Practice is

MAKE ORGANISATIONS
RESPONSIBLE FOR
FRAMEWORK CONDITIONS
THAT AFFECT THE
BEHAVIOUR OF
PROFESSIONAL DRIVERS!

that they redistribute responsibilities from individuals to organisations. While each individual driver is still responsible for his or her own behaviour, it is the responsibility of the organisation to provide a framework that allows the drivers a safe driving style. In other countries there have been attempts to make organisations, especially shipping companies, partly responsible for traffic offences of their employees, especially speeding. The aim of these attempts is to reduce the time pressure that often results for drivers and that they only can cope with by speeding “at their own risk” (and at the risk of other road users of course). The attempts have failed mostly because of lacking willingness of the companies who fear for their economic success. It would therefore be a logical step to provide incentives also for companies to comply to such systems, either based on positive incentives such as the Dutch Rewarder, or based on sanctions.

Recommendations for the institutional organisation of road safety

The recommendations that are given in this chapter focus on **key success factors** that make measures effective in improving road safety and road safety work. They refer to single measures and to more general policy guidelines and framework conditions.

PROVIDE INCENTIVE
STRUCTURES AND
COORDINATION

Measures on the field of Institutional Organisation of Road Safety should be fit into existing framework conditions like the political and administrative system. This concerns for example the assignment of goals and incentives in accordance with existing responsibilities. On the other hand, institutional organisational measures can be designed with the aim to improve the existing framework conditions. This includes coordination between different areas of road safety, between institutions, and between local and national levels. It includes also incentive structures which consist of goals, plans, resource management, and quality control. How coordination and incentive structures for road safety can be provided by institutional organisation of road safety is described in the following sections. All measures in the category Institutional Organisation of Road Safety affect how road safety problems are dealt with in general. The first section in this chapter discusses therefore how general views on road safety affect actions related to road safety in practice.

19 Road safety, health, and ethics

The institutional organisation of road safety affects strongly how road safety and specific fields of road safety are prioritised. The priority that is given to road safety is not only expressed by officially stated intentions or goals, but also by the way road safety is institutionalized, by how decisions which concern road safety are met, and by whom.

DEFINE PRIORITIES AND
INVOLVE ALL RELEVANT
ACTORS

Responsibilities for road safety are usually within the transport sector. Several measures have been described in this report which support the consideration of road safety issues in general transport planning and in resource allocation processes within (road) transport. These measures can contribute to the design of the road transport or the whole transport system according to safety criteria. This includes the consideration of safety and mobility requirements of different road user groups and of ecological aspects.

Recommendations of the WHO go a step further by proposing a view on road safety as a public health issue and as an issue of social equity. The rationale behind this view is both ethical and economical: Road accidents can not be accepted as an inevitable side-effect of mobility, and everyone should be as effectively as possible protected against physical harm. From the economic perspective, road accidents cause costs for the whole society, and the health sector should be especially interested in reducing these costs. Consequently, public health authorities should be involved in road safety work.

MAKE EXPLICIT WHICH
ECONOMIC AND ETHICAL
CONSIDERATIONS ROAD
SAFETY POLICY IS BASED
ON

A general change in the view on road safety is also proposed by Vision Zero which states that road safety should be defined from an ethical, not from an economical perspective. This view may however cause other ethical problems

which are related to the absolute priority that is given to road safety^{18, 19}. Therefore, goal coordination mechanisms should be included in road safety policies which are based on Vision Zero to assure a balance between road safety and other fields which are relevant for survival, health, personal freedom, mobility, environment etc., and to take into consideration economical aspects which all the same are associated with road safety.

20 Goals

GOAL DIRECTED ACTIONS ARE MORE EFFECTIVE Road safety visions and targets are the theoretical background for many measures which are related to Institutional Organisation of Road Safety. Goal directed actions usually lead to higher performance than actions that are not directed towards performance goals. This is true on the individual level, on organisational level, and on governmental level. Goals influence performance by setting standards against which current performance may be compared, and by increasing motivation actions which contribute to the attainment of the goals.

PROVIDE ADEQUATE FRAMEWORK CONDITIONS However, the existence of visions and goals for road safety does not usually improve road safety by itself. In many countries, the adopted visions or goals have no real impact on road safety work because they are not obliging or because no link to concrete strategies, plans, or activities is established. In other words, specific goals have to be formulated according to the visions, there must be commitment to the goals, goal conflicts should be avoided, and there must be sufficient resources for actions towards the goals.

21 Coordination and decentralization

PREVENT INDEPENDENT AND UNCOORDINATED ACTIONS! Within each country a number of authorities and organisations is involved in road safety work on different national, regional, and local levels. This may lead to diffusion of responsibilities and to goal divergence or conflicts. One of the aims of organisational measures is therefore to provide coordination mechanisms and resources for road safety. This has to be effective in both directions: insure that road safety issues are not neglected because of other economical or political interests on other fields, and insure that mobility, social and environmental issues are taken into account when planning road safety²⁰. Coordination is in particular important in countries with a decentralized or consultative structure with divided responsibilities (e.g. Belgium).

¹⁸ Elvebakk, B. Ethics and road safety policy. TØI-report 786/2005. Oslo: Institute of Transport Economics. 2005.

¹⁹ Elvik, R. Can injury prevention effort go too far? Reflections of some possible implications of Vision Zero for road accident fatalities. Accident Analysis and Prevention, 31, 265-286. 1999.

²⁰ Elvik, R. and Vaa, T. Handbook of road safety measures. Amsterdam Elsevier. 2004.

It is also important to ensure coordination between different geographical levels in order to avoid inconsistencies within the transport system (which may become safety problems on their own), and to provide a basis for human resource and knowledge management (see below, Chapter Resources: Money, people). Decentralization and coordination are also recommended by the WHO²¹ and in the Swedish Sida programme²² in order to develop and use local expertise.

22 Commitment: Incentives and responsibilities

Commitment of all involved actors or parties in institutional organisational measures is essential for their effectiveness and for the sustainability of their effects. Commitment is defined as a feeling of obligation, the intent to achieve a goal, and resistance against interferences and against changes of the goal²³. Commitment is relevant for individual persons, for groups, and for whole organisations. A prerequisite is a specific goal in terms of a precise description of a desired state (e.g. numbers of accidents, decision processes). Commitment is related directly to the goal, but also to the consequences that are expected from goal attainment. Therefore, responsibilities and incentives for goal attainment are important for ensuring commitment.

SUCCESS AND FAILURE
MUST BE DEFINED,
EVALUATED, AND HAVE
CONSEQUENCES!

Incentives can be given in the form of monetary benefits from goal achievement, or in the form of other benefits, for example public attention. Commitment can be assumed to be higher when it must be expected that both successes and failures will receive public attention, especially when future activities are dependent on positive public attention and on positive reputation.

Incentives can also be sanctions in the case of failure, but experience from USA has shown that positive incentives are more effective in achieving compliance²⁴. To provide incentives for successful implementation of measures, it has to be defined in advance when the measure is judged to be “successful” (i.e. goals have to be defined), and how it will be evaluated if the criteria for success are met. This will be discussed in more detail below. Another type of incentive can be participation in decision processes. Participation has often proven to increase commitment because most people are interested in contributing with their own ideas and interests. In order for incentives to be effective it has to be defined who (which organisation or person) is responsible for the measure and who will profit from the incentives. Responsibility and incentives should also be located with the same persons or institutions, i.e. the one who is responsible should also receive the laurels. Institutional organisation measures suffer often from a lack of responsibilities or from a diffusion of responsibilities, and this is one of the major factors that make measures less effective than they might be.

²¹ World Health Organisation (WHO). World report on road traffic injury prevention. Geneva, 2004.

²² Elsenaar, P. and Sahlin, Å. Institutional sustainability and capacity development within sida financed road safety projects. Department for Infrastructure and Economic Co-operation: Sida-evaluation 05/29. 2005.

²³ Klein, H. J., Wesson, M. J., Hollenbeck, J. R., Wright, P. M. & DeShon, R. P. The Assessment of Goal Commitment: A Measurement Model Meta-Analysis. *Organisational Behavior and Human Decision Processes*, 85, 32-55, 2001.

²⁴ Elvik, R. and Vaa, T. *Handbook of road safety measures*. Amsterdam Elsevier. 2004.

23 Resources: Money, people, and expertise

ROAD SAFETY COSTS
MONEY BEFORE IT SAVES
MONEY!

The successful implementation of measures requires monetary and human resources. The lack of budgets is one of the major factors that limit the effectiveness of measures, because ambitious goals and political will alone are not sufficient to implement effective safety measures. Additionally, there is seldom overlap between who pays and who profits from safety measures (see above). Money that is spent on road safety leads usually not to savings for those who have spent it. Measures should therefore include strategies for raising and distributing money between all different actors and in accordance with goals and coordination mechanisms which have been described above.

ROAD SAFETY REQUIRES
KNOWLEDGE AND
KNOWLEDGE IS WITH
PEOPLE!

Another type of resources which has not been addressed by any of the measures in this report are human resources and knowledge. Most measures rely on people who are working in accordance with targets, plans, processes etc. This might be made more effective if knowledge and expertise were systematically developed and distributed in the sense of both human resource development and knowledge management. As a part of the road safety strategy in London²⁵ a forum has been established that aims at coordinating activities and exchanging information. As one of the major challenges for road safety work in London lack of skilled people has been identified. The forum offers therefore training courses for traffic engineers.

24 Quality control: Evaluations and consequences

CHECK THE QUALITY OF
MEASURES AT ALL STAGES
BEFORE AND AFTER
IMPLEMENTATION!

Quality control is closely linked to commitment and incentives. If success or failure will have consequences, commitment is usually increased. In a political context it is important to be able to justify expenses, e.g. to be able to show that an expensive measure has led to the expected improvements and consequently savings. Quality control is also important in a broader sense and refers to quality on all stages of the implementation. It involves for example an assessment of the quality of all types of procedures which are involved in the measure, an impact assessment in advance of the implementation, and continuous process evaluations. In the same way as for the evaluations of results, quality control should be used to provide incentives, and to analyse and detect needs for improvements or adjustments of the measure.

²⁵ Lines, C.. Road Safety in London: Past success and future innovations. Proceedings of the AET European Transport Conference ETC, Strasbourg. 2006.

25 Measures which should be considered for the EU and / or for the National Handbook

The measures that are presented in this report have been classified as having large, medium or small BP potential, and recommendations for activities on the field of Institutional Organisation of Road Safety have been developed.

It is recommended that the EU / National handbooks include

- ◆ a summary of the **recommendations** for Institutional Organisation of Road Safety that can be applied to a large variety of different measures in this field and
- ◆ selected **measures** from the category Institutional Organisation of Road Safety that demonstrate how the recommendations can successfully be put into practice.

From the measures that have been evaluated as “large potential” BP measures, some measures are recommended for the EU / national handbooks of the SUPREME project. The selection of these recommended measures is based on the following criteria:

- ◆ The measures possess all or most of the properties that have been identified as **key success factors**. They can be expected to lead to significant improvements of road safety if necessary adjustments for country specific conditions are made.
- ◆ The measures are recommendable for the **transfer** to other countries and may provide valuable improvements or impulses for other countries. Because of the close connections between the measures and country-specific framework conditions, it is most likely that measures can not be transferred as a whole. Modifications to the measure (or to the framework conditions in the country) have to be made, or some components of a measure must be selected for transfer, while others have to be modified or dropped.

The following measures are recommended for inclusion in the EU / National Handbook (more detailed descriptions of the measures can be found in the chapter Description and analysis of Best Practice Measures and in Annex 2):

- ◆ Road Safety Visions and Targets: Sustainable Road Safety (Netherlands)

This concept has led to the implementation of effective road safety measures on a large scale. It is oriented towards ambitious and realistic goals, includes coordinating mechanisms, and incentives.

- ◆ Long Term Road Safety Programme: The National Transport and Road Safety Plans from Switzerland, Finland, and Norway

All three plans provide a coordination mechanism and guidelines for effective road safety work towards realistic long-term goals for road safety. They support coordination within the transport sector, and support the implementation of effective road safety measures according effectiveness or efficiency criteria. The Swiss plan is the only plan that implicitly includes incentives and that addresses financing issues.

- ◆ Efficiency Analysis: Evaluation studies and decision making tools (Finland and Norway)

The evaluation studies and decision making tools that are used in Norway and Finland provide a basis for the application of scientific research methods on a large basis. They have real influence on decisions on the implementation of road safety measures that are effective in terms of prevented accidents, and in terms of cost-effectiveness.

◆ Resource Allocation according to efficiency criteria: Road Safety Fund (Belgium)

The Belgian Road Safety Fund is a cheap and effective measure with a striking logic concept. It uses money paid for traffic offences to support police services for road safety actions. The actions focus on important accident contributing risk factors. The allocation of money is conditioned on a quality assessment of the project plan, and expenses have to be justified. Money that has not been spent or justified can be asked back. The measure is cheap as it is financed by its own activities.

Annex

26 Annex 1:

Questions for the country surveys

- ◆ What is the general view of road safety and which priority is given to road safety in general?
- ◆ Are there qualitative or qualitative goals for road safety in your country?
- ◆ Is there a continuous monitoring of road safety and on progress towards road safety goals?
- ◆ Are there strategies and / or action plans which relate directly to road safety work and to the implementation of road safety measures?
- ◆ Is the effectiveness or cost-effectiveness of road safety measures regularly evaluated?
- ◆ To what degree is road safety work or the implementation of road safety measures based on assessments of effectiveness or cost-effectiveness?
- ◆ How are resources for road safety work allocated and to what degree are efficiency criteria taken into account?
- ◆ Is there a formal coordination mechanism for road safety policy (e.g. road safety board or similar body)?

27 Annex 2:

All measures that have been submitted as potential Best Practice

27.1 Road safety visions and targets

27.1.1 Visions

- ◆ Netherlands: Sustainable Road Safety*** (Recommended for European / National Handbooks)

The vision is based on the idea that the consequences of human errors are to be minimised. A Sustainable Safe road system should prevent accidents and if they do occur, the consequences are to be as small as possible. Principles for the design of the traffic system are functionality, homogeneity, and predictability. Measures derived from the vision focus mainly on infrastructure, vehicles, and education. For the implementation of Sustainable Safety, a start-up programme and a plan which focuses on decentralization of road safety policies have been implemented.

Time: Since 1990

Responsibility: The vision is incorporated in the policies of road safety authorities (all levels)

Incentives: No legal obligations. Start-up programme 1997-2002 (see BPM under Long-term road safety programme)

Level: National, regional, and local.

Formal (process) evaluation: No.

BP: The vision focuses on principles for the prevention of accidents and accident consequences that are relevant, scientifically approved, realistic. It includes programmes to ensure that road safety policies are made according to the vision, it provides incentives, and makes use of effective measures.

Potential barriers: Redesign of the road system according to the three principles is an ambitious project.

Information / contact:

- ◆ SWOV Institute for Road Safety Research, P.O. Box 1090, 2260 BB Leidschendam. E-mail: info@swov.nl Tel: +31 (0) 70 3173 333
- ◆ Ministry of Transport, Public Works and Water Management. Transport Research Centre. PO Box 1031, 3000 BA Rotterdam, The Netherlands
- ◆ Ministry of Education, Culture and Science PO Box 16375, 2500 BJ Den Haag, The Netherlands www.dormetduurzaamveilig.nl

◆ Sweden: Vision Zero***

Vision Zero states that nobody should be fatally or permanently injured in road accidents. The aim is to reduce the number of accidents and the severity of accident consequences. To achieve this, a new view on responsibilities for road accidents and injuries has been defined (see below).

Time: Since 1997.

Responsibility: The Swedish parliament adopted the vision. According to the vision all actors or designers of the transport system are responsible for accidents (this includes road authorities, politicians, vehicle manufacturers, road users, etc.).

Incentives: Not directly. The public attention which is directed towards the Vision can be an effective incentive.

Level: National.

Formal (process) evaluation: No.

BP: The Vision has increased the use of effective and sustainable safety measures (especially infrastructure, speed reductions).

Potential barriers: Vision Zero becomes ethically questionable when it leads to investments in road safety at the cost of investments in other areas, and if this leads to increased mortality in these areas. Vision Zero would also result in severe restrictions of e.g. personal freedom.

Information / contact:

- ◆ Public Roads administration: www.vv.se

27.1.2 Targets

◆ Finland: National safety goal for 2010***

The national safety goal is part of the Finnish long-term road safety vision outlined in the Government Resolution on Improving Road Safety (March 2006). It is similar to Vision Zero in that it states that nobody should be fatally or seriously injured in road traffic, and that the design of the traffic system is mainly responsible for achieving this vision. The target is that the annual number of road accident fatalities does not exceed 250 in 2010 and 100 in 2025.

Time: Since 2001 until 2025

Responsibility: The Finnish Government

Incentives: No. The Government expects the administrative sectors to take the aims of the Government resolution into considerations in their own action plans.

Level: National.

Formal (process) evaluation: The Ministry of Transport and Communications will coordinate national road safety work and report to the Government on the progress of the Programme.

BP: The goal is set at a realistic but ambitious level. The government resolution not only defines the goal but also names a list of measures that will be prepared and implemented in 2006-2010 in order to achieve the target.. It has a real impact on road safety work by defining responsibilities to different actors, especially in the public sector. For most measures, the organisation(s) in charge are named in the resolution.

Potential barriers: Quantitative goals for the implementation of the various measures mentioned in the Government resolution are largely lacking. The various administrative sectors are expected to implement the measures in their field within the scope of the national budget, without specific allocation of resources to this particular purpose.

Information / contact:

- ◆ Ministry of Transport and Communications, www.mintc.fi
- ◆ Government resolution on improving road safety in Finland:
www.liikenneturva.fi/en/liitetiedostot/valtioneuvoston_periaatepaatos.pdf
- ◆ Visions and quantified goals in the Austrian Road Safety Programme 2002-2010*

The Programme is based on the vision that every killed or fatally injured in road traffic is one too many, and that road safety work shall focus on the largest possible reduction of accidents. The goal is to reduce the number of fatalities by 50% in 2010.

Time: Since 2002 until 2010.

Responsibility: No clear responsibilities.

Incentives: No.

Level: National.

Formal (process) evaluation: No.

BP: The plan provides principles which aim at directing road safety work towards a largest possible reduction of accidents.

Potential barriers: The plan has no impact on road safety work.

Information / contact:

- ◆ Federal Ministry of Transport, Innovation and Technology
(<http://www.bmvit.gv.at/en/index.html>): Österreichisches Verkehrssicherheitsprogramm 2002-2010.

27.2 Road safety plans and programmes

- ◆ Switzerland: Federal Action Programme for Greater Road Safety (Via sicura)*** (Recommended for European / National Handbooks)

The programme is implicitly based on Vision Zero, the target is a reduction of fatalities by 50% from 2000 to 2010. It consists of 56 safety measures on all fields of road safety, which were selected, according to a set of criteria, e.g. cost-effectiveness, compatibility with goals in other fields of federal

policy. The programme includes a system for quality assurance (evaluation) and for implementation and financing of measures. Costs and benefits have been assessed based on benefits in terms of reduced accident costs, and costs for the society (who bears ca. 2/3 of the costs) and for individual road users.

Time: Since 2005 (programme not yet started).

Responsibility: Federal council and road authorities, local governments.

Incentives: (not yet decided)

Level: National, Cantons.

Formal (process) evaluation: No.

BP: The programme supports implementation of effective road safety measures according to a set of relevant criteria. Incentives are implicitly included (quality assurance). Financing is also a part of the programme. An ex-ante cost-benefit analysis has been conducted and yielded positive results.

Potential barriers: The programme has not yet started.

Information / contact:

- ◆ Federal Roads Authority FEDRO: www.astra.admin.ch
- ◆ VIA SICURA – Federal Action Program for Greater Road Safety, Federal Roads Authority FEDRO, 2005 (<http://www.astra.admin.ch/html/en/news/news/schlussbericht.pdf>)
- ◆ Finland: National road safety action plan*** (Recommended for European / National Handbooks)

The action plan has been developed based on the Finnish national road safety vision and the goal that is described as BP under Road Safety Targets. It focuses on improved cooperation within the road sector, and between the road and health sector, and on the implementation of a large variety of safety measures. Measures are selected based on efficiency criteria.

Time: Since 2006 until 2010.

Responsibility: The Finnish Government.

Level: National.

Incentives: No.

Formal (process) evaluation: The central government administration will monitor the attainment of targets set for the overall programme and for its individual measures through regular performance reports.

BP: The plan is goal oriented. It focuses on specific target areas and employs measures that are chosen based on efficiency analysis, which shows that it is reasonable to expect that the goal will be reached if the planned measures will be implemented.

Potential barriers: The various administrative sectors are expected to implement the measures in their field within the scope of the national budget, without specific allocation of resources to this

particular purpose. Because there is no owner responsibility in Finland for minor speeding offences only a fraction of the potential safety benefits of speed cameras can be exploited.

Information / contact:

- ◆ Government resolution on improving road safety in Finland:
www.liikenneturva.fi/en/liitetiedostot/valtioneuvoston_periaatepaatos.pdf

- ◆ Norway: National Transport Plan*** (Recommended for European / National Handbooks)

The Plan is the central document for governing the whole transport sector, and revised every 4th year. It is based on management by objectives and results. The road safety part of the plan is based on Vision Zero. Decisions about safety plans and measures are based on scientific research.

Time: Each plan is for ten years, it is updated every fourth year.

Responsibility: The Department of Transport and Communications is responsible for the plan as a whole, the Public Roads Administration is responsible for the road safety part. All involved authorities bear the costs.

Level: National.

Incentives: No.

Formal (process) evaluation: Yes, several process evaluations have been performed.

BP: Safety goals are integrated in general transport planning. Decisions on safety measures are based on scientific research and evaluated according to safety goals.

Potential barriers: Policy priorities are inefficient in affecting actual road safety work. There is too little coordination within the transport sector and between the NTP and budgeting processes.

Information / contact:

- ◆ Department for Transport and Communications (2003-2004). Stortingsmelding nr. 24, Nasjonal Transportplan 2006-2015 (National Transport Plan 2006-2015).
- ◆ Public Roads Administration www.vegvesen.no/ntp/index.html
- ◆ Department for Transport and Communications:
<http://www.odin.dep.no/sd/norsk/tema/transport/bn.html>
- ◆ Netherlands: Start-up Programme for sustainable safety***

The programme is an agreement within the Dutch government, aiming at implementing Sustainable Road Safety. It contains action plans for the implementation of sustainable safety measures, mainly infrastructure measures and reduced speed limits.

Time: 1997-2002

Responsibility: Ministry of Transport. The national and other governments bear the costs.

Level: local and regional

Incentives: Resource allocation according to quality of the requests by local authorities.

Formal (process) evaluation: No.

BP: The Programme supports the implementation of sustainable safety measures by providing guidelines for decision making processes and action plans. It focuses largely on measures that are known to be effective.

Potential barriers: The action plans focus only on a limited portion of safety measures.

Information / contact:

- ◆ Ministry of Transport, Public Works and Water Management Transport Research Centre
PO Box 10313000 BA Rotterdam The Netherlands
- ◆ Spain: Catalan Road Safety Strategy (incl. Special Traffic Safety Measures 2004-2005)**

The Strategy consists of consecutive three-year action plans which focus mainly on accidents related to speeding and alcohol. The current goal is to reduce the number of fatalities by 30% between 2000 and 2007. Research projects are carried out as a part of the strategy, numbers of accidents and fatalities are monitored. The current action plan includes enforcement activities, a penalty point system, driver licensing and training, and a model for municipal road safety plans.

Time: Since 1999 (permanently)

Responsibility: Catalan government is responsible and bears the costs.

Level: Regional.

Incentives: No.

Formal (process) evaluation: Yes, process evaluations and monitoring of accident statistics.

BP: The strategy supports implementation of effective road safety measures. It includes research and evaluation of effects. Links to measures on national and municipal levels are established.

Potential barriers: The plans do not include budget allocation.

Information / contact:

- ◆ www.gencat.net/transit/
- ◆ www.gencat.net/transit/pdf/catalan_road_safety_plan_sv_2005_2007.pdf
- ◆ Generalidad de Cataluna. Oficina del Plan Catalun de Seguridad Vial; Contact person: Xavier Almirall. Director of the Traffic Safety Plan Office. Telephone: +34 93 567 40 28 Fax: +34 93 567 40 04
- ◆ Denmark: National Action Plan for Road Safety**

The objective of the plan is a reduction of fatalities and seriously injured by 40% from 2001-2012. The plan contains 62 measures which are related to speeding, alcohol, cyclists, and junctions. Measures are regularly evaluated (these factors contribute to ca. 85% of all Danish road accidents).

Time: The plan is for the years 2001-2012.

Responsibility: The Danish road safety commission. No specific funding for safety measures.

Level: National.

Incentives: No.

Formal (process) evaluation: Yes, evaluation of several measures, process evaluation in 2005.

BP: Investments in road safety are directed towards measures which aim at reducing accidents which are related to important risk factors which contribute to a large proportion of accidents.

Potential barriers: Lack of commitment and responsibilities, no specific funding.

Information / contact:

- ◆ The Danish Ministry of Justice: www.jm.dk
- ◆ The Danish Road Safety Commission: Every Accident is One Too Many. Road safety starts with you. Towards new objectives 2001-2012. www.Faerdselssikkerhedskommissionen.dk
- ◆ Poland: National Road Safety Program*

The program contains objectives and measures for improving road safety on all levels and in all areas of road safety; legal, organisational, and financial basis, road user behaviour, infrastructure, and post accident care. The goal is to reduce the number of fatalities in Poland by 50% in 2013 (compared to 2003).

Time: 2005-2013.

Responsibility: Ministry of Transport. It is unclear who bears the costs.

Level: National.

Incentives: No.

Formal (process) evaluation: No.

BP: The program provides a basis for road safety work, and addresses all areas of road safety.

Potential barriers: It is unclear to what degree the goals for improving road safety work affect actual road safety work, how the costs are covered and what incentives exist for single authorities to work towards the goals. There may be conflicts of interests within different topics addressed by the programme and with other political goals.

Information / contact:

- ◆ http://www.krbrd.gov.pl/gambit/gambit_2005.htm
- ◆ The National Road Safety Council, The Ministry of Transport: www.krbrd.gov.pl; sekretariat@krbrd.gov.pl

27.3 Efficiency analysis

27.3.1 *Impact assessment*

- ◆ Norway: Handbook for Road Safety Measures*** (Recommended for European / National Handbooks)

The handbook contains analyses of the effectiveness of over 100 types of road safety measures, mostly based on meta-analysis. The results are used in combination with software tools in planning processes in order to estimate expected effects on accident costs.

Time: Permanently since 1997.

Responsibility: The Public Roads Administration bears the costs.

Incentives: No.

Formal (process) evaluation: Indirectly (implicitly included in the measure)

BP: The handbook provides a comprehensive overview of the effectiveness of a large number of safety measures, and in combination with the other tools gives a basis for decisions in favour of the most effective safety measures. It is widely in use among researchers and planners.

Potential barriers: Use of the results and the accompanying tools requires some expertise.

Information / contact:

- Elvik, R. & Vaa, T. (2004). The handbook of road safety measures. Amsterdam: Elsevier.

- ◆ <http://tsh.toi.no/>

- ◆ Finland: Evaluation of road traffic safety measures*** (Recommended for European / National Handbooks)

108 road safety measures were evaluated, the results are used in the national road safety plan 2006-2010. The overall aim of this plan is to reduce the number of fatalities by 30% in 2010 compared to 2005.

Time: Currently.

Responsibility: The Ministry of Transport and Communications is responsible for the road safety plan, and bears the costs for evaluation.

Incentives: No.

Formal (process) evaluation: No process evaluation.

BP: The evaluation and its use in the national transport plan support the use of scientifically evaluated and cost effective safety measures.

Potential barriers: Actual allocation of funds is not reported. There are no incentives for implementing cost-effective safety measures.

Information / contact:

- ◆ Peltola, H., Rajamäki, R., Rämä, P., Luoma, J., Beilinson, L. 2005. Tielikenteen turvallisuustoimenpiteiden arviointi ja kokemukset liikenneturvallisuussuunnitelman laatimisesta (Evaluation of road traffic safety measures and experience of preparing a traffic safety programme). Helsinki. Ministry of Transport and Communication. LINTU Reports 1/2005. ISBN 951-723-750-2. http://www.lintu.info/lintu_TEPA.pdf
- ◆ VTT Technical Research Centre of Finland, harri.peltola@vtt.fi, +358 20 722 6200

27.3.2 *Cost-benefit analysis*

- ◆ Finland: TARVA, safety evaluation programme of road improvements*** (Recommended for European / National Handbooks)

The software TARVA contains accident data for all roads in Finland and can be used to estimate changes in the numbers of injury accidents and fatalities which may be expected to result from safety measures. Monetary benefits and costs can also be calculated.

Time: Permanently since 1994.

Responsibility: The Finnish Road Administration

Incentives: Yes, regular process evaluations, monetary incentives for responsible persons (personal bonuses) and for organisations.

Level: Country and districts.

Formal (process) evaluation: Yes process evaluations are conducted regularly.

BP: Using same safety evaluation procedure for all road improvements makes it possible to select best safety measures for implementation and sum up total effects of road improvements, including benefit-cost analysis. Having consistent background data and reliable evaluation of the current safety situation together with the best safety estimates from whole Europe makes traffic safety evaluations comparable and based on most up to date research results. Knowledge on the effects of measures increases because the collected information on measures can be used as a source for research locations. The programme is easily applicable and flexible, evaluations are regularly carried out, and incentives for its effective use are provided.

Potential barriers: The effective use of the programme requires some expertise and reliable information of accidents and safety effects of measures. Accident database and accident models need to be modified for respective country.

Information / contact:

- ◆ <http://www.tarva.net/tarvaintro.asp>
- ◆ <http://ptl.fi/NVFnorden/priv/nvf52/seminarer.htm>
- ◆ Juhani Mänttari /Finnish Road Administration Juhani.Manttari@tiehallinto.fi , +358 20 422 2503

27.3.3 *Road safety observatories*

- ◆ Spain: National Road Safety Observatory**

The tasks of the observatory include accident data collection, a research programme, and the design and implementation of a national Road Traffic Safety Strategy. The concept is in line with the European Road Safety Observatory concept. Quantitative goals are set for each safety project.

Time: Permanently since 2004.

Responsibility: Spanish General Directorate for Traffic under the Ministry of the Interior.

Level: National.

Incentives: Progress is monitored, deviation from goals leads to modifications of resources / procedures.

Formal (process) evaluation: No.

BP : The observatory promotes research and coordination within road safety work and contributes to a scientifically based road safety strategy.

Potential barriers: It is unclear how the observatory actually affects the implementation of road safety measures.

Information / contact:

- ◆ http://www.dgt.es/dgt_informa/observatorio_seguridad_vial/index.htm
- ◆ Spanish Directorate General for Traffic - DGT, Ministry of Interior: www.dgt.es ; Contact person: Candelaria Mederos tel. +34 91 301 82 94

27.4 Resource allocation processes

27.4.1 Resource allocation according to efficiency criteria

- ◆ Belgium: Road Safety Fund*** (Recommended for European / National Handbooks)

The fund receives money from fines paid for traffic offences and gives financial support to police services for road safety actions (enforcement), that focus on speeding, DUI, seat belts, heavy road transport, dangerous parking, aggressive behaviour in traffic, or weekend accidents. Expenses have to be justified, and money that has not been spent or justified can be asked back.

Time: Permanently since 2004.

Responsibility: Budgets come from fines paid for traffic tickets.

Incentives: Yes, money can be called back.

Level: National, funds can be used by the federal police and by all local police forces.

Formal (process) evaluation: Yes, process evaluation. Effects on accidents have not (yet) been evaluated.

BP: The fund has led to improved and increased enforcement activities for types of traffic behaviour that are known to contribute to many severe accidents. Activities are based on action plans, and the quality and effectiveness of these plans must be evaluated. There are incentives for effective enforcement measures because unjustified money can be called back. The measure is cheap as it finances itself.

Potential barriers: The way money is divided is still a point of discussion. Other potential problem issues, like unclear responsibilities, or lack of funding, incentives, quality control etc. do not seem to apply to this measure.

Information / contact:

- ◆ www.mobilit.fgov.be/nl/index.htm (dutch); www.mobilit.fgov.be/fr/index.htm (French)
- ◆ Federale Overheidsdienst Mobiliteit en Vervoer (Federal Public Survice); Tel.: 0032 2 277 31 11; Mail: info.mob@mobilit.fgov.be
- ◆ Austria: Austrian Road Safety Fund**

The fund receives money from fees paid for customized license plates and gives financial support to safety measures 7 projects (especially education), research and information.

Time: Permanently since 1989.

Responsibility: Ministry for Transport.

Incentives: No.

Level: National and regional.

Formal (process) evaluation: No.

BP: The fund uses an effective way to raise money and has low administration costs.

Potential barriers: The emphasis is on measures that are not known to be effective.

Information / contact:

- ◆ Ministry of Transportation (BMVIT): www.bmvit.gv.at

27.4.2 *Resource allocation to support priority strategies*

- ◆ France: Incentive programmes for local authorities***

The programme consists of a combination of measures, incl. funding, information, and technical assistance. It aims to encourage implementation of measures to reduce pedestrian accidents in urban areas with major through traffic routes. Incentive funding is provided to local innovative schemes. Measures aimed mainly at reducing speed and making vulnerable road users more visible.

Time: 1984 until 1988.

Responsibility: Directorate for Road Safety under the Ministry of Transport. On a local level, municipal councils are responsible for the implementation of schemes. All participants contribute to the costs.

Incentives: Providing incentives is the aim of the programme.

Level: Local.

Formal (process) evaluation: Yes, process evaluations, and evaluations of effects on speed, accidents, and environmental effects yielded generally positive results.

BP: The programme supports distribution of budgets according to expected reductions of accidents between through traffic and local traffic / pedestrians. Evaluations showed reductions of speed and the numbers of accidents. Positive environmental effects and improved cooperation between local and central authorities have been reported.

Potential barriers: There was not enough follow-up of the completion and effects of the local schemes. Incentives were given for the implementation, but not for the successful implementation of safety measures.

Information / contact:

- ◆ Muhlrud N., Faure A. (1988). Local road safety policies : a didactical model. INRETS Report no. 77, Arcueil, France.
- ◆ Faure A., de Neuville A. (1992). Safety in urban areas : the French Program "Safer city, accident-free districts". Accident Analysis and Prevention. Vol. 24, pp. 39-44.
- ◆ Netherlands: Stimulation Plan "actie -25%"

The goal of the plan is to reduce the number of fatalities in municipalities by 5% over a period of 3 years. It is derived from the national goal to reduce the number of fatalities by 25% in 2000. The government gives a premium per inhabitant to each participating municipality, and a premium per reduced road fatality if the goal of 5% reduction was reached. As a consequence, the use of infrastructure and police enforcement measures decreased, while information and education measures increased.

Time: The measure was executed 1987-1989.

Responsibility: National government. Municipalities are responsible for how the money is spent. National and local governments bear the costs.

Level: National / municipalities.

Incentives: Premiums are provided in case of goal attainment..

Formal (process) evaluation: No

BP: The plan is cheap and raises public attention for road safety.

Potential barriers: The plan is limited in time frame (3 years) and level (municipalities). Budgets were too low. The priority for infrastructure and enforcement measures decreased while measures which are not known to be effective are increasingly applied.

Information / contact:

- ◆ Dutch Ministry of Transport, Public Works and Water Management Postbus 209012500 EX Den Haag The Netherlands Tel: 0031-70 351 61 71 Fax: 0031-70 351 78 95

27.5 Formal coordination mechanism for road safety policy

27.5.1 *Advisory councils on a national level on a national level*

- ◆ Belgium: Federal Road Safety Commission***

The commission consists of representatives of private and public stakeholders. It was created in order to follow up a road safety policy that had been developed in 2002. Its tasks include the following-

up of the national road safety policy and measures, and developing road safety indicators. The overall target is to reduce the number of fatalities by 50% in 2010 (compared to 1998-2000).

Time: Permanently since 2002.

Responsibility: The Belgian Road Safety Institute (IBSR-BIVV) and the Ministry of Mobility and Transport are responsible. IBSR-BIVV bears the costs.

Incentives: Indirectly via midterm evaluations.

Level: National.

Formal (process) evaluation: A process evaluation is in preparation.

BP: The council helps to direct “all noses in one direction”, which is important because of the consultative structure of road safety policies with divided responsibilities in Belgium.

Potential barriers: The commission has no separate budget.

Information / contact:

- ◆ <http://www.ibsr.be/main/PublicatieMateriaal/Staten-Generaal%20Verkeersveiligheid.shtml?language=fr>
- ◆ The Belgian Road Safety Institute (IBSR-BIVV): www.bivv.be
- ◆ Slovakia: Council of the Government of the Slovak Republic on Road Safety*

The council is a permanent advisory, coordination and initiative body which is working at different levels. It does not intervene in actions of central or local authorities, but provides guidelines. Activities and measures are summarized in a National Road Safety Plan.

Time: Permanently since 2004.

Responsibility: The Slovak government is responsible and bears the costs.

Level: National.

Incentives: No.

Formal (process) evaluation: No.

BP: The council supports coordination and commitment within road safety.

Potential barriers: The guidelines are not obligatory; there are no incentives to follow them. No clear responsibilities are assigned. There is a lack of funds, and lack of long-term processes. It is unclear if and how the council affects road safety work in practice.

Information / contact:

- ◆ <http://www-8.vlada.gov.sk/index.php?ID=1120>
- ◆ <http://www.telecom.gov.sk/index/go.php?id=1075>
- ◆ Minister of Transport, Posts and Telecommunications of SR on the government proceedings. Contact: MTPT SR – Ing. Štefan PRISTAŠ – Council Secretary Tel.: +421 2 594 94 521; stefan.pristas@telecom.gov.sk

27.5.2 *Decentralised coordination mechanism*

◆ Netherlands: Decentralization policy***

A covenant is made between the national government and all Dutch provinces and municipalities about the distribution of finances by regional road safety bodies which are located in the provinces. Finances are provided by the national government and spent mostly on enforcement and education activities. The regional road safety bodies consist not only of the various levels of the government, but also of interest organisations, police, schools etc.

Time: Permanently since 1994.

Responsibility: Ministry of Transport. The provinces are responsible for the distribution of funds.

Level: Coordinated between national, regional, and municipal level.

Incentives: No.

Formal (process) evaluation: Yes, the effectiveness of the regional road safety bodies has been evaluated with positive results.

BP: The decentralisation policy is successful in focusing attention on road safety in provinces and municipalities and in stimulating and coordinating activities on and between different governmental levels.

Potential barriers: There are no goals and no incentives. The focus is only partly on measures which are known to be effective (enforcement).

Information / contact:

- ◆ Ministry of Transport: Ministerie van Verkeer en Waterstaat; Postbus 209012500 EX Den Haag; tel: ++31-70 351 61 71; Fax: ++31-70 351 78 95IPO (inter provincial contact); Postbus 161072500 BC Den Haag Tel: ++31-70 888 12 12; Fax: ++31-70 888 12 80; ipo-info@wb.ipo.nlVNG (Association of Netherlands Municipalities) Vereniging van Nederlandse Gemeenten; Postbus 30435 2500 GK Den Haag Phone: +31 70 373 8393Fax: + 31 70 363 5682; vng@vng.nl

◆ Switzerland: Safety delegates**

The delegates are for the most part employed by communes. They advise local authorities in safety matters (not only road safety), and they support national safety campaigns.

Time: Permanently since 1973.

Responsibility: Swiss Council for Accident Prevention (bfu). The Swiss Council for Accident Prevention bears the costs (not including salaries).

Incentives: No.

Level: Local.

Formal (process) evaluation: Yes, but not with focus on effectiveness or road safety improvements.

BP: The delegates improve coordination within road and other aspects of safety. They may improve the integration of safety matters in other activities on a local levels

Potential barriers: There are educational and supporting activities for the delegates, but no procedures to assure the effectiveness of their activities. Their advices are not binding.

Information / contact:

- ◆ Swiss Council for Accident Prevention bfu: <http://www.bfu.ch/>
- ◆ Germany: Local accident commissions**

The commissions consist of representatives of police, road traffic authorities, and road construction and maintenance departments. Their aim is to analyze accidents and accident locations with the use of accident maps, and to identify black spots. On black spots infrastructure measures are applied.

Time: Permanently since ca. 1960.

Responsibility: Local authorities.

Incentives: The work of the best commission is rewarded each year (since 2001).

Level: Local, each local authority in Germany has an accident commission

Formal (process) evaluation: No (but indirectly through the safety reward).

BP: The commissions are efficient in removing black spots. Organisational structures and cooperation within road safety work are also improved.

Potential barriers: The effectiveness in reducing accidents depends on the quality of the identification of black spots. The commissions have no own budget. There seems to be no system for quality control.

Information / contact:

- ◆ <http://www.verkehrstechnisches-institut.de/content/unfallkomm.htm>

27.5.3 *Thematic coordination mechanism*

- ◆ Austria: Task group "On foot" in Vienna***

The group consists of different offices of the City of Vienna. Its tasks are exchange of information, planning measures for pedestrian safety, lobbying for pedestrians.

Time: Permanently since 2001.

Responsibility: Chamber of labour Wien

Incentives: No.

Level: Municipal.

Formal (process) evaluation: Yes, process evaluation.

BP: The group addresses a road safety problem which is severe but which usually lacks public attention and lobbying. It contributes to the implementation of effective measures which also have posi-

tive environmental and social effects. The group also contributes to the common traffic master plan of the city.

Potential barriers: Lack of coordination with other aspects of road safety.

Information / contact:

- ◆ www.zufuss.at
- ◆ Antonia Coffey, Michael Klug, kommunalpolitische Abteilung der Arbeiterkammer Wien:
Antonia.Coffey@akwien.at
Michael.Klug@akwien.at

27.6 Safety incentive schemes

- ◆ Netherlands: Improving driving behaviour of motorists by rewarding**

Vehicles are equipped with measurement equipment for speed and headways. Feedback is given to the drivers by green or yellow icons. Good behaviour leads to benefit points for which the participants could choose gifts.

Time: January – June 2005.

Responsibility: Lease Plan Nederland, financially supported by the Ministry of Transport.

Incentives: Providing incentives is the aim of the programme. The programme itself is voluntary.

Level: Individual company.

Formal (process) evaluation: Yes, during the test, speed decreased, and headways increased.

BP: The programme addresses types of traffic behaviour which lead to many serious accidents, high speed and short headways.

Potential barriers: Problems with technical equipment and with acceptance (by users and the police) have been reported. There are no incentives for participation in the programme. No long-term effects have been found.

Information / contact:

- ◆ Belonitor, de kracht van belonen. Rijkswaterstaat, Adviesdienst verkeer en vervoer, (Ministry of Transport, Public Works and Water Management, AVV Transport Research Centre) 2006.
- ◆ Mazureck, U. Rewarding safe driving behaviour: Influencing following distance and speed. Paper presented at TRB 85th Annual Meeting, Washington, January 2006.
- ◆ www.rws-avv.nl
- ◆ www.wegennaardetoekomst.nl
- ◆ AVV Transport Research Centre website: www.rws-avv.nl phone: +31 10 282 5751;
Roads to the future programm (Wegen naar de toekomst) website:
www.wegennaardetoekomst.nl phone: +31 15 251 74 25

28 Annex 3:

Questionnaire

Name of the measure

- ◆ Please give the name of the measure as it is called in your country, and a common English name of the measure:

Description of the measure

- ◆ Please give a short description of the measure.
- ◆ Can or should the measure be combined with other measures to optimise the impact? Which measures are these?

Information source and contacts

- ◆ Please give relevant references to the measure, e.g. web-sites or reports.
- ◆ Please give information about the institution / organisation that is responsible for the measure, and contact information (name of the institution, e-mail, telephone number):

Implementation of the measure

- ◆ **When** was the measure implemented?
- ◆ **Status of implementation:** What is the current status (e.g. fully implemented, partly implemented, implementation under progress)?
- ◆ **Duration of the measure:** Is the measure implemented permanently / once or for periods / in intervals / as a pilot scheme / ...?
- ◆ **Level and density of implementation:** At what level and in which density is the measure implemented (e.g. number of units on national / regional / local / ... level)?
- ◆ How long does it **take to implement** the measure (e.g. may be implemented immediately, in 5 years, long term)?
- ◆ When can (90% of the) effects be expected (e.g. immediately, in 5 years, long term)?

In which other European countries is the measure currently in use or available?

- ◆ Please give information, if available.

Who is responsible for the measure?

- ◆ Responsibility refers to implementation, enforcement, incentives to use the measure, and activities related to the measure. E.g.: Legal form of implementing body/bodies, international organisation, authority, industry, NGOs, others.

What is the legal background for implementation of the measure?

- ◆ Legal background includes laws, directives, norms, certificates, incentives, voluntary measures.

Implementation and realisation of the measure

- ◆ Are any specific **road safety targets** associated with the measure? Road safety targets are especially relevant if the measure has been classified as “Road safety targets” or “Long term road safety programme”, but also other measures may involve goal-setting. Please describe,
 - ◆ what type of goals are being set?
 - ◆ to what degree the goals are challenging, but in principle attainable?
 - ◆ which processes are involved in goal-setting?
- ◆ What is the level of investment of political prestige in road safety? This criterion is intended to describe the political commitment to road safety in qualitative terms. Is it an issue high on the political agenda? Is it a topic often addressed by the head of state or the head of government? Is there a high publicity level or does the issue get less attention?
- ◆ How are **responsibilities** for implementation, follow-up etc. assigned?
- ◆ How are **resources** allocated?
- ◆ What happens if desired results are not achieved or if targets are not met?
- ◆ What are **sources** for your information?

Focus of the measure

- ◆ Is there a specific road safety problem the measure is intended to solve? The road safety problem may be defined in terms of types of accidents, groups of road users, accident locations, or types of vehicles.
- ◆ In what way does the measure improve road safety?
- ◆ Are quantitative or qualitative goals set for the measure?
- ◆ What are **sources** for your information?

Size of the road safety problem

- ◆ If the measure is intended to solve a specific road safety problem, how large is this problem? The size of the problem may be defined in terms of total number of fatalities or (severe) injuries associated with the road safety problem, or in terms of accident contributing factors.
- ◆ What are **sources** for your information?

Expected effects

- ◆ Please describe if effects of the measure have been estimated before it was implemented, and if these have been taken into account in the planning and implementation process.
- ◆ What are **sources** for your information?

Evaluation of effects

- ◆ Is the measure related to attitudes and behavioural consequences?
- ◆ Has there been a general **process evaluation** of the implementation or realisation of the measure? If so, please describe the evaluation study and results.
- ◆ Have **effects on accidents or accident contributing factors** been evaluated? If so, what are the effects and how have they been evaluated?

- ◆ Have **other effects** of the measure been evaluated? Other effects include (intended or unintended) effects on other factors than accidents or accident contributing factors.
- ◆ What factors contribute to or limit the effectiveness of the measure?
- ◆ What are **sources** for your information?

Costs and benefits

- ◆ What **financial cost** are associated with implementation of the measure? Costs in financial terms include investments, maintenance costs, enforcement costs, reward systems, administration costs, long-term costs (ecological or social costs).
- ◆ Who bears the financial costs of the measure (e.g. user group, state government)?
- ◆ What **other types of costs** are there, for example ecological or social consequences, mobility, etc.?
- ◆ What **financial benefits** are associated with implementation of the measure? Benefits in financial terms include cost savings, e.g. effects of reduced accident costs. Please specify the exact figures used in the analysis (e.g. the economic value attached to a saved life).
- ◆ What **other** types of benefits are there, for example environmental or social effects, and traffic performance?
- ◆ Has a benefit-cost-ratio been computed for the measure in your country?
- ◆ What are **sources** for your information?

Acceptance and consensus

Acceptance of the measure includes **public acceptance, acceptance by road users, policy makers, and other stakeholders (e.g. automotive industry)**. Other relevant issues can be political, legal, financial, technical and administrative aspects.

- ◆ To what degree is there acceptance for the measure? If possible refer to empirical quantitative or qualitative **studies**. Please include information about the type and design of the study.
- ◆ If the measure has been classified as subcategory “Long term road safety programme”: Is there consensus on the road safety programme? Is the road safety programme broadly supported by policy agencies, or do some agencies feel less committed to carrying out the programme? Is there consensus on policy measures or are some of these highly controversial?
- ◆ What are **sources** for your information?

Sustainability

Sustainability includes **long-term effects** and **changes of effects** over time. Effects are considered to be sustainable when the effect is permanent and does not decrease over time.

- ◆ To what degree are the effects of the measure expected to be sustainable? The assessment can be quantitative or stated in qualitative terms. If available, please refer to empirical studies.
- ◆ What are **sources** for your information?

Transferability

Transferability includes prospects for using the measure successfully in other **countries** or **regions**, or on a **larger scale**.

- ◆ To what degree is the measure transferable? If available, refer to studies of the measure in other countries, explicit comparison with other countries, and publications about the measure in other countries.
- ◆ Which factors contribute to or limit the transferability of the measure? Contributing or limiting factors include **conditions** and potential **obstacles** for the effectiveness of the measure in other countries or regions, or on a larger scale, and **specific requirements** necessary which may be difficult to fulfil elsewhere.
- ◆ What are **sources** for your information?

Resume: Why should the measure be included in the list of best-practice road safety measures in Europe?

- ◆ Please give a short statement about what qualifies the measure as “Best Practice” in Europe.