

# **Evaluation of environmental management systems within the administrative sector of the Finnish Ministry of Transport and Communications**



Authors (from body; name, chairman and secretary of the body) Mari Hjelt, Ville Valovirta, Ylva Gilbert, and		Type of publication Evaluation report	
Alina Pathan		Assigned by Ministry of Transport and Communications	
		Date when body appointed	
Name of the publication Evaluation of environmental management systems within the administrative sector of the Finnish Ministry of Transport and Communications			
Abstract <p>When the Ministry of Transport and Communications in 1999 renewed its second environmental programme and strategic environmental guidelines for organisations within its administrative area, the format was based on the ISO 14001 Environmental Management System standard. In 2004, the Ministry commissioned an evaluation of environmental management systems within the ministerial administrative sector from a consortium consisting of Gaia Group Oy, Net Effect Oy, and Suomen Laatu keskus Oy. The twelve organisations within the administrative sector were evaluated both individually and as an entity in relation to the administrative sector's joint environmental management work in order to assess how aligned with a common strategy the individual organisation's environmental programmes are. The main objective was to evaluate the practices related to the environmental management systems and make recommendations for improvements. The evaluation did not cover the assessment of actual environmental impacts resulting from each organisation's activities.</p> <p>This summary report presents the evaluation methodology, the main conclusions drawn and the recommendations made based on the evaluation. By necessity, the presentation and effective communication of the results and recommendations require some elaboration of the context and the organisations concerned. The focus of the report is on those results that cover the administrative sector as a whole and on such recommendations that could be of interest to policy makers in other countries. Furthermore, some of the experiences related to the evaluation process itself are presented. The complexity of the evaluation, the level of commitment from each participating organisation and the resources provided were at an exceptionally high level and resulted in an internationally unique exercise at the level of a broad, ministerial administrative sector. Hence the experiences from the actual process may prove valuable when planning similar evaluations of public policy programmes.</p> <p><i>This report is a summary based on the report by Mari Hjelt, Päivi Strömmer, Juha Vanhanen and Petri Virtanen, Evaluation of environmental management systems within the Ministry of Transport and Communications' administrative area, Publications of the Ministry of Transport and Communications 57/2004 (in Finnish).</i></p>			
Keywords Environmental management systems, environmental impacts, evaluation, transport			
Miscellaneous Contact person at the Ministry: Ms Raisa Valli			
Serial name and number Publications of the Ministry of Transport and Communications 23/2005		ISSN 1457-7488 (printed version) 1795-4045 (electronic version)	ISBN 952-201-346-3 (printed version) 952-201-347-1 (electronic version)
Pages, total 46	Language English	Price € 10	Confidence status Public
Distributed by Edita Publishing Ltd		Published by Ministry of Transport and Communications	



Författare (uppgifter om organet: organets namn, ordförande, sekreterare) Mari Hjelt, Ville Valovirta, Ylva Gilbert och		Typ av publikation Utvärderingsrapport	
Alina Pathan		Uppdragsgivare Kommunikationsministeriet	
		Datum för tillsättandet av organet	
Publikation Evaluering av miljösystem inom Finlands kommunikationsministeriets förvaltningsområde			
Referat <p>Miljöarbetet inom kommunikationsministeriets förvaltningsområde sammanfattades år 1999 i form av ett miljöprogram enligt principerna för ISO 14001. År 2004 beställde kommunikationsministeriet en evaluering av förvaltningsområdets miljösystem av ett konsortium, bestående av Gaia Group Oy, Net Effect Oy och Suomen Laatukeskus Oy. Evalueringen omfattade tolv organisationer inom förvaltningsområdet. De utvalda organisationernas behandlande av miljöärenden evaluerades både enskilt och i relation till ministeriets hela förvaltningsområdes gemensamma miljöarbete. Projektets ändamål var dels att analysera hur förvaltningsområdets miljösystem fungerar i praktiken och dels att utarbeta rekommendationer för utvecklings åtgärder. Evalueringen omfattade inte en analys av organisationernas verksamhets direkta miljökonsekvenser.</p> <p>Denna rapport sammanfattar evalueringens metodik, resultat och rekommendationer. För att presentera resultaten och effektivt kommunicera rekommendationerna, har en kort översikt av evalueringssammanhanget och de relevanta organisationerna inkluderats i denna rapport. Sammanfattningen är fokuserad på de resultat som berör förvaltningsområdet som en helhet och de rekommendationer som anses kunna vara av intresse för beslutsfattare i andra länder. Erfarenheter från själva evalueringsarbetet presenteras också till en viss grad. Evalueringens relativt komplicerade omfattning tillsammans med de deltagande organisationernas höga engagemang ledde till ett slutresultat som kan anses vara unikt även på internationell nivå. Erfarenheterna från själva evalueringsprocessen kan även visa sig värdefulla i planeringsskedet av liknande program evalueringar inom andra förvaltningsområden.</p> <p><i>Denna publikation är ett sammandrag baserat på publikationen Evaluering av miljösystem inom kommunikationsministeriets förvaltningsområde (Kommunikationsministeriets publikationer 57/2004, publicerat på finska) av Mari Hjelt, Päivi Strömmer, Juha Vanhanen och Petri Virtanen.</i></p>			
Nyckelord Miljösystem, miljökonsekvenser, evaluering, trafik			
Övriga uppgifter Kontaktperson vid kommunikationsministeriet: Raisa Valli			
Seriens namn och nummer Kommunikationsministeriets publikationer 23/2005		ISSN 1457-7488 (trycksak) 1795-4045 (nätpublikation)	ISBN 952-201-346-3 (trycksak) 952-201-347-1 (nätpublikation)
Sidoantal 46	Språk engelska	Pris 10 €	Sekretessgrad offentlig
Distribution Edita Publishing Ab		Förlag Kommunikationsministeriet	

# CONTENT

<b>FOREWORD .....</b>	<b>1</b>
<b>1. INTRODUCTION .....</b>	<b>3</b>
<b>2. THE FINNISH TRANSPORT ORGANISATIONS COVERED IN THE EVALUATION .....</b>	<b>5</b>
2.1 THE ADMINISTRATIVE SECTOR OF THE MINISTRY OF TRANSPORT AND COMMUNICATIONS .....	5
2.2 ENVIRONMENTAL IMPACTS FROM TRANSPORT AND RELATED ORGANISATIONAL DIFFERENCES .....	7
<b>3. THE ENVIRONMENTAL MANAGEMENT SYSTEMS OF THE MTC'S ADMINISTRATIVE SECTOR.....</b>	<b>10</b>
3.1 ENVIRONMENTAL MANAGEMENT SYSTEMS – DEFINITIONS .....	10
3.2 THE ADMINISTRATIVE SECTOR'S ENVIRONMENTAL PROGRAMME .....	11
<b>4. OBJECTIVES OF THE EVALUATION AND THE EVALUATION PROCESS. 14</b>	
4.1 PREPARATION AND DESIGN OF THE EVALUATION.....	14
4.2 EVALUATION CRITERIA.....	15
4.3 THE EVALUATION PROCESS.....	16
<b>5. SUMMARY OF EVALUATION RESULTS.....</b>	<b>20</b>
5.1 THE STATUS OF THE EMS WITHIN EACH EVALUATED ORGANISATION .....	20
5.2 THE STATUS OF THE MTC ADMINISTRATIVE SECTOR'S OVERARCHING EMS.....	22
5.3 RECOMMENDATIONS .....	28
<b>6. LESSONS LEARNT – FOLLOW-UP ACTIONS AND KEY FACTORS FOR SUCCESSFUL EVALUATION.....</b>	<b>34</b>
6.1 USE OF THE EVALUATION RESULTS .....	34
6.2 KEY FACTORS FOR SUCCESSFUL EVALUTION .....	35
<b>APPENDIX. EVALUATION THEMES AND THE SPECIFIC EVALUATION QUESTIONS RELATED TO THE THEMES .....</b>	<b>37</b>

## Foreword

This report summarises the results and development recommendations from an external evaluation of the environmental management system of the administrative sector of the Finnish Ministry of Transport and Communications (MTC). The evaluation objective was to further develop the environmental management of the administrative sector. This short summary report is published in English in the hope that the experiences gained and the conclusions drawn will prove of use to other countries and other organisations. By necessity, the presentation and effective communication of the results and recommendations require some elaboration of the context and the organisations concerned. However, a detailed description of the organisation of the Finnish transport sector's administration has, as far as possible, been avoided.

A cornerstone of Environmental Management Systems is the principle of continuous development, which we have tried to incorporate in the MTC administrative sector's environmental work. For the past ten years, the administrative sector has had a joint environmental programme. During this time, a more systematic approach to environmental work has gradually developed.

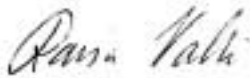
Learning from past experiences has been a central element of the continuous development work. However, in order to learn, outside expertise is sometimes needed. When developing the environmental programmes, we have cooperated both with the environmental administrative sector and with NGOs. This cooperation has helped us visualise our environmental management targets in the broader context of societal targets, and identify steps we should take to improve the environment. Monitoring of the environmental programmes and their outcomes has been another essential measure for achieving continuous development. In contrast, the development of both policy measures and the environmental management system has relied on internal evaluations. We considered that we had now arrived at a point where internal evaluation was no longer sufficient. We commissioned an external evaluation, with the aim of developing our own actions and management of environmental issues. The evaluation focused on development needs in two main areas: Cooperation within the administrative sector; and the administrative sector's joint approach to managing environmental issues. Hence the focus of the evaluation was largely on those issues that could be done better, rather than on those that are already well managed.

Partly as a consequence of European level development during the last few years, several changes in the Finnish transport sector have taken place. These changes have impacted on how the Ministry can steer organisations within its jurisdiction. New organisations have been created and the roles of existing organisations have changed. Work that was previously done by the administrative sector itself has now been outsourced. These changes necessitate the development and re-evaluation of how environmental issues are managed. We considered that environmental work can only be effective if it can be linked to the preparation and execution of transport policy and bring the work done in several

different organisations together into a coherent whole. Our central objective was that the evaluation results and recommendations would be used in the preparation of the strategy for managing environmental issues for the MTC administrative sector's third environmental programme – Environmental guidelines for the transport sector up to year 2010. A central aim was therefore to develop policy measures and environmental management in such a manner that the environmental programme's objectives can be reached and planned measures translated into practice in a more efficiently.

We hope that the report will encourage development of innovative, new measures for environmental management and promote the integration of environmental issues into transport policy.

Helsinki, February 2005



Raisa Valli  
Senior Adviser, Environmental Affairs  
Ministry of Transport and Communications

## 1. Introduction

The administrative area within the Finnish Ministry of Transport and Communications' (MTC) jurisdiction, herewith referred to as the MTC **administrative sector**, has actively engaged in environmental work since the late 1980's. The first common environmental programme for the administrative sector was launched in 1994, followed by a second large environmental programme in 1999. The second, more ambitious, environmental programme broadly followed the format of an ISO 14001 certified Environmental Management System (EMS). The main features of an EMS were specified in the environmental programme, namely: The environmental policy of the ministry; planning principles; means and responsibilities for implementing environmental work covering the whole administrative sector; and guidelines to measure, evaluate and develop operations.

The EMS based approach covering the administrative sector of the ministry is quite unique. There are no other corresponding systems operational within either the Finnish national administration or, as far as known, in any other European countries. In accordance with EMS principles, continuous evaluation and follow up activities are seen as an essential part of development. In 2004, the MTC decided to evaluate the environmental work within its administrative sector. This evaluation formed part of the process to prepare a third environmental programme. The results from the evaluation were discussed and further guidelines for the preparation process were provided in meetings involving the top management from the organisations of the administrative sector. The new programme has since been finalised and was accepted in the beginning of 2005.

The evaluation covered 12 separate organisations within the administrative sector. The EMS of each organisation was evaluated, both individually and as part of a joint effort contributing towards the EMS of the MTC administrative sector as a whole. The main objective was to evaluate current practices and recommend development actions for future environmental work, both for individual organisations and at the level of a broad EMS for the administrative sector as a whole. The evaluation did not assess the actual environmental impacts of the transport sector in Finland, but focused on evaluating the functioning of the system.

This summary report presents the evaluation methodology, the main conclusions drawn and the recommendations made based on the evaluation<sup>1</sup>. The focus is on those results that cover the administrative sector as a whole and on such recommendations that could be of interest to policy makers in other countries. Furthermore, some of the experiences related to the evaluation process itself are presented. The complexity of the evaluation, the level of commitment from each participating organisation and the resources provided were at an exceptionally high level and resulted in an internationally unique exercise at the level of a

---

<sup>11</sup> The summary is based on the final report of the evaluation. Mari Hjelt, Päivi Strömmer, Juha Vanhanen and Petri Virtanen, Evaluation of environmental management systems within the Ministry of Transport and Communications' administrative area, Publications of the Ministry of Transport and Communications 57/2004. (In Finnish).

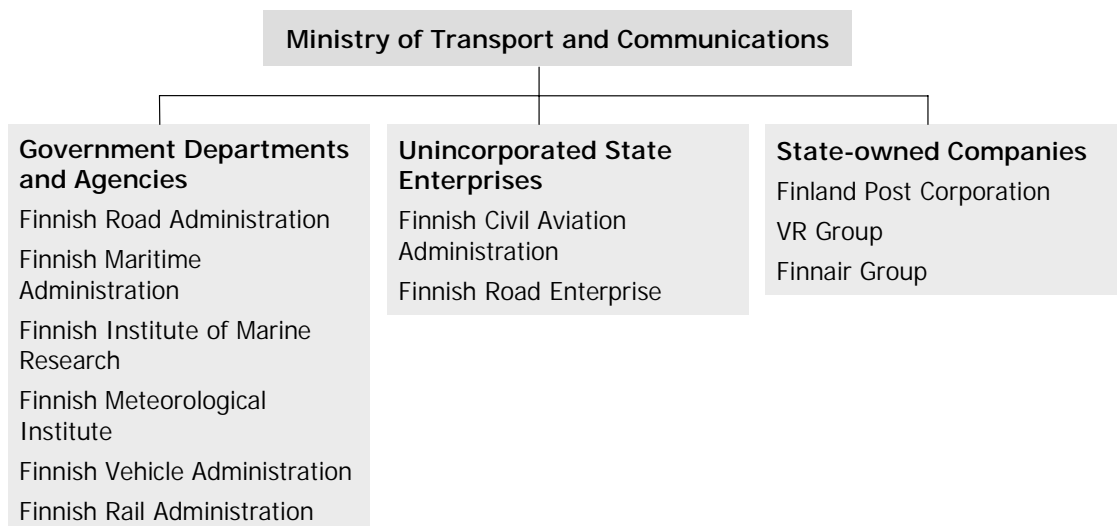
broad, ministerial administrative sector. Hence the experiences from the actual process may prove valuable when planning similar evaluations of public policy programmes.

In this report, the organisations covered by the evaluation are presented in Chapter 2, followed by an overview of the organisations' EMSs in Chapter 3. The objectives and implementation of the evaluation are then presented in Chapter 4, followed by the conclusions and recommendations resulting from the evaluation (Chapter 5). Chapter 6 describes how the results of the evaluation have been used and summarises key factors considered to have been essential for the success of the evaluation work.

## 2. The Finnish transport organisations covered in the evaluation

### 2.1 *The administrative sector of the Ministry of Transport and Communications*

The MTC administrative sector covers the operations of seven government departments and agencies; four incorporated state enterprises and seven state-owned companies as well as the operations of the MTC itself. Twelve of these organisations were covered in the evaluation (shown in Figure 2.1, one of the organisations is the Ministry itself). The evaluation focused on transport and thus only transport related agencies and organisations were included. Three state-owned companies - two transport operators and Finland Post Corporation - were included. Here it should be noted that the government is the sole owner of VR Group (railway operator) and Finland Post Corporation but is only one of the stakeholders in Finnair Group (national aviation carrier).



**Figure 2.1.** Organisations of the MTC administrative sector included in the evaluation

The MTC steers the organisations within its sector through different mechanisms. The evaluation focused on the operations and actions of each organisation. In order to understand the level at which the Ministry can affect and steer the environmental work, the different steering mechanisms applicable to each organisation must be clarified. Three main types of steering mechanisms were identified as particularly relevant for the evaluation: Budgetary control; ownership; and contractual agreements for service provision (See also Figure 2.2). Naturally, sectoral legislation also affects each organisation's operations. These differences must be taken into consideration when compiling development recommendations. It should also be noted that the organisational

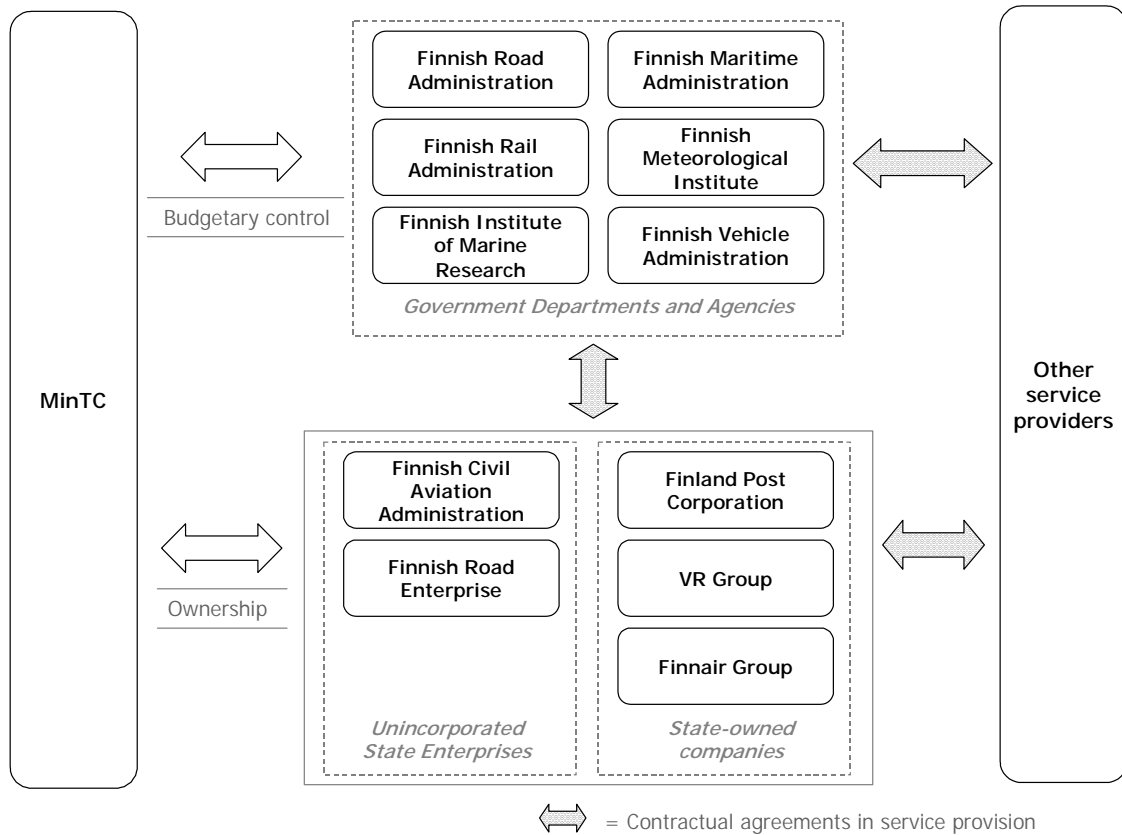
structures within the administrative sector are continuously being developed. For example, since the evaluation was performed, certain sections of the Finnish Maritime Administration were reorganised into an unincorporated state enterprise at the end of 2004.

**Government departments and budget-bound agencies** are in principal steered to a great extent by the Ministry, which sets their operational objectives and allocates resources for achieving these. The organisations together with the Ministry specify annual performance targets. The Ministry's monitors the implementation of operational objectives and the use of funds.

As far as the **unincorporated state enterprises** are concerned, the situation is more complex. From one point of view, unincorporated state enterprises can be regarded as budgetary controlled organisations. However, their budgetary objectives are set as monetary performance targets, where the organisations have the freedom to decide how these targets are achieved. Thus, budgetary control does not cover operational objectives such as management of environmental matters. However, service targets set by the government have an important role in defining societal targets for the unincorporated state enterprises. In practice, unincorporated state enterprises are steered by a combination of budgetary control and ownership.

Towards wholly or partially **state-owned companies**, the Ministry has the role of an owner, limiting its means to influence the companies' operational targets. In wider societal debate, government ownership has been criticised, partly because of irregularities concerning the government's role in decision-making in state-owned companies. In February 2004, the Council of State's decision in principal concerning the state's ownership policy was reformed, and four main principles established. In relation to management of environmental issues, the main principal established was that the companies' own decision-making bodies have the responsibility of all business related decision-making. The state has an equal position with the other owners. The main decision-making body of all the state-owned companies is the company's Board of Directors, responsible for the company's business operations and decision-making. Therefore, the state can influence environmental management in state-owned companies only indirectly, through appointing members to the Board of Directors and to supervisory boards, and through participation in general discussion and information exchange.

Steering mechanisms also cover **contractual agreements related to service provision**. Out of the evaluated organisations, such contractual agreements of service provision can, for example, be found between the Finnish Road Enterprise and the Finnish Road Administration as well as between the Finnish Rail Administration and VR Group. These mechanisms are important to take into account as the conditions set for the service provision often include also issues that are related to the management of environmental issues (i.e. the service provider might be required to have a certified EMS).



**Figure 2.2.** Evaluated organisations and control structures related to them

## ***2.2 Environmental impacts from transport and related organisational differences***

Road, rail and air traffic and shipping pollute the environment in many ways throughout their life cycle. The transport life cycle comprises the production of vehicles and fuels, construction of the necessary infrastructure, and their use and decommissioning. All these stages are a drain on natural resources and/or energy supplies and generate emissions. Most emissions are generated from vehicle use, whilst the production of vehicles and fuels, construction of the infrastructure and decommissioning mostly affect soil and water. One of Finland's major challenges and dilemmas concerning transport relate to its geography - distances are long, thus the relative level of emissions and other environmental consequences are relatively high<sup>2</sup>.

<sup>2</sup> See further information on the environmental issues of the Finnish transport system on the web-site of the Ministry: <http://www.mintc.fi/www/sivut/english/ymparisto/sivut/index.html>

The evaluation focused on assessing the extent to which the organisations could affect the level of direct or indirect environmental impacts linked to the traffic system. Firstly, organisations may cause **direct environmental impacts**, from transport movements and infrastructure building and maintenance. The environmental work of organisations with direct environmental impact focuses on managing these. Secondly, organisations may cause **indirect environmental impacts**. These can, for example, be related to administrative duties through which the operations of transport operators or infrastructure maintenance are controlled.

Regardless of the organisation's characteristic, the EMSs of the organisations within the MTC's administrative sector should cover both direct and indirect impacts of operations, and consider the operations as part of the traffic system as a whole. However, depending on the proportion of direct and indirect environmental impacts recognised for each organisation, the focus of the environmental work is somewhat different.

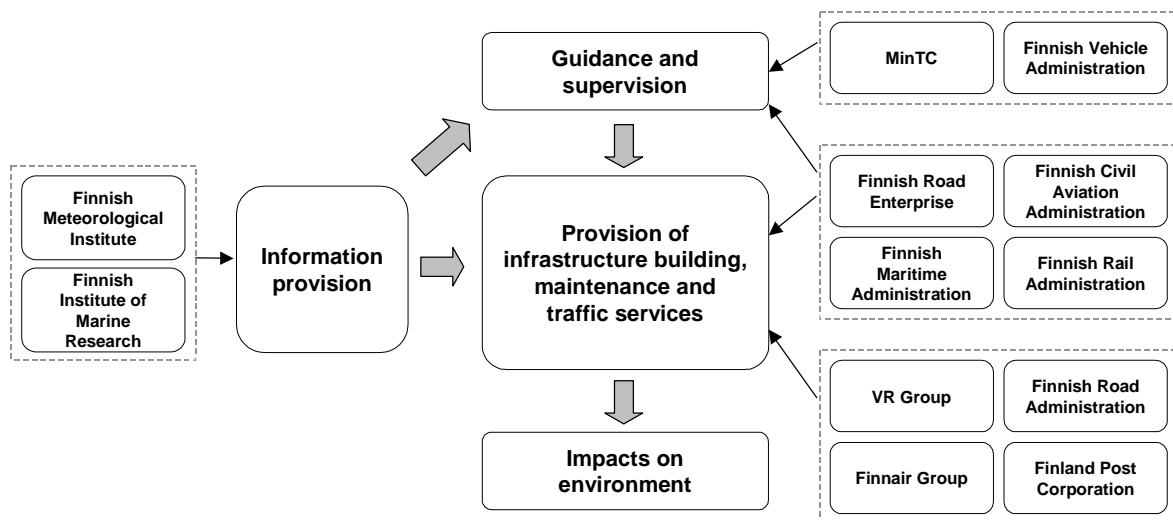
In general, managing direct environmental impacts resulting from an organisation's own operations is relatively straightforward and can be based on existing environmental standards, such as the ISO 14001. The environmental impacts of operations, which are directly related to traffic performances or infrastructure building and maintenance, can be clearly identified. Linking environmental impacts to the traffic system and managing the environmental issues is more straightforward the closer the organisations are to actual operational activities.

When looking at the environmental impacts of the traffic system and the EMS of the organisations in an administrative sector as a whole, it is important to also include indirect impacts of each organisation's core operations. This makes it especially challenging to develop an EMS for government departments and agencies, where the main focus of operations is on administrative duties. A similar challenge concerns research institutes, which influence environmental performance mainly by producing information that is further utilised by other actors. In some of the evaluated organisations, the distinction between the different aspects is not clear-cut, as the organisations have both administrative tasks and guidance and supervision duties, as well as significant environmental impacts from their own operations, linked to traffic performances and infrastructures.

In the context of this evaluation, the organisations have been classified into four different types, based on the organisations' different operations and roles. Each class of organisation differ in terms of environmental work and EMS structure. The classification and reasoning behind it of the concerned organisation's is described below and pictured in Figure 2.3.

1. **Environmental impact through authoritative duties.** Some of the authorities do not have operations with significant direct environmental impacts linked to the traffic system. However, authoritative duties include guidance, supervision and provision of information, all of which may influence the performance and choices made by other actors within the traffic system. Such indirect impacts can therefore be significant. Amongst the evaluated organisations, the MTC and the Finnish Vehicle Administration most clearly belong to this group.

2. **Environmental impact through authoritative duties and infrastructure and maintenance operations.** Some of the evaluated organisations have guidance, supervision and information provision duties as well as direct environmental impacts through their own, mainly infrastructure and maintenance related activities. Of the evaluated organisations, the Finnish Road Administration, the Finnish Rail Administration, the Finnish Maritime Administration and the Finnish Civil Aviation Administration belong to this group.
3. **Environmental impact through own operations.** Some of the evaluated organisations do not have authoritative duties and environmental impacts primarily arise as direct consequences of their own operations. The traffic operators and service providers - VR Group, Finnish Road Enterprise, Finnair Group and Finland Post Corporation - belong to this group.
4. **Indirect environmental impact through information provision.** The main task of research institutes is to provide information. Improved information affects the environment indirectly through influencing the actions of other actors. The research institutes themselves lack any direct mechanisms to influence other actors within the MTC administrative sector. Research institutes do not have operations with considerable environmental impacts on traffic performances or infrastructure changes. Out of the evaluated organisations, the Finnish Meteorological Institute and the Finnish Institute of Marine Research belong to this group.



**Figure 2.3.** Classification of the evaluated organisations based on the proportion of their direct environmental impacts relating to the traffic system arising from operations

### 3. The environmental management systems of the MTC's administrative sector

#### *3.1 Environmental management systems – definitions*

In the evaluation, particular attention was paid to the issue of whether specific environmental management actions can be regarded as being part of a broader organisational approach, i.e. whether a systemic approach that links together various actions and functions in a concise manner, including general target-setting and resource allocation, exists. This question was addressed both in the context of the individual organisation and of the whole MTC administrative sector.

An environmental management system can be defined as a systematic, holistic approach covering all undertakings. The environmental programme can be viewed as one tool within this larger environmental management system. To further define a systemic environmental management approach, the ISO 14001 standard organisational requirements were used as a baseline for the evaluation. The main areas addressed by the standard are:

- **Environmental policy.** The organisation's environmental policy should define the organisation's commitment towards a cleaner environment and take into account the nature, scope and environmental impacts of the organisation's operations. The environmental policy should also include a commitment to continuous improvement in environmental performance as well as pledge compliance with environmental requirements and legislation.
- **Planning.** This includes identifying the environmental aspects and recognising statutory requirements applying to the organisation's operations and setting environmental objectives, targets and programmes.
- **Implementation and operation.** This area of the standard includes: organisational structure and responsibility allocation; training, awareness and competence; communication; documentation requirements and document control; operational control; and emergency preparedness and response actions.
- **Checking and corrective action.** These include monitoring and measurement of operations, recording and investigating non-conformance and instigating corrective and preventive actions, as well as auditing the environmental management system.
- **Management review.** Regularly carried out management reviews should make use of follow-up and audit results, information related to achieving objectives and targets, feedback from stakeholders, evaluate the applicability of the EMS and issue guidelines for developing the EMS.

### ***3.2 The administrative sector's environmental programme***

Individual organisations within the MTC administrative sector started their environmental work at different times and consequently they are at different development phases. At the ministry level, systematic environmental work started relatively early, when in 1990 collection of statistics related to environmental impacts started. Prior to this, certain legislative measures directed towards diminishing environmental impacts had been taken. Thus the foundations for environmental work at the MTC were taken at that time, but it took some years to start actual environmental programme development.

The preparation of the first environmental programme for the administrative sector that would cover all the transport modes started in 1990. The transport sector's environmental impacts were evaluated using statistical information and transport and environmental expertise from the Finnish Statistic Centre. At the same time, the most significant areas for development were identified. The work was published in 'Traffic and Environment' (1992) report. Following the publication of this, defining the measures of the environmental programme was continued. Cooperation between organisations and corporations active in the environmental and transport sector was also continued. The actual time taken to prepare the first environmental programme of the administrative sector was rather lengthy, taking place between 1992 and 1994. The actual programme – 'Action programme for reducing environmental impacts of transport' - was adopted in 1994. This first programme focused on identifying the different environmental impacts of the Finnish transport system and creating a system for monitoring these impacts. It was among the first European transport sector environmental programmes. The programme was the first measure to gather together both internationally binding agreements and the national environmental policy into joint environmental actions and cooperation requirements for the administrative sector. It also incorporated the environmental work that had already started in some of the administrative sector's organisations (e.g. the then Finnish Road Administration) into the larger picture. The programme was monitored yearly (monitoring reports were prepared 1995, 1996, 1997 and 1998).

The programme had little elements for defining actual operations or general common targets and was more a tool for sharing information and establishing communication practices. The main aim of the programme was to act as a catalyser for the sector's different organisations to initiate their own environmental work and measures. This was a rather drawn-out process, requiring lengthy dialogues with the different organisations in order to achieve commitment and to lay a foundation for future work. As a result, important expert networks within the administrative sector were created during this period.

The second environmental programme of the administrative sector was launched in 1999. Finland joined EU in 1995 and this changed the situation considerably. The awareness of environmental issues and Finnish commitment towards solving these grew. At the same time the complexity of managing them increased, as the EU dimension and harmonisation of different operations had to be included. In 1998, the Finnish Government Programme for Sustainable Development was approved and consequently the MTC environmental

programme responded to its requirements. Overall, there was a need to create a new programme, which more clearly committed the administrative sector's organisations to a common approach to environmental work. The ambitious aim of moving from simply monitoring environmental impacts towards an EMS, where targets and common actions for achieving these are included, is reflected in the principles set for the programme during the planning phase:

- The transport sector will meet its responsibilities with respect to managing environmental issues. This includes recognising environmental impacts and areas for improvement and the setting of environmental performance objectives and targets.
- Each organisation within the sector is responsible for its operations and recognises how its actions may influence others. Each organisation should, where feasible, develop cooperation and take joint responsibility for common actions with the other organisations.
- Organisational differences must be taken into consideration when developing the EMS.
- All organisations should have an adequate monitoring system for managing environmental matters, where functionality and effectiveness can be verified by an independent source.
- Facilities for continuous development are to be provided and research activities and access to information guaranteed.

The preparation phase of the second programme was extensive and included over 50 partners. The collaboration between the different organisations in the administrative sector was intense. The report 'Environmental guidelines for the transport sector'<sup>3</sup> described the second environmental programme of the MTC for years 1999 – 2004. The programme was supported by a report defining long-term visions and targets for the transport sector<sup>4</sup> and the execution of the programme was monitored in three yearly follow-up reports.

However, the environmental programme of the MTC was a much larger undertaking than what is described in these reports. The programme was based on the principles of an EMS, as stated in the introduction of the programme report: *“The new programme, ‘Environmental guidelines for the transport sector’, forms the basis of an ISO 14001 environmental management system. The guidelines outline the long-term policy and targets, and the ways of achieving them. The joint guidelines for the administrative sector*

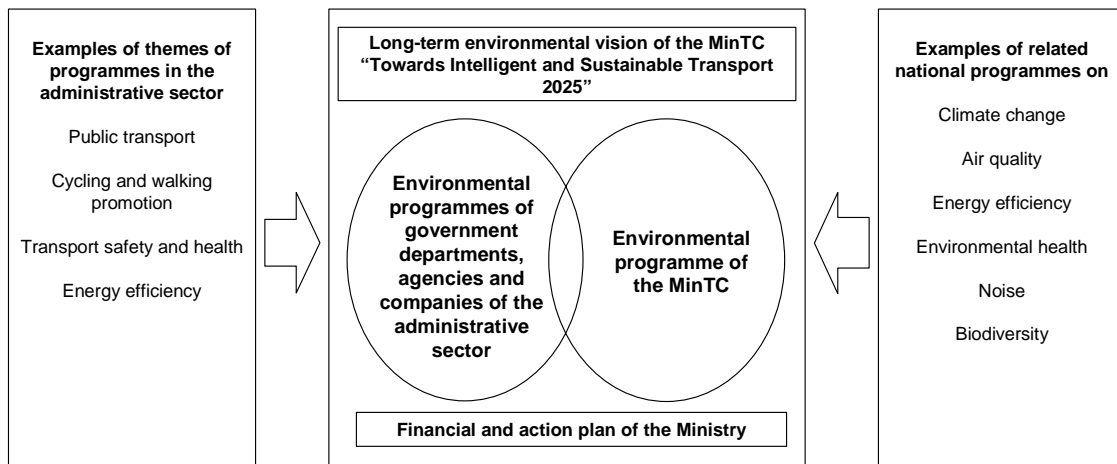
---

<sup>3</sup> A 15 page summary of the programme is available in English from the web-site of the MTC ([www.mintc.fi](http://www.mintc.fi))

<sup>4</sup> "Towards Intelligent and Sustainable Transport 2025" strategy paper. Ministry of Transport and Communications Finland. Programmes and Strategies 1/2000.

*are complemented by individual programmes and environmental management systems for each mode of transport.'*

The most important feature of the environmental programme is that it is based on both the work that each organisation performs and on the common, unifying EMS, built in cooperation with the sector's organisations. Thus, as a whole, the EMS of the administrative sector is linked to a large range of outlining programmes and strategies both at international, national and administrative area levels. These different programmes and strategies are pictured in Figure 3.1.



**Figure 3.3.** The sectors of the EMS of the organisations within the MTC administrative sector and their connections to other national and administrative sector programmes

The MTC environmental programme is largely based on a continuous dialogue with the individual environmental programmes and EMSs of the government departments, agencies and companies within the MTC administrative sector. Here both individual documents and information exchange networks offering opportunities for communication regarding environmental issues have a significant role to play. Within the administrative sector, three types of networks have been used as operational tools for implementing the sector's overall EMS.

- Firstly, one network covers environmental managers working at government departments and agencies.
- Secondly, an extension of this network also includes the environmental managers from the unincorporated state enterprises and state-own companies.
- Thirdly, the MTC has an internal network for information exchange within and between different Ministry units.

## **4. Objectives of the evaluation and the evaluation process**

This chapter gives an overview of the evaluation design and its objectives, summarizing the preparations made prior to the actual evaluation work and the methodology adopted.

### ***4.1 Preparation and design of the evaluation***

The evaluation project was initiated by the environmental managers' network (See Chapter 3) in accordance with the EMS principle of independent review. A project group, with representatives from the road, rail and aviation organisations, was formed to design the evaluation. The group used an external consultant to translate its ideas into management system terminology. From the beginning, the scope of the evaluation was limited as follows:

- The evaluation should cover the Ministry and its interactions with the individual organisations' central administration and management. The evaluation should not be extended to the regional level administrations or beyond central management of organisations.
- As all large administrations and corporations publish annual environmental reports, detailing and assessing the actual impact, the evaluation should focus on the management system itself, not on the environmental output in order to avoid double reporting.

The planning phase for defining the objectives and structure of the evaluation took approximately one year. At the end of 2003, the MTC announced an open call for tender for the evaluation of the environmental management systems in 12 organisations. A consortium of three consultancies – Gaia Group Oy, Suomen Laatu keskus Oy and Net Effect Oy – was awarded the evaluation contract.

The objective of the evaluation was to develop environmental management within the administrative sector. The evaluation focused on practical recommendations for improving the environmental management procedures, both on the level of the administrative sector as a whole and on the level of the individual organisations. The evaluation aimed to provide information – for the Ministry as well as for the organisations concerned - that could be directly used in the preparation of the next environmental programme.

The evaluation was carried out between February and August 2004 in two phases. In the first phase, an assessment of each of the twelve organisations' EMS was made. The results were separately reported for each organisation and are not included in this synthesis report. The reports remained for internal use within each organisation and were not, for example, given to the Ministry. The second phase consisted of producing an overall picture, based on the organisation-specific reports and further analysis. The results of this second phase are summarised in this synthesis report.

The evaluation process was directed by a Steering Group. In order to manage practical issues, a Support Group, whose members worked as liaison officers between the evaluation team and each organisation, was also appointed. The Support Group had a considerable role in assisting the evaluation team, including collecting all the documentary material for organisational assessments, delivering the electronic surveys, assisting in choosing and inviting relevant persons for the evaluation workshops and managing the dissemination and reviewing of the organisational evaluation reports.

The evaluation team consisted of ten experts from Gaia Group Oy, Suomen Laatu keskus Oy and Net Effect Oy. A four-person management team, representing all consortium partners, was responsible for the project work, including writing the synthesis report. The overall team was organised into three operative teams, which were mainly responsible for organisation-specific assessments. Each operative team consisted of two expert evaluators and a management team member, and each team evaluated four organisations. The teams had representatives from each of the three consortium companies in order to enhance cross learning. In order to ensure a common understanding of and approach to the evaluation process and criteria, the entire evaluation team met regularly throughout the process.

## ***4.2 Evaluation criteria***

The evaluation focused on ten themes, as summarised in Table 4.1. These themes were jointly specified by the organisations concerned during the preparatory phase of the evaluation prior to the tendering process. The themes were then further defined at the beginning of the evaluation process through dialogue between the Steering Group and the evaluators.

**Table 4.1.** Evaluation themes

1	How are environmental issues presented in strategies and other policy documents?
2	How is the concept of 'environment' defined?
3	What impacts do activities have on the environment and how are these identified?
4	How are legal obligations relating to the environment identified and taken into account?
5	How are environmental issues managed?
6	How are the objectives set by the Ministry of Transport and Communications taken into account in goals and actions?
7	How is the management of environmental issues organised and what resources have been provided?
8	How do the organisations monitor the performance of the procedures?
9	What kinds of methods are used for corrective actions and improvement?
10	How are environmental issues reported to the public, the Ministry and other stakeholders?

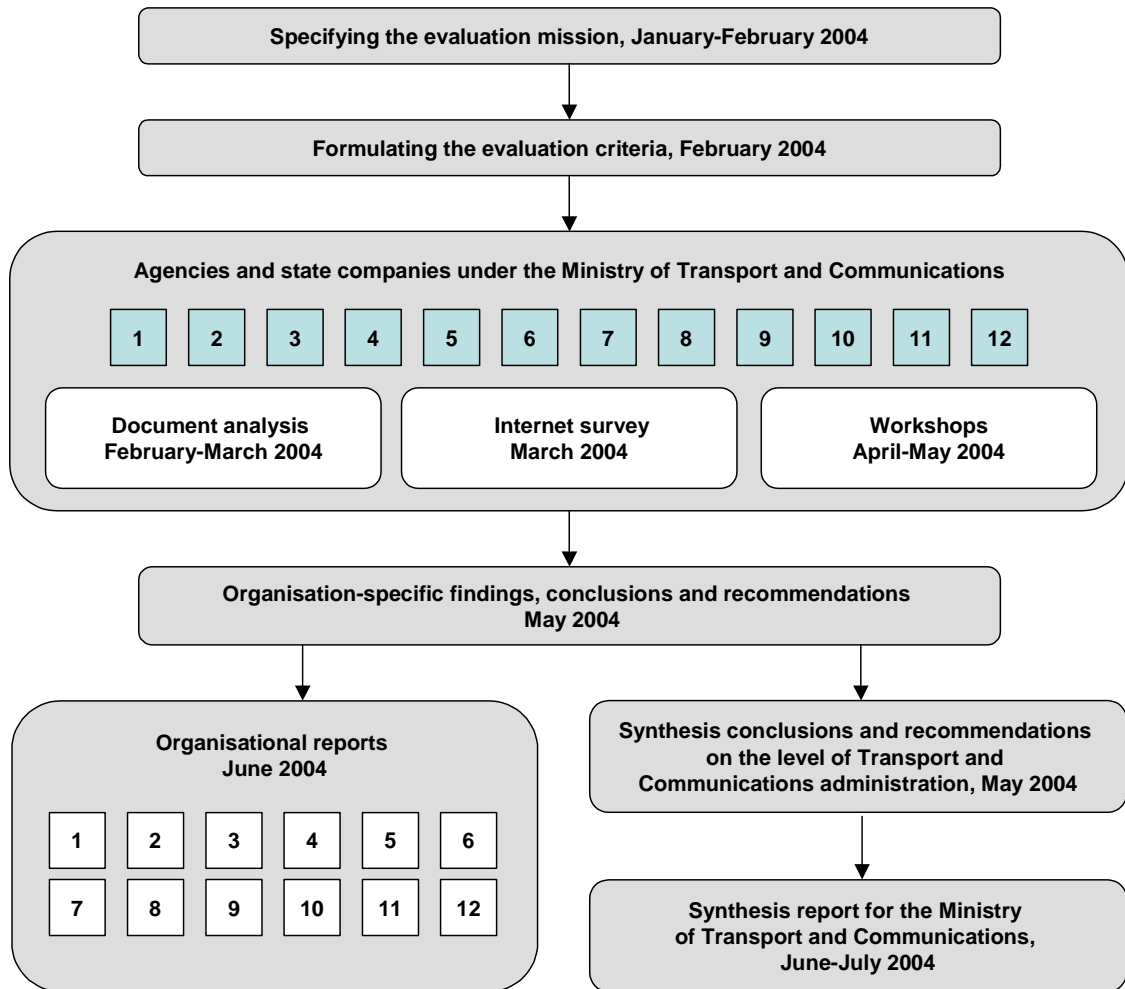
Under each of the ten themes, specific evaluation questions were defined in order to consistently guide the evaluation process for all twelve organisations. These, more specific questions, are included in Appendix 1.

### ***4.3 The evaluation process***

As described earlier, the focus of this two-phase evaluation was on the organisational and inter-organisational environmental management practices and not on environmental impacts as such. The first phase focused on the procedures and approaches within the individual organisations, and the second phase reviewed the performance of the EMS at the level of administrative sector as a whole. Specific attention was paid to how the MTC steers environmental management of the organisations, and how the organisations' own environmental goals are taken into account in the Ministry's planning and decision-making.

The evaluation of the EMSs was carried out in several stages (see Figure 4.1). These stages can be grouped into design, data collection, analysis and reporting phases. As the evaluation proceeded, the degree of interaction between the evaluation team and the organisations representatives increased, whereby conclusions and recommendations were validated.

1. **Design.** In the first phase, the evaluation questions were specified, with the Steering Group and the evaluation team further defining the evaluation themes and the specific questions included in the themes (see Appendix 1). An electronic survey common for all the organisations was designed on the basis of these themes and questions.
2. **Data collection.** Data was collected using three methods: reviewing relevant documents; an electronic survey targeted at the personnel of the organisations; and working seminars and workshops held between the evaluation team and the organisations. The seminars had two purposes – firstly, the evaluation team had the opportunity to verify the observations made in the course of the evaluation process, and secondly, to increase awareness of environmental issues within the organisations.
3. **Analysis.** The findings, conclusions and recommendations were formulated through a collective interpretation process in which the entire evaluation team participated. The structure of the process was hierarchical: the conclusions and recommendations at the level of the whole administrative sector were based on findings at the organisational level.
4. **Reporting.** The evaluation had two types of outputs: organisation-specific reports and a synthesis report based on individual reports. The individual organisational reports have a common structure following the ten evaluation themes.



**Figure 4.1.** The evaluation process

In the first phase of the evaluation, each organisation provided a wide collection of documents relevant to environmental management to the evaluation team for preliminary analysis. After this documentary review, a survey was carried out via the Internet. The target groups and mailing lists for this were defined by each organisation. 433 out of 730 persons responded to the survey. The number of target groups and respondents are presented in Table 4.2. It can be noted that all the organisational levels, from the top management down to operational units, were represented in the responses.

**Table 4.2.** Target groups and number of respondents in the Internet survey

<b>Organisation</b>	<b>Sent to</b>	<b>Responded</b>	<b>Response rate</b>
Finnish Vehicle Administration	39	31	79 %
Finnair Group	50	30	60 %
Finnish Meteorological Institute	69	30	43 %
Finnish Civil Aviation Administration	60	36	60 %
Ministry of Transport and Communications	35	19	54 %
Finnish Maritime Administration	30 <sup>1)</sup>	17	57 %
Finnish Institute of Marine Research	40 <sup>1)</sup>	32	80 %
Finnish Rail Administration	50	21	42 %
Finland Post Corporation	98	48	49 %
Finnish Road Administration	108	67	62 %
Finnish Road Enterprise	83	55	66 %
VR Group	71	47	66 %
<b>Total</b>	<b>733</b>	<b>433</b>	<b>59 %</b>

1) Based on an estimation

The questionnaire-based survey measured several aspects of environmental management using a five-point scale. The scaling enabled comparisons between organisations and between different areas of environmental management. However, it should be noted that the purpose of the evaluation exercise was not to rank the performance of the organisations. The nature and scale of activities vary considerably between organisations (See Chapter 2). These differences make explicit benchmarking irrelevant. However, the scaling provided the possibility to comparatively refer to organisations with similar structures and activities. The aim was to identify needs for further improvement rather than to hold organisations accountable.

In the third stage, the survey findings were discussed in interactive workshops. Overall, some 100 persons attended the 17 workshops arranged. One or two workshops - lasting between two hours and a full day and lead by two evaluators - were held in each organisation. Here the survey results were used as a starting point for general discussion regarding the state of development of environmental management within the organisation, followed by identification of potential needs for further development, both at the organisational and MTC administrative sector level.

Three larger meetings were held before the organisational workshops, where the evaluation team presented the preliminary findings from the documentary review and Internet survey to the Support group. These meetings were also used to jointly plan the workshops. Towards the end of the evaluation, two larger meetings were held, where the Steering Group and Support Group met to discuss the results relating to the EMS of the administrative sector as a whole.

The analytic assessment tool, the PDCA approach – Plan, Do, Check, Act – was used. This approach, widely used in quality management, served as a general method for identifying

the level of development of the EMSs and their constituting parts. The first stage (Plan) refers to a planned approach for managing the issue is agreed. The second stage (Do) indicates a stage where the plan has been deployed and integrated into other processes. The third level of development (Check) is reached when the performance of the approach has been critically assessed. The most mature level of management (Act) is when corrective and improving measures based on the outcome of the critical assessment have been made. The last phase of the PDCA cycle should then lead to the next round of planning, doing, checking and acting, thus providing a framework for continuous improvement.

Some other general principles were also adopted to guide the design and implementation of the evaluation process, namely: future orientation, user focus, multi-perspective measurement and context sensitivity.

- **Future orientation** refers to a goal to produce practical recommendations on how to improve environmental management in the MTC administrative sector. Emphasis was given to formulating suggestions, which could guide improvement efforts of the organisations as well as in the preparation of the next environmental programme.
- **User focus** is a starting point for the whole evaluation process. A careful identification of the evaluation target and a close collaboration with organisations under assessment were manifestations of this principle.
- **Multi-perspective measurement** means taking various stakeholders' interests and viewpoints into account and conducting the assessment through several parallel evaluation methods (documentary analysis, interviews, survey, and workshops). The aim is to ensure a rich and versatile picture of the environmental management systems.
- **Context sensitivity** means judging the performance of each organisation in relation to its operational environment and activities. Having several types of organisations requires different standards and benchmarks, since the steering mechanisms and constraints for action vary considerably.

## 5. Summary of evaluation results

### 5.1 The status of the EMS within each evaluated organisation

#### The different development phases of the EMSs

In the organisations within the MTC administrative sector, the active environmental work started at different times. The first organisations to start developing an EMS were the MTC, VR Group, and the Finnish Road Administration in the early 1990's (the road administration organisations have gone through several reforms since the beginning of 1990's and is nowadays split into the Finnish Road Administration and the Finnish Road Enterprise). Approximately at the same time, EMS work was started in Finnair Group, the Finnish Civil Aviation Administration and the Finland Post Corporation. At the end of the 1990's, work also started in the Finnish Meteorological Institute and the Finnish Rail Administration. The last organisations within the sector to start developing an EMS were the Finnish Vehicle Administration, the Finnish Maritime Administration and the Finnish Institute of Marine Research, where the work only started in the 21st century. One of the observations made is that those organisations where the work started in the early 1990's are now in a relatively advanced level. The 'best' organisations are characterised by a systematic approach, commitment by senior management and incorporation of 'environmental thinking' into all aspects and operations of the organisation. This development has taken a long time and is not a change that can take place overnight.

The maturity of the organisations' EMSs within the MTC sector can be evaluated according to the Plan, Act, Do, Check model as described in Chapter 4. Table 5.1 depicts the stages of maturity of the organisations' EMSs according to this model.

**Table 5.1.** The maturity stages of the organisations' EMSs according to the plan, act, do and check model

PLAN	PLAN and ACT	PLAN, ACT and DO	PLAN, ACT, DO and CHECK	PLAN, ACT, DO and CHECK throughout the organisations operations
Finnish Meteorological Institute Finnish Institute of Marine Research	Finnish Vehicle Administration	Finnish Maritime Administration Finnish Rail Administration	Finnair Group MinTC Finland Post Corporation Finnish Road Administration	Finnish Road Enterprise VR Group Finnish Civil Aviation Administration

The level of environmental work is most modest in the research institutes, where a systematic EMS has not yet been adopted (Plan). However, these institutes perform significant environmental work by producing information and knowledge about the environment for all the bodies within the sector, but as yet no systematic EMS has been adopted by the research institutes. In one organisation, an EMS has gone through the planning stage and its implementation is starting (Plan, Act). Two of the organisations are currently implementing recently planned EMSs (Plan, Act, Do), but a systematic approach to evaluation and improvement is still lacking. Four of the organisations have already advanced to a stage where the EMS is evaluated and systematically improved on (Plan, Act Do and Check). Three of the organisations have already progressed to a point where evaluation and improvement is done at all levels of the organisation, backed by a senior management commitment.

It is to be noted that quite extensive changes in the organisation and structure of the bodies within the MTC sector have taken place during the last decade. Organisations have been divided into separate bodies and incorporated, and the responsibilities and obligations have been clarified and separated. As a consequence, the new corporations have partially had to rebuild their environmental and other management systems. This has led to some reduction in the pace of developing the EMS. On the other hand, the changes have necessitated active development work, which may also have facilitated the process of developing the EMS. It should also be noted that organisational changes in the future would equally affect the situation. Effective transfer of knowledge and information during organisational changes, both within the sector and beyond, is therefore of considerable value to the continuous development and upkeep of the EMSs. Particularly, the EMS of the administrative sector as a whole should be prepared for organisational changes.

### **Managing environmental issues**

Management of environmental issues can be done through an EMS that is independent from the organisation's other management systems. Alternatively, the EMS can be integrated with the general management system. Of the evaluated organisations, two (Finnair Group and the MTC) represent the first alternative, and one (the Finnish Road Enterprise) the latter. Four of the organisations are currently at a transition phase, where the EMS is in process of being integrated with the general management system (the Finnish Civil Aviation Administration, Finland Postal Corporation, the Finnish Road Administration and VR Group). This is depicted in Table 5.2.

**Table 5.2.** Management approach for environmental issues within the MTC administrative sector

Environmental issues are not managed	Environmental issues managed in planning stage	Environmental issues managed through separate management system	Environmental issues are partially integrated into general management system	Environmental management is integrated into general management
Finnish Institute of Marine Research	Finnish Vehicle Administration Finnish Meteorological Institute Finnish Rail Administration Finnish Maritime Administration	Finnair Group MinTC	Finnish Civil Aviation Administration Finland Post Corporation Finnish Road Administration VR Group	Finnish Road Enterprise

The management of environmental issues within an organisation is closely linked to how these issues are defined for the different organisational levels in the systematic EMS. Consequently, where no systematic EMS is in place, or the EMS is only partially in operation, the management of environmental issues is often deficient. The link between the maturity of the EMS (Table 5.1) and the management of environmental issues (Table 5.2.) can be clearly seen when comparing the two tables – in both, the same organisations are situated at the extreme ends.

The degree of maturity in managing environmental issues is also linked to the maturity of the general management system. In general, management of environmental issues cannot be developed totally separately from developing the general management system. This evaluation did not look at the general management system development, but it is clear that EMS work proceeds best in an organisation where the general management system also continuously undergoes development.

## ***5.2 The status of the MTC administrative sector's overarching EMS***

The environmental programme of the administrative sector had an ambitious aim to build an overarching EMS for the administrative sector. When looking at the administrative sector as an entity, the overarching EMS work has clearly progressed from the planning stage towards implementation and actual measures, although the process is not yet complete. In particular, the monitoring mechanisms of the overarching EMS are still deficient. However, initial signs of developing the monitoring mechanisms already exists – of which this, internationally quite unique evaluation project, is an example - indicative of the progressiveness of the MTC administrative sector's EMS work. However, a clear deficiency of the administrative sector's overarching EMS is the lack of management review. The ambitious aim of creating an overarching, sectoral EMS instead of merely an environmental programme has thus not been fully achieved. The overall result is more in line with a traditional administrative policy programme, where the roles of feedback

mechanisms and corrective actions are still rather small. The sector's overarching EMS work has been summarised following the areas defined in the ISO 14001 standard in Table 5.3 below.

**Table 5.3.** A summary of the administrative sector's overarching EMS work.

Area	Evaluation
Environmental policy	Environmental policy and definition of aims and objectives has been well covered in documents describing the administrative sector's EMS. However, it should be noted that the link between each organisation's own aims and objectives and those of the entire administrative sector's aims and objectives is still somewhat unclear.
Planning	The planning of the EMS has been well covered in the documents describing the whole administrative sector, and the different organisations within the administrative sector have actively participated in this process.
Implementation of the system and its actions	Guidance for the implementation of the EMS is included in the strategy document, but the operationalisation of the program has been only partially completed. The responsibilities have been defined, but the feedback mechanisms for the implementation of the actions have, in part, been ignored. In addition, clarification of the different organisations' roles is required. A strong point is the information exchange between the administrative sector's organisations.
Monitoring and corrective actions	Monitoring is deficient. The evaluation described in this synthesis report partially remedies this deficiency – however, it is neither continuous nor undertaken by the relevant organisations themselves for the entire administrative sector's EMS. No corrective actions of the unifying EMS for the entire administrative sector have been undertaken.
Management review	An essential part of an EMS is regular management review of the system. This is almost completely lacking from the administrative sector's unifying EMS. It is the responsibility of the entire administrative sector's environmental networks to produce the required monitoring and review data. Based on this data, the administrative sector's organisations' general directors, or at least the management of the Ministry, can evaluate how the aims and objectives of the EMS and the environmental impacts have been reached.

From the evaluation of the individual organisations' environmental work, a general conclusion drawn is that, when considering the administrative sector as an entity, an environmental strategy that covers the entire traffic system is needed and the work towards a common EMS should continue. It can also be concluded that the MTC - the organisation that has both overall responsibility and controls the funding - has a central role to play in leading and coordinating this work. To achieve an overarching EMS for the sector, equally important components of the development work are:

- The commitment by each organisation to the system;
- A clear division of responsibility throughout the administrative sector; and
- The monitoring of how objectives are achieved.

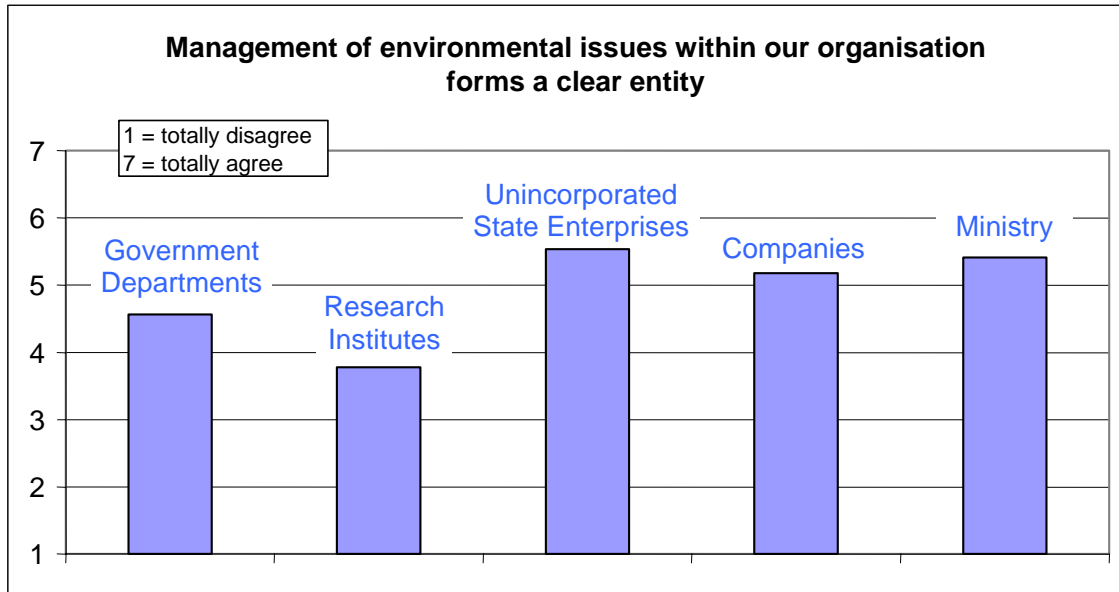
However, it should be noted that the whole administrative sector's overall EMS also in the future will consist of the twelve organisations' own, separate systems. These systems contain the organisation's interpretation of the MTC environmental programme. The organisations cannot, nor would it be meaningful to try to, be forced to conform to the same model. Instead, the differences between the organisations and the subsequent divergences between their specific EMS's should be regarded as enriching the overall work.

When looking at the administrative sector's EMS as a unity, three different subject entities can be recognised. The conclusions related to each of these are analysed separately.

1. Acknowledging the differences between the administrative sector's organisations as part of the administrative sector's overarching EMS;
2. Internal information exchange within the administrative sector's overarching EMS; and
3. Resourcing for managing the entire administrative sector's environmental issues.

#### **Acknowledging differences between the administrative sector's organisations**

The organisations within the administrative sector differ with respect to both how environmental impacts are occurred and the steering mechanisms employed by the Ministry. Therefore, the importance and interpretation of the overarching environmental programme and EMS of the administrative sector varies according to the organisation's operations. On average, the ability of the administrative sector's organisations to visualize the complete chains of events leading to environmental impact is only partially developed. This is particularly noticeable in organisations where operations are far upstream from the direct environmental impacts. Particularly, the evaluated research institutions had difficulties to define the organisation's own EMS. Grasping the importance of their own work as a part of the administrative sector's overarching EMS appears even more problematic. The same problem is also evident in the agencies and government departments where the operations have no direct environmental impacts related to the traffic system, but any effect is only realised indirectly through guidance and monitoring actions. This is illustrated by the questionnaire results, where average responses to the statement "Management of environmental issues within our organisations forms a clear entity", showed clear differences when classed according to the type of the organisation, as shown in Figure 5.1.



**Figure 5.1.** Average view of each organisation's management of environmental issues as a whole, classed by type of organisation

When looking for ways to improve the situation, it should be born in mind that the basis of the overarching EMS for the administrative sector is the environmental work done by each of the organisations. In the first instance, the organisations must develop their own environmental work and grasp the importance of their own operations in relation to the environment. However, it should be noted that this work should continuously be viewed from the perspective of the administrative sector's overarching environmental work and EMS. In some of the organisations, a systematic approach to environmental work is only just beginning to be implemented. This is a highly relevant time to include the wider perspective of the chain of events leading to environmental impacts in the planning processes. In the case of organisational changes taking place in the near future, an important issue will be to clarify the positioning of the organisations within the administrative sector's overarching EMS. It is essential to include senior management in the work and to regard environmental issues as strategically important. An equally important issue is for the entire personnel to participate in the environmental work and to increase environmental awareness.

One of the issues, evident in many of the evaluated organisations, arise when the organisation does not have significant direct environmental impacts from its own operations that are linked to the traffic system. Any direct environmental impacts from operations were related to energy consumption and general office waste generation and recycling issues. It was unclear to the organisations, whether these issues should be included in the organisations' own environmental work, and whether these issues should be incorporated into the administrative sector's overarching EMS. Compared with the impacts generated by the whole traffic system (infrastructure and traffic flow), these

impacts are insignificant. However, including the environmental impacts arising from office work has a significant role in engaging the entire personnel in the environmental work.

In order to facilitate the organisations' perception of their own environmental work, the Ministry's environmental programme should more clearly support the clarification of different roles. One of the identified deficiencies was that the administrative sector's environmental programme and EMS do not sufficiently reflect the variation between the different organisations' environmental impacts. The programme clearly defines the responsibilities with respect to different objectives, but does not reflect the fact that the organisations have very different operational prerequisites and methodologies for achieving the objectives.

Another identified deficiency is that the overarching EMS is not sufficiently clearly linked to the MTC's other strategic target setting and steering systems. Such linkages would facilitate the organisations perception of their own role in the administrative sector's overarching EMS. It should also be noted that those organisations that least clearly could visualise their own role in the overarching EMS are within the Ministry's budgetary control.

### **Information exchange within the administrative sector's EMS**

One of the greatest strengths of the administrative sector's overarching EMS is the facilitation of information exchange. Although documented and consolidated information has a central role to play in this, the main mechanisms for disseminating, exchanging and actively communicating information within the administrative sector's overarching EMS are the networks in which the organisation's environmental management participates (see descriptions of the networks in Chapter 3). These networks strengthen and facilitate long-term, often informal and established personal contacts. The conclusion is that information travels well within these networks. However, the information the participants of these networks have often remains within the network. Wider information dissemination and exchange could be improved to benefit the organisations. In part, the role of these networks should also be more clearly defined. Overall, information exchange within the entire administrative sector is still occasional, incomplete and too much a responsibility of the environmental managers. On the other hand, it is clearly quite natural that the main responsibility for information exchange should rest with the environmental managers. The importance of the networks as information sources is largely dependent on the maturity stage of the organisation, and is especially valuable at the stage when an organisation is just starting its environmental work.

Contextually, the evaluation identified two areas where the improvement of information exchange is seen as especially important.

1. The MTC has a significant role to play in centrally collating information, particularly in foresight activities, for example in the area of forthcoming legislative changes. Such future changes affect all the concerned organisations.

Therefore, it is constructive to jointly discuss these. It is also well founded to use the Ministry's resources to monitor development in legislation, both at the national and international level. Equally, the Ministry's resources should be utilised in research activities that support foresight activities in areas common to all the concerned organisations.

2. More effort should be put into propagation of best practices between the organisations. There are considerable differences between the development stages of the EMS work of the organisations, and the experience of organisations at a more mature development level should be better utilised to aid the work in those organisations at a less developed stage. In particular, the exchange of information and best practices should be enhanced, as some of the administrative sector's organisations will undergo reorganizations in the near future. The existence of good models enhances and accelerates the building of an EMS in new organisations. The Environment Handbook - published at the time of the start of this evaluation - has partially addressed this issue and is seen as a step towards improvement.

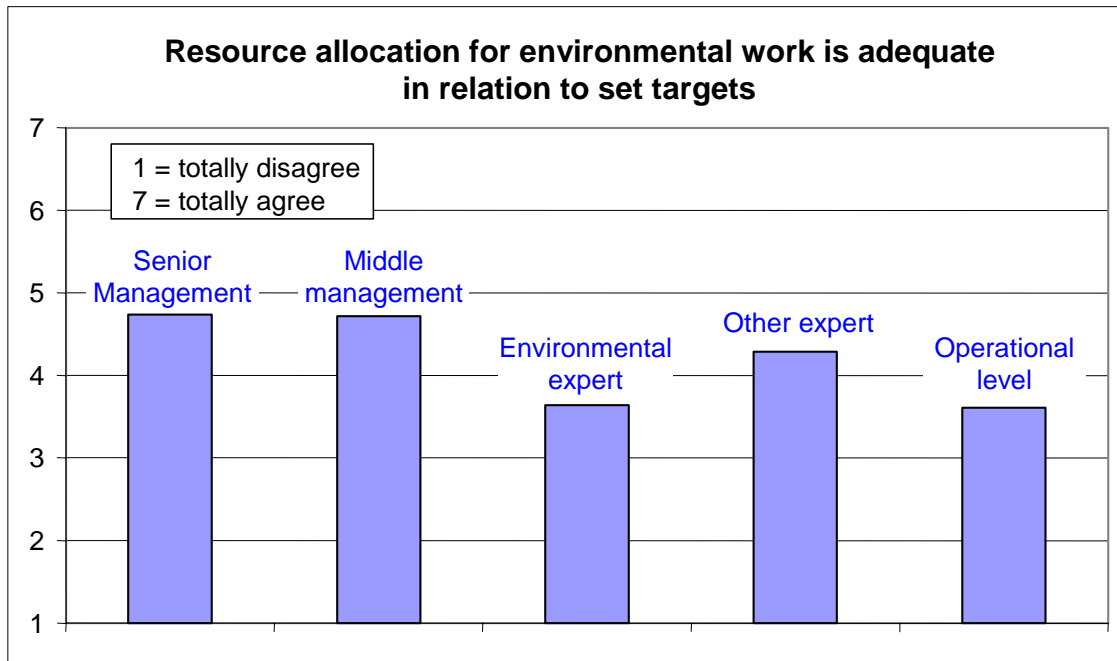
The organisations perceive the feedback mechanisms of the administrative sector's overarching EMS towards the Ministry as deficient. The deficiency is not so much related to information collection about each organisations environmental impact and the impacts of the whole traffic system, but the collection and dissemination of feedback information about the actions and methods of the overarching EMS. This type of information is processed in the environmental managers' networks. However, clearer instructions are required with respect to the collection of the relevant information and the feedback mechanisms towards the Ministry.

One of the observations made during the evaluation was that, in order for the administrative sector's overarching EMS work to be successful, the senior management of each organisation must be committed and supportive of the work. Accordingly, information exchange between the top management of the different organisations was identified as critical, and this area should be further developed.

### **Resource allocation for managing the administrative sector's environmental issues**

Large expectations and heavy responsibilities have been placed on the environmental managers, both in the MTC and the other organisations, with regard to the development of the administrative sector's overarching EMS and the related information exchange. The development of the overarching EMS will, however, always be in second place after the development of own organisation's actions. Thus development of the entire administrative sector's information exchange is not the highest priority. This is largely a resourcing issue. Each organisation's own environmental work and the allocated resourcing are, in general, perceived as being adequate for performing the organisation's own, necessary work. However, scant resources are directly allocated to work that aims to develop the entire administrative sector's joint environmental work, such as effective spreading of best practice experiences. In general, the resources are seen as inadequate both by those directly

responsible for the management of environmental issues and by operative personnel. This is illustrated in Figure 5.2, where the break point between agreeing and disagreeing with the adequacy of resource allocation is 4.



**Figure 5.2.** Average responses related to the adequacy of resource allocation for environmental work, grouped by the participants' job function.

The resourcing of the MTC's own environmental work, when considering the many tasks related to enhancing information exchange processes, was identified as a specific bottleneck. In organisation-specific evaluation of the MTC's EMS, resourcing for environmental work was not seen as a burning issue. However, when viewed in relation to the wider role the MTC has in the administrative sector's overarching environmental work, the lack of sufficient resourcing is evident. For example, the MTC should be able to support the other organisations to develop their own environmental work. When considering the resourcing of the MTC environmental work, the Ministry should therefore carefully evaluate whether the Ministry's environmental work is seen as being targeted towards the own organisation or towards the administrative sector as an entity. This decision should act as the basis upon which resourcing decisions are made, and it should be clearly communicated to all organisations within the administrative sector.

### **5.3 Recommendations**

The main recommendations for developing the administrative sector's overarching environmental work are presented in this section. Concisely, these can be summarised as:

- Strengthening environmental strategy through further co-operation;
- Taking better account of the different roles of the various organisations;
- Making effective use of the best practices developed in different organisations and transferring them to the others;
- Developing systematic monitoring and evaluation activities;
- Clarifying what top management commitment involves and how managers review environmental action (management audits); and
- Providing sufficient resources for environmental action, particularly within the Ministry for facilitating information exchange, co-ordination and networking.

The administrative sector's overarching EMS must be viewed as a virtual system, which is based on the networking activities and cooperation between all the organisations within the administrative sector. Such a system contains all the areas of a conventional EMS, but the implementation of the system is based on existing, organisation specific systems and the utilisation of the information produced by these, taking into account the differences in steering mechanisms. In developing the administrative sector's overarching EMS, the existing system's identified strengths – information exchange through networking activities and longstanding joint environmental work – should be utilised. When developing the administrative sector's overarching EMS, the aim is **not** to build a separate system, but to strengthen the existing structure in a meaningful way. The existing steering mechanisms form the framework for building an overarching EMS for the administrative sector. The main development recommendations are summarised in the following ten points:

1. In order to achieve the national and international targets set for the entire traffic system, the administrative sector needs an environmental strategy that covers the entire traffic system. The MTC is the only organisation with overall responsibility of the traffic system and all traffic modes, and consequently has a central role to play. The allocation of public resources between different modes of transport is one of the MTC responsibilities. There is a clear requirement for environmental work that covers the entire sector and its activities. The consistent and logical coordination of this work by the Ministry is a clear strength of the overarching EMS work undertaken by the administrative sector. **The MTC should continue this work and, in close cooperation with the governmental departments, agencies, corporations and state owned companies of the sector, coordinate the building of an overarching environmental strategy for the administrative sector.**
2. The administrative sector's ability to perceive the chain of events leading to environmental impacts is somewhat deficient and underdeveloped. Each of the organisation's role as part of the entire traffic system and its environmental impacts should be clarified. **When building a new overarching environmental strategy, more emphasis should be placed on clarifying the differences between the roles of the various organisations. Equally, each organisation should clearly**

**comprehend the importance of its own environmental work as a part of the sectoral entity.** In particular, forthcoming changes in organisations and steering mechanisms and the changes these will have on the division of responsibility of environmental issues should be pre-emptively taken into account.

3. There is not a separate EMS for the administrative sector as an entity, but this overarching EMS consists of the concerned organisations' own systems, where the MTC aims have been taken into account. Organisations cannot be forced into the same mould, nor would this be constructive. The differences between the organisational systems form a richness that should be utilised so that:
  - Each organisation has a clear perception of their role in minimising the environmental impacts of the entire traffic system;
  - Information is effectively shared between the organisations;
  - The overarching EMS for the administrative sector is developed through cooperation; and
  - Best practices are effectively transferred between organisations.

A particular strength of the current work has been the effective information exchange and a working cooperation between the different organisations. The identified **development actions for the above-mentioned points in particular address the clarification of the different organisations' roles and more effective recognition and transfer of best practices.**

4. The administrative sector's environmental programme has during the last five years developed from a single programme towards an overarching EMS for the administrative sector. In addition to the common environmental programme, the overarching EMS now also addresses planning, implementing, monitoring and review activities. This course of progression is commendable. Within the organisations of the administrative sector, the need for a common, systematic environmental management system work, larger than the single environmental programme is well recognised. At the same time it should be acknowledged that this increases the demand on developing the administrative sector's overarching EMS, requiring work both by the Ministry and the individual organisations. In the development of the overarching EMS, each organisation's own environmental work should be utilised and the operative framework set by the different steering mechanisms for the sector's organisations must be recognised. The overarching EMS for the administrative sector should not be developed as a separate system, but should be regarded as one part of the entity that is formed by the environmental work done by all the concerned organisations. The current EMS covers the areas of environmental policy, planning and implementation. **In order to develop the administrative sector's overarching EMS work, the primary development requirements for the future are enhancement of monitoring and management review activities.**

5. Despite the differences in how environmental matters are managed, each organisation must ensure management commitment and the incorporation of management of environmental issues as a critical factor affecting performance and competitiveness. The organisations where integration of environmental issues has most successfully been done have benefited from regular management participation, a clear division of responsibilities and coordination of activities. However, in the overall MTC strategy, the administrative sector's organisations have not been allocated responsibilities with respect to environmental issues at a sufficiently senior management level. **The top management of the Ministry and the administrative sector's organisations should jointly develop a clear understanding of how environmental issues should be taken into account in the organisation's actions. Regular management review should be incorporated into the administrative sector's EMS work.** Management review in this context does not mean either ponderous reporting or planning of new, complex procedures. The objective is for the top management to regularly participate in strategic level thinking processes, where the administrative sector's overarching EMS work is discussed and strategies formed, committing to jointly develop the administrative sector's common EMS work by utilising the information produced by each organisation's own EMS. In practice, the management review activities could be enhanced, for example in conjunction with reviewing and reporting the organisation's results. Other examples are environment specific 'management environment days' or 'management environment reviews', each focusing on either different types of organisations, different transport modes or specific environmental themes.
6. The environmental work done by the administrative sector is largely focused on ecological environmental impacts (noise, air quality, greenhouse emissions, discharges to water, use of natural resources and space, waste, and biodiversity). The most essential environmental issues have been identified and work has concentrated on the management and mitigation of these. The concept of the EMS could also be widened to encompass other issues, such as safety, health, society, and issues related to people's mobility and corporate responsibility. In many organisations, environmental concepts have already been extended in this way. In each of the administrative sector's organisation, the framework defining environmental work should be continuously monitored and redefined as part of the functioning EMS work. **However, in the next stages, the administrative sector's overarching environmental strategy and related actions should primarily focus purely on environmental issues.** It is not considered necessary to enlarge the strategy to encompass the three pillars of sustainable development (economic, environmental, social) into an enveloping 'sustainable development strategy'. The framework for the joint strategy should focus on those issues that have a clear link to the environment in order to ensure that clarity, logic and comprehensibility is maintained. Some of the organisations still have difficulties in perceiving their own role with respect to environmental impacts. **However, discussions about such closely related wider issues should definitely be held between the administrative sector's organisations.** In addition, disseminating information and

coordinating the overarching EMS with other administrative sectors and with national and international programmes and policies is first and foremost seen as the Ministry's responsibility.

7. One of the strengths of the administrative sector's overarching EMS work has been the exchange of information, in particular between each organisation's environmental managers. The mainstay of the administrative sector's EMS will also in the future be effective information exchange through networks. The recommendations for development presented in the evaluation largely focus on further strengthening the coordination and information exchange. These are addressed both between the different levels within the organisations (top management review, strengthening of monitoring activities) and nationally with other administrative sectors (the position of the MTC environmental programme in relation to other programmes) and internationally, both through monitoring changes on the operational envelope and through developing international networks and information exchange. The current level of resources allocated by the Ministry to work on the administrative sector's overarching EMS will become a bottleneck towards development. **The systemic work is based on openness and sharing of information that requires both the maintenance of each organisation's own work and a true commitment to the development work. In order to develop the administrative sector's overarching EMS, the Ministry must therefore allocate sufficient resources to strengthen the required information exchange, coordination and networking activities.**
8. Achieving environmental objectives is hampered by the steering mechanisms' insufficiency in addressing the organisations' differences. The organisations within the Ministry's budgetary control should be expected to achieve the objectives set by the Ministry and include environmental issues into the general target setting for the organisation. The organisations within budgetary control in part expressed a wish for clearer guidance from the Ministry in relation to environmental issues. The Ministry should strengthen the addressing of environmental issues as part of the discussions related to common work and objectives with the state owned corporations and the unincorporated state enterprises. **The administrative sector's environmental programme and EMS should better reflect the different steering mechanisms for each of the organisations. The Ministry should make a clear distinction between state owned organisations and those within budgetary control when providing guidance in environmental issues and, accordingly, more clearly define the responsibilities.**
9. The administrative sector's available steering mechanisms - especially those for the government departments and agencies under budgetary control - do not feed the administrative sector's environmental objectives forward from the Ministry to the organisation. Neither do they provide a channel for forwarding these to subcontractors and other contractual partners. The objectives related to the management of environmental issues and the monitoring of these should be taken into account when developing the Ministry's and the administrative sector's

organisations budgetary control mechanisms. **In particular, the environmental objectives and monitoring of these should be taken into account when developing the budgetary control mechanisms for the Ministry and the organisations concerned.**

10. Contractual steering mechanisms will become more important and the importances of these have so far been ignored in the administrative sector's EMS work. The role of these mechanisms should be clarified with respect to the objectives set by the environmental programme. Areas where environmental issues can be better taken into consideration by developing the relevant operations should be identified. **The development of recommendations for contractual issue should be further developed as a joint exercise by the administrative sector's organisations.** However, due to the competition legislation, those organisations that compete in a market economy are most unlikely to be able to participate too closely in such discussions.

## 6. Lessons learnt – follow-up actions and key factors for successful evaluation

### 6.1 Use of the evaluation results

The results from the evaluation have been utilised both within each organisation and in planning the next environmental programme. According to the evaluation, the greatest strength of the administrative sector's joint EMS is the long-term cooperation and working information exchange between the organisations in environmental issues. Monitoring, evaluation and management review were identified as the primary areas to be strengthened. In the overarching, sectoral EMS, the evaluation concluded that the organisations' different roles should be better taken into account, and that management of environmental issues should be developed as part of the different steering mechanisms for the organisations.

The recommendations for developing the policy programme and changes in the traffic sector have been taken into account in the preparation of the MTC third environmental programme. During the autumn 2004, after the completion of the evaluation, the results were discussed in a meeting with the chief executive officers (CEO) from each organisation. There was a common commitment to take some of the evaluation recommendations forward. In particular, during the drafting stage of the new environmental programme, the CEOs familiarised themselves with the draft and the responsibilities were allocated and development areas identified for each organisation. At the same time, they agreed how the programme will be monitored and which indicators to use for monitoring. Furthermore, the CEOs agreed to jointly evaluate the implementation of the new programme both at midterm and at the end of the programme.

In general, the independent views expressed by the external evaluators were valued. Anders Jansson, the Finnish Road Administration's research and development co-ordinator, summarised the added-value of the evaluation and the further steps as follows: *“With some exaggeration, one could say that if the starting point fairly long ago was an all-encompassing program of 'making it good for everyone' linked to a rather diffuse view of who was expected to actually do it, we are now moving towards a very much clearer, but at the same time somewhat narrower, focus with a better grip on who will really do what – top management included.”*

As guidelines for parties planning similar extensive environmental management work covering several organisations, one can conclude with some general encouragements and requirements:

- Building an EMS covering an administrative sector is time consuming, but long term commitment to the work is essential to ensure that the work of different actors can be brought together into a functioning, realistic entity and that the undertaken environmental work is efficiently done;

- The elements of an EMS can be adopted for very different organisations. Organisational differences are not a hindrance to systematic, joint environmental work;
- When building the EMS, the type of organisation, its environmental impacts and applicable steering mechanisms should be taken into account and incorporate the management of environmental issues as much as possible into existing management systems within each organisation;
- Management commitment and support for the environmental work is of prime importance;
- Monitoring and feed-back mechanisms allow targeted development; and
- The foundation is built on well functioning cooperative networks that support information exchange and allow environmental issues to be considered from many angles and viewpoints.

## ***6.2 Key factors for successful evaluation***

In order to successfully produce results that are of practical relevance for the organisations involved, the following elements of the evaluation can be recognised as critical.

- The commitment of all the involved 12 organisations towards the evaluation was at an exceptionally high level. This commitment is seen as the most critical factor contributing to the success, as not only is it required to produce results, but these must also be positively received. The involvement of all the organisations also made it possible to draw general conclusions covering the whole administrative sector. The high commitment seen can partly be traced to the longstanding co-operative culture and existing networks within the administrative sector. However, equally critical was that the organisations themselves participated in the planning of the evaluation and that the evaluation included individual evaluations of each organisation. These individual evaluations were separately ordered by each organisation, thus making it possible to treat the results with confidentiality. The actual costs of the evaluation were partly met by the organisations - this increased the level of commitment, mainly due to the desire to get value for the money.
- The planning process of designing the evaluation was comprehensive. The relatively long duration of the planning phase made it possible for each party to express their opinions and provided opportunities to revise plans. The use of external consultants, both during the planning and to evaluate the tenders, increased the quality of the evaluation plans. The resulting tendering documents were very specific and provided both clear guidance and an efficient start for the evaluation.
- Adequate resources were provided for the evaluation. The planning phase was allocated some resources, and the actual evaluation budget was sufficiently large to allow thorough consideration and work steps. Overall, the evaluators used

approximately 12 man months for the work. In addition, the Steering Group work - in particular the work of the liaison persons in each organisation - and the participation by the organisations' representatives in different workshops consumed a considerable amount of resources.

- The management structure for the evaluation was efficient albeit somewhat elaborated. The Steering Group had a clear vision of the role of the evaluation and supported the work effectively. The professional project management had frequent feedback meetings - with the Steering Group, with each organisation involved, and internally within the evaluation team - ensuring that the work was completed in time and within budget.
- Methodologically, the use of interactive, participatory evaluation methods was the right choice. The large number of workshops and discussions held ensured that the evaluators formed a correct understanding of the organisation's situation, objectives and capabilities. The use of workshops also enabled the results of the evaluation to be discussed and development actions planned together before the final reports came out, which increased the commitment.

## **Appendix. Evaluation themes and the specific evaluation questions related to the themes**

### **THEME 1: Presentation of environmental issues in strategies and policy documents**

- 1.1 Are environmental issues identified in the policy guidelines and policy goals? Are the objectives clearly defined? What are they?
- 1.2 Are environmental issues identified as strategic issues, important for the overall success of the organisation (e.g. as a part of organisation's values)?
- 1.3 Are environmental goals of various strategies, priorities and programmes coherent?
- 1.4 Are environmental goals in balance with the organisation's other programmes and strategic goals?
- 1.5 Are environmental goals clearly defined both for short and long time spans?
- 1.6 Are there specific inputs and resources for accomplishing the set objectives?
- 1.7 How do the managers show their commitment in environmental management?

### **THEME 2: Definition of the concept of 'environment'**

- 2.1 What issues does the concept of 'environment' include and what themes have been closely linked with it? (E.g. quality, safety, health, ethics)
- 2.2 Does the definition of 'environment' differ from the way it is defined in the environmental programme in the policy sector? If it differs, how?
- 2.3 Is the definition of 'environment' extensive in operational terms?
- 2.4 Are the definitions in various documents consistent? Where are the possible inconsistencies?
- 2.5 Do organisations consider it necessary to expand the definition of 'environment'? What issues should be included (e.g. corporate social responsibility)? Why?

### **THEME 3: Impacts on the environment and their identification**

- 3.1 Is there an established procedure for identifying the 'environment'?
- 3.2 How are the environmental issues and environmental aspects identified on the level of strategic planning? What are they?
- 3.3 Is there a planning procedure for identifying future challenges related to the environment?

### **THEME 4: Identifying legal obligations regarding environment**

- 4.1 What role do the legal obligations, international treaties etc. play in the organisation's environmental management?
- 4.2 How does the organisation make sure that it has up-to-date information on the legislation and its obligations?
- 4.3 How does the organisation make sure that the legal requirements are taken into account at various operational levels?

### **THEME 5: Management of environmental issues**

- 5.1 Are environmental issues present in various management systems and processes?
- 5.2 Using what kind of process does the organisation define the objectives of environmental systems and environmental action and how is achievement monitored?
- 5.3 How do environmental issues (objectives) transfer into operational management?
- 5.4 How are environmental issues taken into account in collaboration with partners, suppliers and customers? (Definition of responsibilities and obligations and their mediation in the whole chain)
- 5.5 How does the management of environmental issues by various actors affect the collaboration? Are common environmental issues identified?

**THEME 6: Integration of objectives set by the Ministry of Transport and Communications with organisation's goals and actions**

- 6.1 Which of the objectives and themes set out in the environmental programme is most pertinent?
- 6.2 How do the objectives and themes set out in the environmental programme manifest in organisation's strategic objectives and action?
- 6.3 How are organisation's own viewpoints (regarding the environmental programme) mediated to the Ministry?
- 6.4 How do the objectives of the environmental programme transfer into operational management (e.g. information steering, strategic planning, performance management and budget)?
- 6.5 Are there any problems regarding implementation set by the Ministry?

**THEME 7: Organisation and resourcing of environmental management**

- 7.1 How are the environmental tasks and responsibilities defined?
- 7.2 How is management of environmental issues coordinated?
- 7.3 How large resources are reserved for environmental management?
- 7.4 How does the organisation ensure necessary competencies in environmental matters?

**THEME 8: Monitoring of process performance**

- 8.1 How systematically do environmental issues appear in internal reporting?
- 8.2 How does the organisation monitor that environmental issues are included in management and objectives?
- 8.3 How are environmental impacts monitored? Does a measurement and reporting system exist?
- 8.4 How is attainment of long-term environmental goals assessed?
- 8.5 How are organisational procedures in environmental management monitored?
- 8.6 How is the management informed about environmental issues?
- 8.7 How are environmental risks assessed? How are defects identified?

**THEME 9: Improvement and correction**

- 9.1 Is there an established approach to correct the errors in environmental management?
- 9.2 How are internal and external feedback and assessment results taken into account? How are they utilised?
- 9.3 How is the organisation benchmarked with other organisations nationally and internationally in terms of environmental management?
- 9.4 How are experiences from other organisations, including foreign ones, used?
- 9.5 How are results from R&D activities used in the development of environmental management?

**THEME 10: Environmental reporting**

- 10.1 How are environmental issues communicated to stakeholders and the public? Are the policy and its responsibilities defined?
- 10.2 Is information easily attainable (e.g. on internet)?
- 10.3 How are environmental monitoring results conveyed to the Ministry of Transport and Communication?
- 10.4 How are monitoring results utilised in the Ministry of Transport and Communications?