

Linköping Studies in Science and Technology  
Dissertation No. 939

# Local authorities' approaches to standardised environmental systems

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**Linköpings universitet**

2005

Environmental Technology and Management  
Department of Mechanical Engineering  
Linköpings universitet, Sweden

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ISBN 91-85297-77-1

ISSN 0345-7524

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Environmental Technology and Management

Distributed by:  
Environmental Technology and Management  
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Printed by LiU/Unitryck, Linköping 2005

# Summary

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The overall aim with this thesis is to create a broader understanding of how the EMS tool works in local authorities. This means to study whether EMS is a useful tool for managing the environmental impact from the local authorities' activities and by highlighting its strengths and weaknesses as a tool. EMS is a tool that is used on a voluntary basis that aims at improving organisations' environmental performance. There are several standards for designing EMSs; however, this thesis focuses on EMSs designed according to the principles of the international standard ISO 14001 and the EU regulation Eco-Management and Audit Scheme (EMAS). The standards are based on a wide range of requirements. If these requirements are fulfilled, the organisation can choose to get its EMS certified by a third party. The EMS tool is frequently used in the private sector, and it is sometimes argued that it is designed for private (industrial) organisations. However, local authorities worldwide have shown an increased interest in EMSs since the mid 1990s. The EMS use in the private sector has been subject to some critique. For example, there is a risk that the tool is used only to get another certificate in order to increase their legitimacy, which means that there is a risk that the environmental issues are neglected. Until now, little academic research has been conducted concerning EMS use in local authorities. Therefore, it is interesting to study what approaches local authorities have to EMSs.

Mainly Swedish local authorities have been studied for this thesis. Many Swedish local authorities have been using EMSs for a fairly long time, which means that they have a certain amount of experience from this using tool. The local authorities' approaches to EMS use have been studied from several perspectives using postal surveys, interviews, and case study methodology. This means that the research has a strong empirical foundation.

The EMS use in Swedish local authorities is fairly common, since almost half of them are in the process of implementing EMSs in all or some of their departments. The main reason for implementing EMSs is to improve the structure of their environmental management. The local authorities often use ISO 14001 and/or EMAS as inspiration and design the EMSs according to their local conditions and ambitions, thus certification of the EMSs is seldom an aim. Although many local authorities seem to use EMSs in a reflective and sensible way, several barriers or difficulties – for example, maintaining continuity and ensuring follow-up of the environmental improvements – have been discovered. Furthermore, the EMSs that are being implemented often exclude environmental impact related to their exercise of authority since it is difficult and abstract. Including environmental impact related to these activities is often seen as a matter of maturity. To develop the organisations' EMSs, internal and external communication and interaction is experienced as very important. Such issues contribute to the EMS maturity processes, since the local authorities find new inspiration, knowledge, and motivation to further develop the EMS processes and, as a consequence, improve their environmental performance.



# Sammanfattning

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Syftet med den här avhandlingen är att skapa en bredare förståelse för hur verktyget standardiserade miljöledningssystem (MLS) fungerar i kommuner samt hur användbart det är för att hantera den miljöpåverkan som uppkommer från kommunernas egen verksamhet. MLS är ett verktyg som används på frivillig basis och som syftar till att underlätta för organisationer att förbättra sin miljöprestanda. Den här avhandlingen fokuserar på MLS som är utformade enligt huvudprinciperna för den internationella standarden ISO 14001 och den frivilliga EU-förordningen Eco-Management and Audit Scheme (EMAS). Standarderna innehåller krav på vad ett MLS ska omfatta och om en organisation uppfyller dessa krav kan den välja att få sitt MLS certifierat eller registrerat. MLS används flitigt i den privata sektorn och anses ibland vara ett verktyg som är utvecklat av och för (tillverkande) företag. Kommuner världen över har sedan mitten av 1990-talet visat ett ökat intresse för att införa MLS. Eftersom användandet av MLS i den privata sektorn varit utsatt för en del kritik, tex. att företag inför MLS främst för att få ett certifikat och därmed legitimitet för sitt miljöarbete, är det intressant att se om samma kritik även kan gälla för användandet av MLS i den offentliga sektorn. När forskningen för den här avhandlingen initierades var den vetenskapliga litteraturen mycket begränsad när det gäller användande av MLS i kommuner. Det var därför intressant att studera hur kommuner använder MLS och huruvida MLS verkar vara ett användbart verktyg inte bara i den privata sektorn utan även i kommuner.

Svenska kommuner har huvudsakligen varit i fokus för de empiriska studierna i den här avhandlingen. De är intressanta att studera eftersom många av dem har lång erfarenhet av MLS. Kommunernas MLS-arbete har studerats från flera olika perspektiv med hjälp av enkäter, intervjuer och fallstudiemetodik. Det betyder att forskningen har en stark empirisk förankring. Frågor som berör kommunernas drivkrafter, strategier och struktur för MLS-arbetet har varit viktiga i min forskning eftersom de på olika sätt belyser kommunernas användande av MLS.

Nästan hälften av Sveriges kommuner använder MLS i några eller alla förvaltningar. Den främsta orsaken till att införa MLS är att förbättra miljöarbetets struktur. Kommunerna använder standarderna som inspiration och utgångspunkt, men utformar ofta lokalt anpassade och förenklade varianter på standarder som upplevs passa deras organisationer bättre. Det betyder att certifiering av MLS:en är ovanligt. Även om många kommuner verkar använda MLS på ett reflektivt sätt, har flera svårigheter med verktyget identifierats. Till exempel, så upplevs det svårt att få kontinuitet i MLS-arbetet. En annan svårighet är uppföljningen av MLS-arbetet. Den miljöpåverkan som orsakas av kommunens myndighetsutövning inkluderas sällan i MLS-arbetet eftersom den är ganska abstrakt och svår mätbar. Att hantera denna typ av miljöpåverkan upplevs ofta som en mognadsfråga. För att kommunernas MLS-arbete ska utvecklas är intern och extern kommunikation och samarbete mycket viktigt. Om detta fungerar bidrar det till mognadsprocessen eftersom kommunerna får ny inspiration, kunskap och motivation att driva MLS-arbetet vidare, vilket förhoppningsvis leder till förbättringar i organisationernas miljöprestanda.



## List of Papers

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*This thesis is based in the following six papers, which will be referred to in the cover essay by their Roman numerals.*

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- I Emilsson S and Hjelm O. 2002. Mapping Environmental Management Systems Initiatives in Swedish Local authorities – a national survey. *Corporate Social Responsibility and Environmental Management* 9:107-115.
- II Emilsson S and Hjelm O. 2002. Implementation of Standardised Environmental Management Systems in Swedish Local Authorities; reasons, expectations and some outcomes. *Environmental Science and Policy* 5: 443-448.
- III Emilsson S and Hjelm O. 2005. Development of the Use of Standardised Environmental Management Systems (EMSs) in Local Authorities. *Corporate Social Responsibility and Environmental Management* 12: in press.
- IV Emilsson S and Hjelm O. 2004. Different Approaches to Standardized Environmental Management Systems in Local Authorities – Two Case Studies in Gothenburg and Newcastle. *Corporate Social Responsibility and Environmental Management* 11: 48-60.
- V Emilsson S and Hjelm O. 2005. Managing local authorities' indirect environmental impact within standardised environmental management systems. *Manuscript intended for submission to Local Environment*.
- VI Emilsson S, Tyskeng S, Carlsson A. 2004. Potential Benefits of Combining Environmental Management Tools in a Local Authority Context. *Journal of Environmental Assessment Policy and Management* 6: 131-151.

Papers I-V were written by me and my supervisor, Dr. Olof Hjelm. We both designed the research studies. I collected and compiled all empirical evidence. The papers were written mainly by me, with assistance, support, and feedback from Dr. Hjelm. I wrote Paper VI with Sara Tyskeng and Dr. Annica Carlsson. I have contributed to the section dealing with Standardised Environmental Management Systems. Sara Tyskeng provided knowledge and writing for the paragraph on Strategic Environmental Assessment and Dr. Carlsson provided knowledge and writing for the section and information on Substance Flow Analysis. We did the analysis and discussion together and took equal parts in the writing process.



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# Introduction

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*This chapter presents the research problem, the aim and scope of this thesis.*

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The general awareness of that our behaviours give rise to environmental degradation has become widespread during the last decades. To preserve our planet for future generations, we therefore need to change our behaviours. Traditional views on how environmental problems should be solved (e.g., reactionary end-of pipe solutions) are complemented or replaced with more preventive strategies. This shift is often referred to as ecological modernisation (Hajer, 1995). Ecological modernisation covers not only the technology but also environmental problems in the broader context, which among other things means internalising the environmental issues in the economic, political, and social institutions in society. As a consequence of this shift, environmental management has moved from being mainly based on environmental legislation to an extended responsibility among the actors in society, including voluntary commitments and efforts. The overall aim with these voluntary environmental commitments is to improve the environmental situation. A wide range of tools, approaches, and commitments has been developed to help the actors in the struggle towards a more ecologically sustainable development. Standardised Environmental Management Systems (EMSs), Ecological Footprints, Strategic Environmental Assessment, Environmental Budgeting, and Local Agenda 21 (LA 21) are just a few examples.

## ***Standardised environmental management systems***

This thesis focuses on Standardised Environmental Management Systems (EMSs), and how local authorities<sup>1</sup> use this tool. EMS is a management tool that is designed to help organisations improve their environmental performance<sup>2</sup>. It can also be seen as a tool for structuring, directing, and developing organisations' internal environmental management. This tool is often seen as originating from the private (industrial) sector (e.g. Norén and von Malmborg, 2004); however, it is now also widely used by public organisations. It has become increasingly common that the public sector imitates or becomes inspired by the private sector, producing public services that operate and look like private business projects. This is a general trend and not unique to

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<sup>1</sup> In this thesis, local authority is referred to as the public authority in each town with the general responsibility for delivering public services. An explanation of how the term "local authority" is used and defined in this thesis is found in the chapter *Local authorities and their environmental management*.

<sup>2</sup> In ISO 14001, the environmental performance is defined as "measurable results of the environmental management system, related to an organization's control of its environmental aspects, based on its environmental policy, objectives and targets" (ISO, 1996).

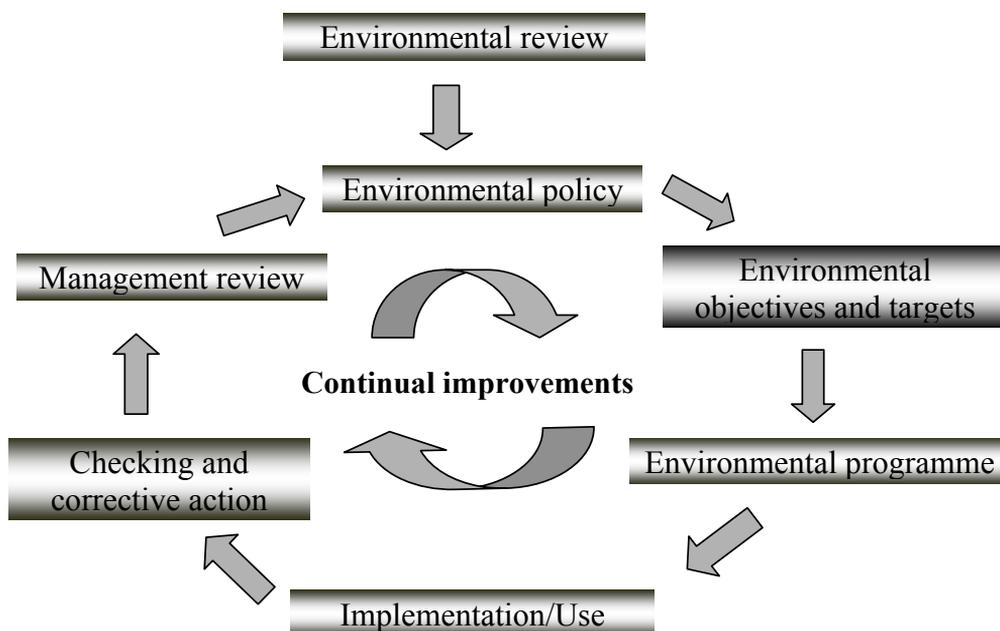
environmental management and is often discussed in terms of New Public Management (Hill, 1997). However, the organisations in the private and the public sectors often differ significantly in roles and structures and the public sector's imitation of the private sector brings about questions whether structures, management approaches, and tools used in the private sector actually are useful in the public sector.

In Europe, there are two commonly used standards for designing EMSs: the international ISO 14001 (see ISO, 1996) and the EU regulation Eco-Management and Audit Scheme (EMAS; see EC, 2001). The EMS standards, and the way of working connected to EMSs, are based on the Deming Plan-Do-Check- Act cycle. In this thesis, EMSs are referred to as those systems that are built according to or inspired by the main principles of ISO 14001 and EMAS, which are illustrated in Figure 1. These standards are designed according to similar structures as other standards for management systems such as the quality management standard series of ISO 9000 (see ISO, 2000). This means that the standards are compatible and could be used in a combination. During the last few years, ISO 14001 has been revised. By the end of 2004, a new version of the standard was launched (see ISO, 2004). Because this standard was not available or in use during the period when the research was carried out, I refer to the 1996 version of 14001 in this thesis.

One corner stone in EMSs is continual (environmental) improvements (ISO, 1996). To achieve this, the organisation has to identify its current environmental impact. This is done during the *environmental review* (Figure 1). Thereafter, the organisation designs an *environmental policy* and sets *environmental objectives and targets* in order to make the policy operational. *Environmental programmes* are used to translate the environmental objectives and targets into action. The standards require a wide range of environmental procedures and a fairly extensive documentation of the EMS efforts. These procedures are set in place during the *implementation or use phase*.

Moreover, it is important to implement procedures to measure and control how the organisation actually works towards the objectives and targets (this is done during the *checking and corrective action phase*, in which the systems often are audited). If the systems fulfil the requirements in ISO 14001 or EMAS, the organisation can choose to go through a certification audit in order to achieve an ISO 14001 certificate or EMAS registration. Since EMS is a management tool, the management has an important role; not only to provide with support throughout the EMS process, but also to evaluate the functionality of the EMS by reflecting on the results achieved, the audit protocols, and other documentation. Then they decide on changes and improvements that should be made to work towards continual improvements (*management review phase*).

The management's review is then fed into the next round in the cyclic EMS process.



**Figure 1.** Basic principles of standardised environmental management systems (EMSs).

EMSs are common in companies in the private sector and have also been studied more academically compared to the EMS use in local authorities. In October 2004, about 70,000 organisations (mainly companies) worldwide were certified according to ISO 14001 (ISO world, 2005). EMAS is less used. By the end of 2004, there were just over 3000 registrations (also mainly companies) in Europe (EMAS, 2005). However, these figures measure only how many certificates there are and do not say anything about the number of organisations that are in the process of implementing EMSs or that have EMSs but have no intention to get them certified/registered according to ISO 14001 and/or EMAS.

According to a survey of 135 ISO 14001-certified companies in Sweden, the most common reason for EMS implementation is improving the corporate image (Poksinska et al., 2002). This was followed by marketing advantages, customer pressure/demands, and relations with authorities. This means that the main motivators for EMS implementation in companies are strongly focused on external marketing. Another important driver for EMS implementation in companies that has been noted is earlier familiarity with quality management

approaches and tools (such as Total Quality Management, ISO 9000) (Curkovic et al., 2005). EMS implementation can be seen as a development or extension of an already existing quality management strategy. Companies noted that the most important benefit of implementing an EMS was an improvement in their corporate image followed by environmental improvements, improved relations with authorities, improved internal procedures, and increased customer satisfaction (Poksinska et al., 2002).

Ammenberg (2003) showed that there are many academic studies on the effects of using EMSs in companies. Most of these studies focus on operational effects rather than on the environmental effects from EMS implementation. Ammenberg's thesis illustrates that EMS could be a powerful tool if used in a sensible and conscious way and not only in order to get another certificate. There is thus some concern of how effectively the EMS tool is used in the private sector (Ammenberg, 2003; Axelsson et al., 2003). This raises the question whether this critique is also valid in the case for the EMS use in the public sector.

Just having an EMS certificate does not guarantee an effective<sup>3</sup> EMS or positive results/effects (Rondinelli and Vastag, 2000; Poksinska et al., 2002; Ammenberg, 2003; von Malmborg, 2003; Curkovic et al., 2005). The organisation thus has to look beyond the certificate and have an outspoken will to improve its environmental performance. Like many others, I regard the EMS tool as one tool among many, not as a magic potion.

In some ways, the general environmental impact differs between the organisations in the private (especially the industrial) and the public sectors. For example, manufacturing companies' most significant environmental impact often is related to their energy and material flows. This kind of environmental impact is referred to as direct environmental impact. The environmental impact from the core activities in organisations in the public sector, on the other hand, are often connected to activities related to their exercise of authority, planning, and training, which are referred to as indirect environmental impact. Indirect environmental impact often gives rise to environmental impact that could be difficult to evaluate since it affects people and organisations outside the organisation. For example, it might be difficult to measure the environmental effects from an information campaign launched by a local authority, since it is hard to estimate whether and how the citizens' behaviours change as a consequence of the campaign.

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<sup>3</sup> In this thesis, effective is referred to as having the desired effect, effects that lead to better environmental management (process effectiveness) and in the long term a better environment (environmental effectiveness).

The interest in using EMSs has increased in local authorities all over the world during the last decade. Apart from local authorities in European countries such as Sweden, Norway, Finland, the UK, Germany, Greece, and Italy, local authorities in the USA, Canada, New Zealand, Australia, and Japan are using this tool (Aall, 1999; LIFE98, 2001; GETF, 2002; Bekkering and McCallum, 1999; Cockrean, 2001; Swift and Broady, 1998; Ito, 2003a and b). Many countries promote the use of EMSs in local authorities in different ways, e.g., by launching local authority-adapted EMS standards (Riglar, 1997; Swift and Broady, 1998; Aall, 1999). The European Union is rather active in promoting EMS use in local authorities. The EU even considers making EMSs statutory for local authorities with 100,000 inhabitants or more (EC, 2004). The EU has launched several EMS projects in order to figure out how to design a pan-European local authority-adapted EMS standard (see LIFE98, 2001; PreSud, 2005). EMS promoting projects for local authorities have also been carried out in the United States (GETF, 2002). These EMS projects mainly have a practical focus and the amount of scientific research carried out in this field is limited, both in Sweden and abroad.

### ***Local authorities – important actors on the environmental arena***

As mentioned earlier, this thesis focuses on how local authorities use EMSs. They play a very important role when it comes to environmental management and policy implementation. They are important links between citizens and national and international public bodies because they are close to those affected by international and national policies, strategies, and general agreements (UN, 1992; chapter 28.1). There are several complementary reasons why local authorities are important for environmental management. For example, the local authorities can be seen as resources of environmental knowledge and expertise, which could encourage and facilitate the development of environmental management efforts among other actors within their territory (von Malmborg, 2004). By having an ambitious internal environmental management within the local authorities and by committing to voluntary environmental agreements, local authorities could have a positive influence, inspiring other actors in society to follow their example.

In addition, the citizens could be seen as the local authorities' customers. Being accountable and legitimate with the customers is also important. Providing a good example by having a serious environmental management could therefore be an indicator or factor that contributes to customer loyalty. However, local authorities have a monopoly of many of the services delivered; the customers sometimes have little choice of service deliverer. Due to changes in society, which will be discussed later in this thesis, this situation is currently changing at least for some of the local authorities' services.

The organisations of local authorities are often fairly extensive and their own activities give rise to environmental degradation. This means that it is important that they make efforts to improve their organisations' own environmental performance. Local authorities are also significant as employers, and efforts for improving the local authority's own environmental performance could also be important in terms of being an attractive and accountable employer.

The local authorities also have a powerful role when it comes to procurement. By including environmental requirements (which is possible at least to a certain extent) on the products and services that they buy, they pressure the bidding companies to conform to their environmental expectations. Since the procurement by local authorities generates a significant amount of money, companies could find it necessary and financially beneficial to improve their environmental practices if they intend to supply services for the local authorities. The local authority can formally or informally set requirements for other actors' environmental efforts or management. The power of this so-called "green procurement" has gained attention by ICLEI and the EU (ICLEI and EU, 2000).

### *Aim*

To conclude the discussion above, local authorities are important actors when it comes to environmental management; it is thus interesting to study how they manage the environmental impact caused by their own organisations. Although local authorities have shown an increased interest for using the EMS tool for this purpose, few academic studies have examined the use of EMSs in these organisations. Because the EMS tool is often seen as brought to the local authorities from the private sector, it is interesting to study whether this approach is sensible or if it is connected to any risks or difficulties.

The overall aim with this thesis is to create a broader understanding of how the EMS tool works in local authorities. This means to study whether EMS is a useful tool for managing the environmental impact from the local authorities' activities and to highlighting its strengths and weaknesses as a tool. To elaborate this aim, this has been studied from several perspectives in the six appended papers, which constitute the basis for this thesis. The aims and research questions for the papers are presented in the respective papers (Papers I-VI) and in Table 1 (page 34).

The aim of the cover essay is to respond to the overall aim by compiling and cross analysing the results from the appended papers. To uncover different perspectives on EMS use in local authorities and to structure the results from the cover essay, the results are organised according to the organisational model of Porras and Robertson (1992; *Methodology* chapter).

## *Limitations*

Local authorities and environmental management in local authorities are complex and multifaceted. Therefore, when writing a thesis in this field, a wide range of limitations has to be made in order to make it feasible. The aim of this thesis is to create a broader understanding of how the EMS tool works in local authorities, but the environmental effects from using the tool has not been studied per se.

The empirical research for this thesis has mainly been performed in Swedish local authorities. When my research was initiated, research on the use of EMSs in Swedish local authorities had been carried out in one local authority (Burström, 2000a). Hence, no research had been carried out to explore and explain Swedish local authorities' use of EMSs nation-wide and more generally. Swedish local authorities are interesting to study since EMS is a widely used tool in these organisations and many of them have used EMSs for a fairly long time, which means that there is a reasonable amount of experience using the tool. In addition, results from a U.K. study (Riglar, 1997), similar to Paper I and II, show comparable results. Given these arguments, it should be possible to draw several parallels to EMS work in local authorities in other countries from the results and discussions held in this thesis, despite the Swedish empirical perspective of this thesis.

Furthermore, the thesis focuses on local authorities that have implemented or are in the process of implementing EMSs in their departments. This means, apart from Paper I (which explores the frequency of EMS using local authorities), that no local authorities that do not use EMSs in their organisations have been studied. This thesis focuses on the local authorities as administrative and operational units (as will be further defined and discussed in the next chapter), which is the main organisational level where the EMSs are being implemented. Typically, local authorities have subsidised local authority-owned companies (for example, the energy supply in the local territory and waste management). These companies have been excluded from the scope of this thesis, even though the local authorities own all the shares in these companies. The reason for this exclusion is that these companies compete in a similar market with similar prerequisites as companies in the private sector and therefore might have different incentives and drivers for using EMSs. In addition, they may also use different approaches compared to the local authority departments.

Most of the interviews that have been carried out for this thesis (Papers I-V) have been conducted with the local authorities' corporate environmental coordinators. The main reason for choosing these is that they are the persons within each local authority with (delegated) main responsibility for implementing the EMSs (in the sense that they support, supervise and guide the departments) and thus possess the general picture of the EMS work in their individual local authority. Of course, it should have been interesting to include politicians and people working in the departments to a higher degree. However, given the perspective and scope of this thesis, the environmental coordinators were considered the most appropriate information and knowledge contributors.

### ***Outline of thesis***

The *Introduction* gives a background to this research, presents the aim and research issues and describes the context in which this research has been carried out. The next chapter, *Local authorities and environmental management*, defines how the concept local authority is used, presents different perspectives on environmental management in local authorities, and provides a brief background to Swedish local authorities and their environmental management in general. In the *Research process*, I describe how the research for this thesis has developed and why it has taken certain turns. The next chapter, *Methodology*, describes the analytical approach for compiling the cover essay and provides brief descriptions of the methods used for the studies. The results are presented, analysed, and discussed in *Local authorities' approaches to standardised environmental management systems*. This is followed by the *Conclusions*. The six papers that this thesis is based on are attached as appendices.

# Local authorities and their environmental management

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*This chapter describes how “local authority” is used in this thesis and gives some background information about local authorities in Sweden and their incentives to address environmental issues. This chapter also gives different perspectives on environmental management in local authorities in general.*

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## ***The concept of local authority***

This thesis examines the public authority responsible for delivering public services in each city or town – in Swedish this is called *kommun*. English dictionaries provide several equivalents for this concept. The Merriam- Webster dictionary (Merriam-Webster, 2005) lists the following three relevant and possible alternatives:

### ***Municipality***

- 1. a primarily urban political unit having corporate status and usually powers of self-government*
- 2. the governing body of a municipality*
- 3. (legal dictionary). The body of officers, taken collectively, belonging to a city, who are appointed to manage its affairs and defend its interests.*

### ***Local authority***

*an administrative unit of local government*

### ***Local government***

*the government of a specific local area constituting a subdivision of a major political unit (as a nation or state); also: the body of persons constituting such a government.*

This thesis focuses on the operational administrative organisation, which means that the focus is set at the different administration and service delivering departments (for example, education, social services, heating and maintenance of parks and public areas). Although these concepts are closely related, the term this thesis uses is local authority. One important reason for choosing the term local authority is that this is the English translation of *kommun* used by the Swedish national association that represent the governmental, professional, and employee related interests for Swedish *kommuner* (Swedish Association for Local Authorities).

In this thesis I differ between two different sectors in local authorities: the technical sector and the soft sector. The technical sector contains those departments with rather technical activities, such as environmental protection, energy supply, park and road maintenance, and planning. Departments categorised within the soft sector include general administration, child and elderly care institutions, schools, and social services.

### **Swedish local authorities – a brief overview**

Local authorities in different countries may have different approaches to management, tasks, and structure. However, local authorities in most countries provide society with a framework for democracy since they have a democratically elected and politically appointed management. Compared to other countries, Swedish local authorities are fairly autonomous and independent (John, 2001). This could (at least partly) be explained by the last decades of decentralisation processes, meaning that the local authorities to a certain extent are free to design their organisations as long as they fulfil their statutory duties (Lundqvist, 2001). Hence the national government does not control the local authorities other than by regulation. Swedish local authorities are required by law to provide citizens with e.g. waste management systems, environmental protection, education, planning, housing, social services, elderly care and health, and safety services (Gustafsson, 1999).

Despite the Swedish local authorities' high degree of autonomy, the freedom associated with decentralisation is limited, because the Swedish national government is still in charge of regulating many of the activities carried out by local authorities (Gustafsson, 1999). Moreover, local authorities' increase in responsibility has not been compensated with increased state funding (*ibid*). Hence, the decentralisation can be seen as a way for the national government to put more responsibility (which followed by the decentralisation) on the local level without providing extra financial resources. Furthermore, decentralisation is an opportunity aligned with an increased responsibility for the local authorities because the pressure on them has increased to possess a more extensive environmental expertise in order to run and manage the activities they are obliged to fulfil (Dobers, 1997).

In the 1980s during the decentralisation processes in Sweden, the public sector (not only in Sweden) was criticised for its inefficiency (Jacobsson, 1996; Hill, 1997). These criticisms lead to reforms in the public sector, reforms that adopted management approaches and tools used by the private sector (Forsell and Jansson, 2000). As a result, public organisations were structured and operated in similar ways as private businesses. This development or phenomenon is labelled New Public Management and has been referred to as

“company-isation” (as defined by Brunsson, 1994), or “businessification” (Norén and von Malmberg, 2004).

Since 2003, there are 290 local authorities in Sweden; however, at the time when this research was initiated the number of local authorities was 289. At the time when the research for this thesis was carried out, there were only 11 local authorities that had more than 100, 000 inhabitants (SALA, 2004). The average number of inhabitants in Swedish local authorities is 30,000, while the median local authority in Sweden has 15, 000 inhabitants (SALA, 2004). Depending on size, local authorities have different approaches to whether or not they would implement EMSs, and how they implement EMSs. Therefore, this thesis distinguishes between larger and smaller local authorities. In this thesis, larger local authorities have 50, 000 inhabitants or more. Smaller local authorities have less than 50, 000 inhabitants. This categorisation is based on the analyses of EMSs in the first study (Papers I and II) and can be seen as a simplified or more aggregated categorisation compared to that used by SALA (see SALA; 2004). However, the chosen categorisation or generalisation is also related to the national statistics of inhabitants in Swedish local authorities. This thesis mainly focuses on local authorities with respect to the number of inhabitants rather than the number of employees because it is implied that larger local authorities generally have larger administrations and thus larger and more complex organisations.

### **Environmental efforts in Swedish local authorities**

Swedish local authorities are fairly active when it comes to environmental management. For example, Sweden (along with the Netherlands, and the U.K.) is considered pioneer when it comes to LA 21 initiatives (Eckerberg and Lafferty, 1998). In 1998, 56% of the local authorities had LA 21 strategies (Brundin and Eckerberg, 1999), while a few years later this had increased to 70% (Edström and Eckerberg, 2002). According to the surveys on LA 21 initiatives in Sweden (see Brundin and Eckerberg, 1999; Edström and Eckerberg, 2002), it seems like the efforts made within LA 21 are (or at least were until 2002) mainly related to environmental issues and thus “greening” of the local authority. The Swedish national government encourages local authorities to work with environmental issues in several ways. For example, there are 15 environmental quality objectives for Sweden that have been or are in the process of being broken down on regional and local levels (see Swedish National Government, 1997). Furthermore, the local authorities also have legal authority to deal with issues regulated in the environmental legislation. In order to enhance environmental legislation, much of it has been compiled in the Environmental Code (see Swedish national government, 1998a).

In a further attempt to promote sustainability efforts in local authorities, the Swedish National Government established Local Investment Programmes (LIP) at the end of the 1990s to encourage the conversion to a more ecologically sustainable society. About SEK 6 billion was earmarked (Swedish National Government, 1998b). Two core issues in LIP are cooperation between the actors on the local level (e.g. businesses, non-governmental organisations and local authorities) and creating new job opportunities. Local authorities could apply for grants for locally run sustainability projects. For example, LIP grants helped support projects that promoted the conversion towards more environmentally adapted energy supply, water and sewage treatment and waste management (Hanberger et al, 2002). A further development of LIP initiative is the Climate Investment Programme initiative that was started in 2003 (see Swedish National Government, 2003). The Climate Investment Programme can be seen as a follow-up or development of the LIP initiative, and it is based on the same principle as LIP, but the focus on these investments is to reduce emissions of greenhouse gases.

### ***Different perspectives on local authorities and their environmental management***

Since local authorities are complex organisations, they can be seen from several different and often overlapping perspectives. Erdmenger (1998), for example, describes the complexity and organisation of local authority environmental management from a political, administrative, and territorial perspective. I also find these perspectives useful when describing local authorities' activities in general. These are not universally prevailing perspectives on environmental management in local authorities; they are models that are used to illustrate and explain the local authorities' activities and roles in general and environmental management in particular.

In local authorities, there are two types of management: political management and the management of the civil servants. Political management develops strategic issues such as the vision for the development of the organisation and its territory of governance and service delivery. Such activities, along the power of taxation and establishing fees for public services are connected to the political perspective on local authorities. Environmental management issues such as environmental policy-making and budgeting are categorised within the political perspective. A local authority can be seen in the perspective of a geographical limited area or territory in which citizens live and industries operate. In terms of environmental management, this perspective is linked to the territorial boundaries of the local authorities. It covers activities such as implementing environmental protection plans and other measures in order to control the "physical" development within the geographical area that the local authority administers.

The third perspective on local authorities as discussed in this thesis is the administrative perspective, which refers to the operational units of the local authority including the general administration of the departments' activities such as running the schools, maintaining the parks and roads, and providing other public services. In terms of environmental management, it is mainly connected to controlling the local authority's internal environmental performance. Activities such as implementing local authority internal environmental action plans or EMS implementation according to the principles of ISO 14001 or EMAS can be included in this perspective. A fourth perspective on environmental management has been identified that has a broader scope and includes local businesses and the citizens within the local territory (Burstrom, 2000b). This perspective can be characterised by LA 21 actions.

It is important to remember that the different perspectives on environmental management in local authorities operate on different levels in the organisation. Because the boundaries between the different perspectives on environmental management often overlap (Erdmenger, 1998), it is difficult to single any one of them out and study one perspective in total isolation. For example, a decision made on a corporate level (political environmental management) can contribute to amendments in the physical planning (territorial environmental management), which in turn leads to changed procedures at the administrative level. Since EMSs are implemented at the administrative (or operational) level of the local authorities, it is this organisational level within the local authorities that is the main focus for this thesis.



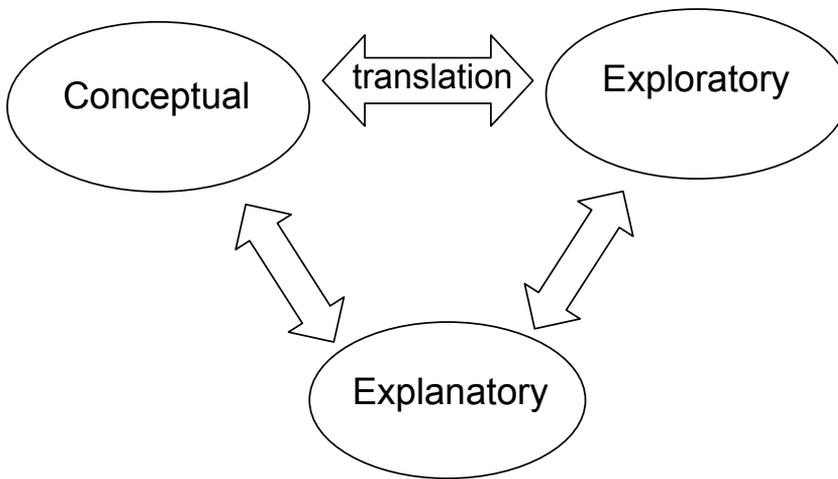
## Research process

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*This chapter describes the development of this thesis. The research process is described according to how the appended papers are connected. An alternative way of describing the research process would be to describe according to chronological order – the sequence the studies were performed. The sequential order of the studies (papers) is Paper I, Paper II, Paper IV, Paper VI, Paper III, and Paper V.*

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This thesis departs from a technological scientific perspective on the environment. The focus has been on studying how the EMS tool works in local authorities. In order to describe the research process and how the studies are linked to one another, I have categorised the different phases in the research process in three interdependent groups: conceptual, exploratory, and explanatory (Figure 2).



**Figure 2.** The key approaches in the research process for this thesis.

Although the standards ISO 14001 and EMAS address all kinds of organisations the use of the EMS tool has been more explored scientifically in the private sector compared to the public sector. As mentioned earlier, there was no general understanding of how EMSs were used in Swedish local authorities when my research began; therefore, the first thing to do was to explore the EMS situation for local authorities using a national postal survey addressed to all local authorities in Sweden (Papers I and II). This generated a rather cursory picture of how local authorities use EMSs - how many that use EMSs, why they choose to use this tool, what departments are involved in the EMS implementation, and

their intentions and ambitions when it comes to their EMS efforts. A few years after the first study, a follow-up study was performed with those local authorities that had participated in the postal survey. However, this time only local authorities that still were in the process of implementing EMSs (or had EMSs in place) were interviewed and studied since the purpose of this was to study how the EMS work had developed over time (Paper III).

Following these rather exploratory studies, more in depth studies were carried out to develop a deeper understanding of the local authorities' approaches to EMS implementation. Case studies in Gothenburg and Newcastle were performed in order to study how their adaptation of the EMS tool and how their approaches were correlated to the EMS standards (Paper IV). The EMS work was analysed from an institutional perspective in order to understand how the EMS work was disseminated in the organisations, what strategies were used, and how the EMS work was structured and perceived.

During the research process, it was discovered that local authorities often experience that environmental impact of a more indirect character, i.e. that related to decision-making, planning, and education is difficult to manage within their EMSs. Therefore, this topic was further explored by performing focus group interviews in three local networks of environmental coordinators from different local authorities (Paper V). Focus group methodology was chosen since it is often perceived as useful when addressing issues that are difficult or sensitive (Wibeck, 2000). This gave a greater understanding of the problems involved not only with regards to their approach to indirect environmental impact but also to their approach to EMSs in general.

In order to understand how the environmental management in the local authorities in general could be improved and how the identified shortcomings in local authorities' use of EMSs (e.g. difficulties in managing indirect environmental impact) could be complemented by other tools, a theoretical paper was written (Paper VI). In this paper, the EMS tool and its (possible) contributions are analysed in a broader environmental management context (Paper VI).

The results from the six papers were then compiled and analysed in the cover essay, which examines the main issues from the studies. It also elucidates strengths, and weaknesses in local authorities' approaches to EMS. The cover essay compiles and cross analyses the results from the appended papers to provide a better understanding of local authorities' approaches to EMSs. The results in the cover essay were structured using Porras and Robertson's (1992) model on organisational behaviour (see *Methodology* chapter).

To conclude, the research for this thesis has a strong empirical basis and it has shifted from exploratory to explanatory. Most of the papers contribute to all of the different perspectives illustrated in Figure 3 in one way or another. However, they have been categorised according to their main features. Papers I and II are generally of the more exploratory nature, while paper IV can be seen as a deep study of the translation of the EMS idea to local authority conditions. Paper V, on the other hand, is rather explanatory. Paper VI gives an idea of how EMSs can be positioned in a broader context in local authorities' environmental management and contributes to the conceptual part along with the cover essay. Having an understanding of how the EMS idea is translated from the standards to its actual use in local authorities would significantly provide knowledge that is useful both academically and for practitioners. It could inspire local authorities to develop their EMS work. It would also provide a relevant basis for suggesting areas that need improvements. Over time, these improvements would have a positive influence on the local authorities' environmental performance.



# Methodology

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*This chapter describes the methodology used for the cover essay and it briefly presents the methods, analytical approaches, and research questions used in the appended papers. For more detailed descriptions and discussions concerning the methods used in respective paper, see Papers I-VI.*

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Although this thesis uses both qualitative and quantitative methods, the main part of the research is based on qualitative studies. Given the aim of this thesis, when selecting local authorities and persons to interview or address with the research questions, it has been important to choose local authorities and people who have experience with EMSs. Hence, the sampling strategy for the studies has been purposeful (if relating to the different sampling strategies defined by Yin, 1984).

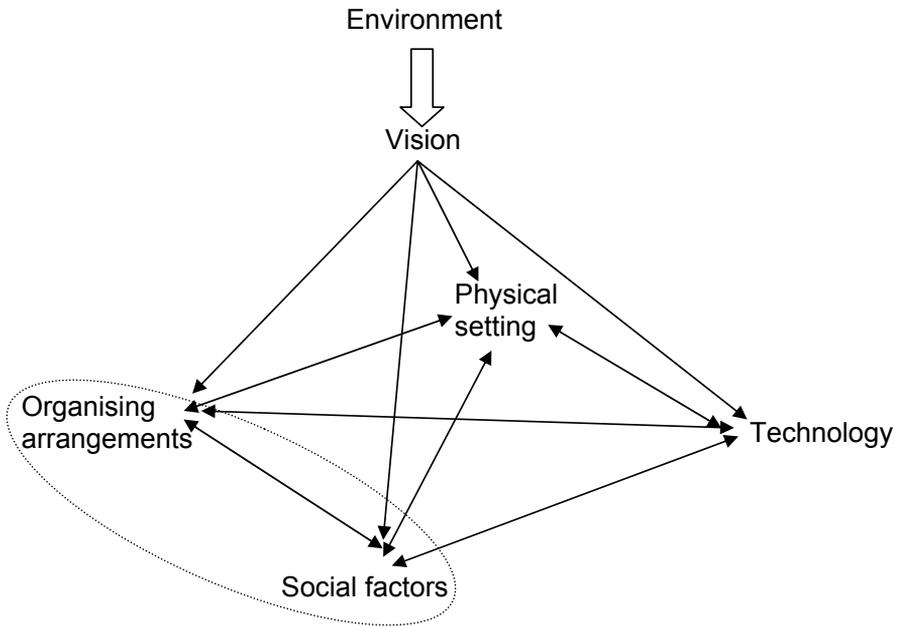
## ***Analytical approach for the cover essay***

The cover essay is written based on the six appended papers. Therefore, a key issue when analysing and compiling the results was to identify central factors or important characteristics for local authorities' EMS approaches. Since the research studies were developed to examine the EMS use from different perspectives, the identification was done by fitting the pieces of the "puzzle" together and identifying what issues reappear in the papers and what seemed to be important characteristics in the way local authorities approach EMSs. Once this identification was done, I ended up with a few categories of factors that described and distinguished how local authorities use EMS. In order to develop a structure for the results and to set the results in a broader context, the characterising factors were positioned in Porrás and Robertson's (1992) model on organisational behaviour, which is described below. This model has only been used for structuring the results. This means that it has not been used as a point of departure when carrying out the empirical research or for the analyses.

## **Model for structuring the research findings**

Porrás and Robertson's (1992) model is based on a systems' perspective on organisations and elucidates the organisational dynamics (see Figure 3). Porrás and Robertson state that the individuals in the organisations are of utmost importance for how the organisation behaves and the individuals in the organisation need to change the way they do things in order to achieve organisational change. The EMS tool aims at continual improvements, which implies that the organisation needs to make changes in order to avoid making the EMS an add-on system to the organisation. Therefore, examining the factors

that contribute to an organisation's willingness and ability to change could be helpful.



**Figure 3.** Factors constituting the organisational work setting (Porras and Robertson, 1992). The dashed oval accentuates where the research for this thesis has its main focus.

Organisational behaviour depends on the *work setting* and the *environment*. In the case of environmental management, the *environment* could be represented by the organisation's external pressure in terms of stakeholders. Citizens (by being customers), the national government (by constructing legislation and national environmental policies and schemes), and local industries: all these are important stakeholders. The organisational *vision* (i.e., the organisational core values and beliefs) is also important for the work setting since it is the foundation of the organisation's activities. The *work setting* could be seen as the internal dynamics of the organisation. Porras and Robertson (1992) state that changing factors in the individuals' work settings in a way that would promote the desired behaviour are important when wanting to achieve changes.

For describing and explaining the dynamics of organisations, Porras and Robertson (1992) identified four interdependent categories of factors that constitute the *work setting* and thus affect organisational behaviour (Figure 3). These are *organising arrangements*, *social factors*, *technology*, and *physical setting* (Figure 3). Hence changes in one factor affect the other factors. Therefore, to achieve change, it is important that all factors are taken into consideration in order to steer towards the desired behaviour.

The *organising arrangements* include formal parameters that affect the behaviour in the organisation: goals, strategies, structure, administrative systems, and policies. The more informal features related to the people in the organisation (both individually and in small groups) are referred to as *social factors*. These include issues such as the organisational culture, management style, interaction processes, informal patterns, and networks. The *technology factors* – workflow design and technical expertise – are connected to the disposal and development of technical aids that enhance organisational outputs. The *physical setting* is related to how the work place is designed. The physical ambience has proven important for motivation and effectiveness.

The aim and perspective of this thesis is mainly connected to *organising arrangements* and, to a certain extent, *social factors* (as is indicated in Figure 3). The *organising arrangements* are important in terms of deciding the structure for the EMS work, the strategies for EMS efforts, and the ambitions and goals of the EMSs. The *social factors* are important since they determine how the EMS work is perceived in the organisation and how the formal aspects are translated into action.

### **Organising arrangements**

The following parameters within the *organising arrangements*' perspective are addressed in the cover essay:

- Goals;
- Structure;
- Strategies;
- Administrative systems; and
- Ownership.

The *goals* with the EMS implementation and use of EMSs (in terms of what the local authorities want to achieve with their EMSs) have been chosen as an important parameter since it says something about the drivers for EMS implementation and what the local authorities expect from the EMSs. The *strategies* reveal how the tool is (or is planned to be) disseminated and how the standards are used (e.g. whether certification is an aim). The *structure* of the EMSs is important since it describes the practical conditions for the EMSs. This

could be the EMS focus, resources for the EMS, and coordination of and follow-up of the EMSs. In this context, the parameter *administrative systems* deals with issues such as how integrated the EMSs are (or are planned to be) into the daily work and into other more general management efforts.

*Ownership* is used as a parameter to describe the EMS approaches because it is important to describe and analyse where in the local authority the responsibility for the EMS is and should be located.

### **Social factors**

As mentioned when positioning the research in the organisational model, issues directly linked to organisational culture and other parameters within the *social factors* were not specifically addressed or included when designing this research, but some of the results can be connected to and thought of as *social factors*. This means that the discussions concerning social factors are less in depth and should be considered as reflections that contribute to a further perspective into the research findings and set the local authorities' approaches to EMSs in a somewhat broader context compared to what is done in the research papers. Within the perspective of *social factors*, the following parameters have been identified as especially useful when describing the local authorities' approaches to EMSs:

- Culture;
- Management style; and
- Interaction processes.

The organisational culture is very important for achieving changes and improvements in the organisation. This includes issues such as commitment (in terms of common values within the organisation), how the organisation applies and adopts the EMS approach, and whether or not there are any external pressures for EMS implementation that affect their values, commitments, etc. This brings about a discussion of institutionalisation of the EMS use. The management style is of utmost importance for the organisational culture, especially when it comes to their commitment and support for this voluntary approach. It is important to remember that it is the management of the civil servants that is referred to in this context. The management style is here discussed in terms of being the way in which the EMSs are run and managed. *Interaction processes* are also important when describing the local authorities' approaches to EMSs. In this context, this refers to interaction within the local authorities, between the local authorities and their stakeholders (both citizens and companies), and between local authorities. In order to achieve change, it is important that the organisation is open to learn more about how to act and behave and what can be done to change the environmental situation. In this context, organisational learning has been identified as an important factor. This, however, is not included in Porras and Robertson's model, but it is interesting

since it provides with an interesting and important perspective on local authorities' approaches to EMSs. Learning can be defined by knowledge and action (Argyris, 1993). The knowledge does not implicitly lead to learning unless it is converted into action. By gaining experiences from their own and other local authorities' EMS work, the local authorities learn more about their approaches to environmental management and how they could improve the environmental performance.

### ***Methods used in the appended papers***

The methods used to elaborate the aims in the appended papers are case study methodology, postal survey, and interviews (as described and discussed in *Research process*). Table 1 compiles what research questions that are addressed in the respective paper and the analytical approaches that were used. For a more detailed description and discussion on the methods, see Papers I-VI. The methods chosen for this thesis are connected to the constant problem with misinterpretations and subjectivity. In order to make analyses as transparent as possible and to validate the results, several measures have been taken. For example, the design phase of each study has been very important. Often before beginning a study, the ideas were discussed with environmental coordinators in local authorities in order to make the studies as relevant as possible. In the case of Papers I, II, and V, preparatory studies have been performed.

Throughout the research process, the results have been communicated (by discussions and by sending drafts) with the informants for the different studies in order to ensure the accuracy of the interpretation of their approaches and attitudes towards EMS. In all studies, apart from Paper IV and VI, the results were first compiled in reports written in Swedish (Emilsson and Hjelm, 2001; 2004a and b) and sent to the respondents in order to validate the results and findings with them. Once their feedback was received, the papers were written with the reports and feedback (if any) as a point of departure. In the case of Paper IV, the initial report was written in English, since the study was partly performed in Newcastle, U.K. This draft was sent to the respondents and the feedback from the informants was integrated to the final version of the paper. Moreover, multiple sources of evidence have been used in most of the studies; for example, the results from the interviews have been complemented and crosschecked with EMS documentation from the local authorities.

**Table 1.** Presentation of each paper's main aim, research questions, methodology, and analytical approaches.

Paper	Main Aim	Detailed Research questions	Methods used for collecting empirical evidence	Analytical approaches
I	Exploring the state of the art of the use of Standardised Environmental Management Systems (EMSs) in Swedish local authorities (LAs).	How common are EMSs in LAs? What are the ambitions with the EMSs? What standards are used? How far have they come in the EMS process? What departments are involved in the EMS work?	Postal survey among Swedish LAs (235 local authorities responded to the questionnaire, which corresponds to 81% return rate).  The survey was addressed to the environmental coordinator in each local authority.	The results from the postal survey were compiled and analysed in a database. The results were categorised and compared. The main categorization of local authorities was to structure them according to size since smaller LAs tended to respond in one way and larger LAs in another.
II	Exploring the state of the art of the use of EMSs in Swedish LAs.	Why are EMSs used? What are the expectations and noted outcomes from the EMS implementation? How is the EMS work coordinated?		
III	Studying the EMS development over time in some LAs.	How is the EMS idea disseminated? What progress is made in the EMS process? What is the approach to EMS standards?	Semi-structured interviews. Telephone interviews with 37 corporate environmental coordinators.	The information was compiled and analysed in the same database that was used for Paper I and II. The results from papers I and II were used as point of departure.
IV	Analysing different approaches to EMS use.	What are the drivers for EMS implementation? What are the EMS strategies? How are the EMSs disseminated and accepted? What are the thoughts on future EMS work?	Case study methodology. (Newcastle City Council and Gothenburg City Council), where observation, documentation studies, and semi-structured interviews were performed.	Scott's (2001) model on characteristics for institutional characteristics was used as an analytical tool for analysing the EMS approaches. This model is related to the three pillars of institution (DiMaggio and Powell's, 1983).
V	Exploring how indirect environmental impact is and could be dealt with, within the frames of the LAs' EMSs.	How is indirect environmental impact managed? What is the relevance of indirect environmental impact in relation to the local authorities' total environmental impact?	Telephone interviews: one semi-structured group interview and two semi-structured focus group interviews with environmental coordinators.	Compiling empirical evidence of how local authorities manage indirect environmental impact and set this in relation to their core activities.
VI	Theoretically exploring the potentials of integrated use of different environmental management tools in order to make LAs' environmental management efforts more effective.	How can different tools for environmental management contribute to a more comprehensive environmental management in LAs? In this case, Substance Flow Analysis (SFA), Strategic Environmental Assessment (SEA), and EMSs were chosen.	No new empirical information was collected for this paper.	Previous research experiences were used as a basis for analysis. With departure from the tools' characteristics and factors that were considered important for environmental management in LAs, the potential of combining SFA, SEA, and EMS were studied.

## How local authorities approach EMSs

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*This chapter compiles, analyses and discusses the results from the appended papers.*

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In Sweden, many local authorities have used EMSs for a long time (Paper I), producing a fair amount of EMS experiences. The results in this thesis describe the local authorities' approaches to EMSs and reveal general strengths and weaknesses in their EMS efforts. Many of the issues that the local authorities find important for the existence and development of the EMS work are issues that in fact are not specific to environmental management but address the organisations' overall general management. Commitment, communication, knowledge, continuity and competency, are some examples of these general issues. Generally, the EMS implementing process is fairly slow in local authorities (Papers I, III and V), which perhaps could be due to deficiencies in one or more of these issues just mentioned as important for the EMS work.

There are many factors that influence how local authorities approach EMSs, which can be categorised as either organising arrangements or social factors (As defined by Porrás and Robertson, 1992). This is linked to the organisational structure and organisational culture respectively. Table 2 lists the factors that illustrate how local authorities approach EMSs.

**Table 2.** Parameters used (inspired by Porrás and Robertson, 1992) for structuring the results in this thesis. The issues in brackets describe each parameter.

<b>ORGANISING ARRANGEMENTS</b>	<b>SOCIAL FACTORS</b>
<b>Goals for the EMS work</b> <i>(drivers, expectations)</i>	<b>Culture</b> <i>(commitment, values)</i>
<b>Strategies for the EMS work</b> <i>(dissemination, use of standards)</i>	<b>Management style</b> <i>(commitment, legitimacy)</i>
<b>Structure in the EMS work</b> <i>(coordination, resources, focus, follow-up)</i>	<b>Interaction processes</b> <i>(communication, networking, learning)</i>
<b>Administrative systems</b> <i>(integration with other environmental management efforts)</i>	
<b>Ownership</b> <i>(responsibility for the EMS work)</i>	

### ***Goals for the EMS work***

Prakash (1999) concludes that companies would never make a beyond-compliance commitment unless there is a win-situation. In the case of implementing EMSs, the gains could be having a certificate, something that often is perceived of as reflecting accountability. The win could also be increased competitiveness and gains in market shares. The literature on the EMS use in the private sector often focuses on the EMS certificate and what benefits it brings to the organisation (Poksinska et al. 2002; Summer Raines, 2002; Curkovic et al., 2005). This could indicate that organisations in the private sector use EMS standards in a rather orthodox way – to fulfil all standard requirements in order to achieve the certificate or registration. When it comes to EMS implementation in local authorities, these organisations are also concerned with accountability (which will be further discussed later); however, it is fairly rare that their EMS work aims at a certificate (Paper I; Riglar, 1997; Swift and Broady, 1998; Burström, 2000a; Cockrean, 2001). Implementing an EMS is connected to costs; therefore, it is interesting to study what the local authorities receive from implementing EMSs. Gaining market shares is seldom an issue, since local authorities have a monopoly on many of the services that they deliver. Hence, what drives the local authorities to use EMSs?

Paper IV discusses that the pressure or governance on a national level in the country can have an impact on how likely the local authorities are to implement EMSs and also how they approach the tool and the implementation. In some countries (for example, the UK, Norway, and the region of Queensland, Australia), there is some kind of pressure or incentive from the national or regional level for local authorities to implement EMSs (Riglar, 1997; Aall, 1999; Swift and Broady, 1998). As mentioned earlier, this is also discussed on an EU level (EU, 2004). Swedish local authorities could of course be affected by the EMS encouraging efforts made in the EU, but on the Swedish national level there is no general local authority adapted standard or any formal pressure from the national government to implement EMSs in local authorities. However, there are other external factors that could have influenced them to use this environmental management approach: the national government's requirement for state agencies to implement EMSs (see SOU, 1996) and the increased use of EMSs in the private sector.

In Sweden, local authorities primarily use EMSs to improve the way they deal with environmental issues, i.e. to improve the structure of the environmental management (Table 3). This includes improving the integration of environmental efforts in the organisation and improving the coordination of the local authorities' environmental efforts (Paper II). Since environmental management has been an issue in (Swedish) local authorities for a long time, this finding was at first sight surprising because it was anticipated that the main

reason for EMS implementation would be to improve the environmental performance of the organisation. However, implementing EMSs can be seen as a way of organising and structuring their existing environmental efforts, which in turn could lead to improved environmental performance. Hence when having general knowledge and an overview of its environmental performance and what environmental efforts that are already done, it would be easier to identify gaps where the environmental management can be improved. A structured environmental management would also enhance identification of what activities and processes give rise to the most significant environmental impact. This means that the organisation learns what it can do and where it may need to improve its environmental performance.

Local authorities seem to be very concerned with how their organisations are perceived among their stakeholders (e.g., citizens and local companies), and implementing EMSs could be seen as a way of gaining external legitimacy for their organisations and activities (Paper II; Riglar, 1997; Bekkering and McCallum, 1999; Cockrean, 2001; Ito, 2003b; von Malmborg, 2003; Norén and von Malmborg, 2004). Another driver for EMS implementation is political pressure (Paper II; Table 3). This could also be linked to ensuring or gaining external legitimacy since EMS implementation could be seen as something that is politically correct. However, EMS implementation could also be a way in gaining internal legitimacy among the employees by being a responsible employer. For example, this could be due to the general development in society of being increasingly environmental conscious and that the private sector uses this tool to a great extent. The issue of legitimacy connected to EMSs and standards will be further discussed and elaborated in the paragraph *Use of Standards* (page 42).

**Table 3.** Reasons to implement Environmental Management Systems (EMSs) in Swedish local authorities (LAs) (Modified from Paper II). Since 89 (out of 107) LAs responded to this question, several of the LAs gave more than one answer. The answers are divided into six main categories; the total number of answers within each category is presented in bold text.

<b>REASONS TO EMS IMPLEMENTATION</b>	<b>NUMBER OF LAs</b>
<b><i>Organisational structural reasons</i></b>	<b>57</b>
-Structure in the environmental management	(24)
-Enhancing following-up procedures	(12)
-Coordination and integration of environmental efforts within the local authority	(9)
-Obtaining better/more efficient organisation	(6)
-Quality improvements	(5)
-Security (preparedness for accidents)	(1)
<b><i>Legitimacy</i></b>	<b>44</b>
-Set a good example	(15)
-Political reasons	(14)
-Establishing an environmental profile	(6)
-Demand from the public	(3)
-Adaptation to society	(3)
-Trustworthiness	(2)
-Marketing	(1)
<b><i>Direct environmental reasons</i></b>	<b>31</b>
-Decrease the negative environmental impact	(12)
-Mapping the environmental impact	(11)
-Environmental reasons	(6)
-Save natural resources	(2)
<b><i>A step in the Local Agenda 21 process</i></b>	<b>14</b>
<b><i>Financial savings</i></b>	<b>10</b>
<b><i>Increased awareness/commitment for environmental issues</i></b>	<b>8</b>
-Increased awareness for environmental issues	(5)
-Increased enthusiasm/engagement for environmental issues within the organisation	(3)

Fourteen local authorities mentioned that the EMS implementation is a natural development in the LA 21 process (Paper II; Table 3). As discussed earlier, much of the LA21 activities are related to environmental improvements, which means that the step to implement EMS might not be too revolutionary. LA 21 coordinators often feel that there are not sufficiently resources (in terms of time and finances) set aside for the LA 21 work (Eckerberg and Forsberg, 1998). This could be taken as if the local authorities' management support for LA 21 is not strong enough. By implementing an EMS, which demands management support, this problem could be thought to be solved. Hence the LA 21 activities would gain more legitimacy within the organisation. The close relationship between EMSs and LA 21 activities has been noted not only in local authorities in Sweden but also in the UK, Canada, New Zealand, Japan, and the EU (Riglar, 1997; Bekkering and McCallum, 1999; Pearson and Barnes, 1999; Cockrean, 2001; Ito, 2003a; EC, 2004).

At the time of the postal survey, very few of the departments within the local authorities had completed their first round in the EMS cycle. Still, half of them noted results from using the tool. These results were related to the reasons for EMS implementation and to the expected results. Thus, in Sweden, the tool seems to live up to the local authorities' expectations. This, however, does not necessarily mean that the EMSs lead to environmental improvements.

### ***EMS Strategies***

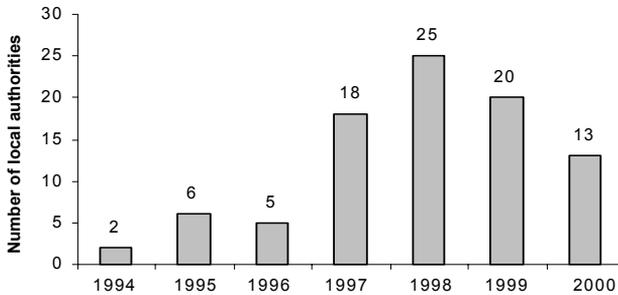
The EMS strategies are illustrated and discussed using the parameters: EMS dissemination and use of EMS standards.

#### **EMS dissemination**

In this thesis, the dissemination of the EMS work has been viewed from two perspectives: the dissemination of the tool among Swedish local authorities and the dissemination of the tool in the local authorities' departments. Paper I clearly shows that EMS is a tool that is frequently used in local authorities in Sweden. In 2000, almost half of them were in the process of implementing EMSs. It is mainly the larger local authorities that have chosen to use this tool (Paper I). One possible reason for this is that they often have large organisations in which it could be difficult to get an overview of the environmental management efforts in the different parts of the organisation. Hence, the EMS tool can be used to coordinate the environmental management and develop this overview of the efforts and progress made. Moreover, in larger local authorities, the administration and departments are often geographically more spread, which means that the implementation of an EMS could coordinate and structure the environmental communication and cooperation (Burstrom, 2000b). In a small local authority, its administration is often physically concentrated to one or a few closely located buildings, and it is common that one person is responsible

for most or at least much of the environmental efforts made, which means that it is easier to get this overview.

Implementing EMSs in Swedish local authorities has been an issue since 1994 (Paper I). This means that some of the local authorities have been using this tool for a fairly long time (Figure 4). There was a peak of local authorities initiating the EMS process in some or all of their departments in 1998 (Paper I). There are several explanations to this. The Swedish Association for Local Authorities launched a report in 1998 based on a few local authorities' EMS implementing pilot projects (SALA, 1998). Another reason could be that the EMS tool had gained some ground in the private sector and that positive experiences were reported. This, along with the general "business-ification" of the public sector, could have served as important sources of inspiration for the local authorities' timing for initiating this environmental management approach.



**Fig. 4.** Introduction of environmental management systems (EMSs) in Swedish local authorities (Paper I). The number above each bar represents the number of local authorities that introduced the EMS process that particular year.

As mentioned earlier, EMS implementation in local authorities is a long and time-consuming process. From a dissemination perspective, one of the important reasons contributing to this is that it is common that local authorities choose an unnecessarily complicated approach when initiating the EMS idea. As a consequence, the implementation efforts often failed and the EMS work had to find another approach (Paper III). By choosing a complicated approach, the organisation might face difficulties in motivating and engaging the employees to use this tool. In addition, when introducing the tool, it was common to launch pilot projects where one or a few departments participated in order to find an approach that suits the local conditions (Paper III). However, even if some of their departments were fairly advanced in their EMS maturity, it took some time before their approaches and good practice were disseminated to the rest of the

organisation. Pilot projects enable organisations to test and evaluate an EMS approach, encouraging departments to find approaches that suit them. By finding solutions on how to avoid or overcome barriers in the EMS implementation, this could help other departments avoid these difficulties. The experiences could then be disseminated throughout the local authority organisation, using, for example, common templates or guidelines for EMS implementation (Paper III).

Paper III shows that in most local authorities, the EMS idea generally had spread from the year 2000 to 2003, towards including a larger number of departments (Table 4). It was common that the EMS pilot projects had been caught up with. However, in 2003 there were still few local authorities where all departments had completed the first round in the EMS cycle.

**Table 4.** Development of Environmental Management Systems (EMSs) between 2000 and 2003 with regards to dissemination of the EMS idea among the local authorities' departments (Paper III).

<b>EMS IMPLEMENTING DEPARTMENTS/UNITS</b>	<b>2000</b>	<b>2003</b>
All	26	31
Some	11 <sup>a</sup>	6 <sup>b</sup>
<b>Total (of 37)</b>	<b>37</b>	<b>37</b>

a. Nine of these local authorities stated that in the long run all departments are to be involved in the EMS work.

b. Two of these local authorities stated that in the long run all departments are to be involved in the EMS work.

In local authorities that chose to implement EMSs in only one or a few departments in 2000, the most commonly selected departments for EMS implementation were those in the technical sector (Paper I). It was also these that most frequently were reported as successful in their EMS implementation. The technical departments have often been noted as successful EMS implementation in local authorities (e.g., Paper I; Honkasalo, 1999; Darnall et al., 2000; Cockrean, 2001; GETF, 2002; Norén and von Malmborg, 2004) because these often are the forerunners when it comes to EMS implementation in local authorities. Furthermore, the technical sector's organisations and activities sometimes resemble those in industry. This implies that they are more used to working according to procedures and other approaches connected to EMSs (Paper I). However, the technical sector was less stressed and accentuated in the local authorities in 2003, and the departments and units within the softer sector (such as educational departments, social care, etc) were often given prominence for being successful EMS implementers and users (Paper III). This could be seen as a consequence of their approach to the tool by choosing to implement simplified versions when initiating the EMS process.

## **Use of EMS standards**

Most of the local authorities that implement EMSs use some kind of guidelines for designing their systems. In 2000, ISO 14001 was the most commonly used EMS standard among Swedish local authorities (Paper I). In fact, ISO 14001 was three times as common compared to EMAS. Despite that the use of these standards is rather common; certification of the EMSs is, as indicated when speaking of drivers for EMS implementation, generally not an obvious aim (Papers I, III, IV and V). Whether the EMSs should be certifiable is often a matter for the individual departments within the local authorities (Paper III). The official EMS standards are thus often used in a rather pragmatic way in local authorities compared to the orthodox use of EMS standards in the private sector. It is sometimes experienced as being of minor importance whether the EMSs are “complete” and cover all issues from the start; the key issue is that the departments are committed and that they work with the issues they feel are important (Paper V).

Speaking of standards, it is interesting to reflect upon how they are used. They could either have a built-in value, which means that using standards could improve practices (Brunsson and Jacobsson, 1998). However, they could also be used for standardising the practice. It has been argued that using standards could be a way for an organisation to frame an identity and the identity could be affected according to which standards are used (*ibid*). For example, if a local authority decides to implement EMSs, the EMS standards are connected to certain values and expectations. When using an EMS, the local authority will be connected to these.

Standards could also be used for decoupling, which means that there is a gap between words, decisions, and action (Brunsson, 1989). For example, the ISO 14001 and the EMAS standards are often connected to mainly positive attributes, such as serious environmental management and accountability. It is thus possible that an organisation could hide behind these standards, using them as a smoke screen (as defined by Welford, 1998), letting the stakeholders believe that the organisation is serious about environmental management while continuing business as usual. This means that there are two separate processes running within the organisation: one dealing with the actual internal work within the organisation the other dealing with what is communicated externally (Brunsson, 1989). Hence, using a standard could be seen as a way of disclaiming some environmental responsibility (Brunsson and Jacobsson, 1998). However, judging only from the main drivers for EMS implementation in the local authorities studied in this thesis and the fact that they use the ISO 14001 and EMAS standards sources of inspiration rather than to get a certificate (Table 2; Papers I-V), there seems to be a will for changing the organisations in order

to improve their environmental performance. Thus the risk of using EMSs as a smoke screen should not be significant.

When this cover essay was written (in early 2005), there was only one local authority in Sweden (Uddevalla) that had certified/registered all of its departments (Uddevalla, 2005). They registered the whole organisation according to the criteria in the EMAS regulation. The general trend among EMS using local authorities, however, is to abandon the official EMS standards and use locally designed simplified standards instead (Paper III; Table 5). The locally adapted standards as defined in this thesis are based on the PDCA cycle and thus the main elements in ISO 14001 and/or EMAS (such as carrying out an environmental review, formulating an environmental policy, setting objectives and targets, and follow up of the EMSs). However, the ISO 14001 and EMAS-requirements on detailed documentation and procedures are often less emphasised in these standards (Paper III). This type of standards is henceforth referred to as simplified standards.

One reason for the development of simplified standards is that many local authorities find ISO 14001 and/or EMAS too complicated and/or formal to fit their needs (Paper III). Similar problems with the official standards have also been identified in Small and Medium Sized companies (SMEs; Ammenberg, 2003). In many cases, local authorities have therefore become driving forces in developing local EMS standards (Strömberg et al., 2004). These are often not only designed for local authority use but also in order to help the SMEs in the region to introduce EMSs in their organisations.

A further reason why simplified approaches to EMSs have emerged may be based on the critiques directed at standards such as ISO 14001 and EMAS. For example, ISO 14001 has been criticised for having a rather technical approach and that it could be a tool that mainly is suitable to address and deal with technical problems (Papers I and IV; Norén and von Malmborg, 2004). In fact ISO standards in general have been criticised for their technical focus (Tamm Hallström, 1998). Moreover, the fact that there is a technical committee designing the ISO 14001 standard (called TC 2007), could contribute to this perspective. Standards are often connected to controlling and inspecting, which means checking that organisations have the “right” procedures and processes along with the “right” documentation instead of focusing on the actual activities and their outcomes (Jacobsson, 1998). This means that technical expertise might replace other important ethical and political discussions and the focus lies on how things are done rather than what is achieved. As a consequence, there is little support for softer issues in ISO 14001 and EMAS, issues, for example, related to organisational culture and change.

According to the findings in Paper III, there are three times as many that use only simplified standards for the EMS work in 2003 compared to 2000 (Table 5). For example, in 2000 ISO 14001 was the most commonly used standard, almost one-third used only ISO 14001 for their EMSs. In 2003, it was most common to use only simplified standards. Almost half of the local authorities had this approach. It is also interesting to note that in 2000 eight local authorities stated that no standards would be used or that they either had not yet decided which (if any) standard(s) to use for their EMSs. The corresponding figure for 2003 is zero. This could be seen as an indicator of maturity of the EMSs in the local authorities.

**Table 5.** Comparison of local authorities' use of Environmental Management Systems' (EMSs) standards between 2000 and 2003 (Paper III).

<b>EMS STANDARDS</b>	<b>2000</b>	<b>2003</b>
Only ISO 14001	10	3
Only EMAS	1	1
Only simplified standards	6	18
ISO 14001 and EMAS	5	2
ISO 14001 and simplified standards	5	11
EMAS and simplified standards	0	0
EMAS, ISO 14001, and simplified standards	2	2
No standard	6	0
Do not know	2	0
<b>Total (of 37)</b>	<b>37</b>	<b>37</b>

The development of use of standards just described indicates that the local authorities seemed to be more flexible in 2003 compared to 2000 because there are more local authorities that use different standards in combination; i.e., different standards were often used for different departments. For example, it was clear that ISO 14001 was more commonly used in the technical sector compared to the soft sector (Paper III). Departments within the soft sector more often tend to use a more simplified approach to EMS implementation.

It is common that simplified EMS standards are structured in terms of different "levels of ambition", i.e., each department within the local authority where the standard is used can choose the level of ambition of their EMSs. In order to achieve a diploma for one level, certain achievements have to be made (Paper III; Strömberg et al., 2004). For example, the local authority of Järfälla has three levels: bronze, silver, and gold (for more information, see Järfälla, 2005). Issues that have to be dealt with to achieve the bronze level include assuring legal compliance, performing an environmental review, and a certain degree of education and information provided to the employees. For the silver level, the requirements, environmental targets, and objectives have to be fulfilled and

regular audits have to be performed. The gold level mainly includes ensuring continual improvements. In many cases, the most advanced level in the simplified approaches to EMSs means that the departments actually have certifiable EMSs (Emilsson and Hjelm, 2004a). Many local authorities have approaches that resemble Järfälla's approach; however, since the highest level of commitment includes a certifiable EMS, the simplification of the system could be questioned. Perhaps it is the actual approach and implementation that could be seen as simplified where the departments can choose their level of ambition and still get some kind of recognition for their efforts.

The "level approach" resembles the structure or main ideas of phased implementation of EMSs, and these could be inspired by the British Standards Institution's standard that promotes this EMS implementation strategy (see BSI, 2003). This approach has been evaluated for some British and Irish companies and reports positive experiences (Dalhammar, 2001). In the British and Irish cases, accredited auditors have audited every step and verified the organisations efforts, and this was experienced as a measure and guarantee for the implementation and use of high quality EMSs. Common experiences from this approach is that the motivation for and management of the EMSs were facilitated with the phased EMS implementation and that this approach is connected to lower costs compared to implementing an EMS in the more traditional way.

Despite the lack of a nationally agreed general EMS standard for local authorities in Sweden; there are specific EMS standards for school departments (Green Flag (Keep Sweden Tidy, 2005) and the Green School Award (Swedish National Agency for School Improvement, 2005)). Both Green Flag and Eco-School awards are frequently used in the Swedish schools and kindergartens (Paper I). These can be classified as simplified standards and are inspired by both ISO 14001/EMAS and LA 21. These standards mainly focus on participation and involvement of the children and staff within the schools and on "greening" the education activities.

There is another approach to EMSs called Eco-budgeting. This has a slightly different perspective compared to the phased implementation of EMSs and to other simplifications of ISO 14001 and EMAS since it is designed for politically controlled organisations such as local authorities (Andersson and von Malmberg, 2003). It has a LA 21 approach and addresses the internal administrative organisation as well as the political, territorial, and societal perspectives of environmental management in local authorities. However, the use of this kind of EMSs is so far limited in Swedish local authorities.

One problem that has been experienced with the simplified EMS standards is that there are so many of them and they are slightly different in terms of levels of commitments and ambitions, which could make it difficult, for example, for purchasers to know what these systems actually stand for and promise (Strömberg et al., 2004). Therefore, Strömberg et al. (2004) suggest that there should be some kind of coordination of the different simplified standards in order to increase the legitimacy and accountability of such systems. This can be compared to the generally adapted or coordinated approach to local authority-adapted EMS standards in England (LA-EMAS), Queensland, Australia, and the preparations for an EU-standard for local authorities (Riglar, 1997; Swift and Broady, 1998; LIFE98, 2001 respectively). It is not only Strömberg et al. (2004) that discuss a coordinated approach when it comes to simplified EMS standards; some years ago there have also been discussions in Sweden regarding the idea of having a local authority-adapted EMS standard (SALA, 1998). However, this idea has not been realised. Norén and von Malmberg (2004) also discuss whether it could be wise to design a local authority-adapted standard in order to enhance for EMS implementation in local authorities. This would include support for issues that local authorities find difficult (such as how to deal with indirect environmental impact).

In Sweden, local authorities generally seem to use EMSs in a rather reflective way and choose the parts in the official standards that suit them, so a general local authority standard might be unnecessary (Paper III). On the other hand, it could be argued that a general local authority-adapted standard could give more legitimacy for the EMS work, and it could be easier to compare different local authorities' EMS work if they used the same standard. However, since they use ISO 14001 and/or EMAS as inspiration, in a way they already use the same standard. When launching a simplified standard, there is a risk that this is also, like ISO 14001 and EMAS, used as a source of inspiration, allowing local authorities further simplify the simplified version. This means that there is a danger that the EMSs become rather watered down and have little substantial content. Hence the important environmental improvements might be difficult to achieve. Furthermore, the way the local authorities choose to approach EMSs is very individual and launching a local authority-adapted standard might decrease their creativity and limit their EMS efforts (at least in local authorities where the work is much decentralised).

Even though using simplified EMS standards is found very useful by the local authorities, this approach to design EMSs with departure from the local conditions could be connected to complications since EMS implementation implies that the organisation needs to change in order to achieve environmental improvements. On the one hand, changes are often connected to resistance. Using existing and well-known structures could lead to that this resistance is

less accentuated (Senge, 2001). On the other hand, there is a risk in designing the EMSs according to already existing structures that should not be neglected. It could be more difficult to achieve organisational changes if there is no feeling that there is an urge for change and the employees in the organisation are satisfied with the existing situation (Kotter, 1996). This means that EMS implementation only leads to minor adjustments in the organisation's behaviour.

Paper IV analyses the nature of the ISO 14001 standard and how it is used from a new institutional perspective. This analysis indicates that the way the standards are formulated and structured have a rather regulative approach (despite their being standards, since when striving for a certificate, all requirements in the standards have to be fulfilled). Furthermore, since the standards are formulated in very general terms, they give rise to several interpretations, which result in many different approaches to and applications of the tool. Therefore, the important and most interesting issue is to study how the standards actually are used in the organisations and what the EMS efforts results in rather than how the standards are formulated and structured (Paper III, IV).

### ***Structure in the EMS work***

The EMS structure is described and discussed with departure from the parameters resources and coordination, focus of EMSs, and follow-up of EMS efforts.

### **Resources and coordination**

Implementing EMSs in a local authority could be seen as a way of coordinating the environmental efforts in a local authority (Papers I, II, IV, and VI). It is important that there is a coordinating function for the EMS work within the local authority, which guides and encourages the departments in their EMS efforts (Paper III). In this context, EMS coordination is seen as a function, which pushes and supports the departments with ideas, inspiration, and help in their efforts to implement and use EMSs. As discussed in the paragraph on goals with the EMS work, the EMS approach could help LA 21 co-ordinators to put the environmental issues on the management's agenda and increase the legitimacy for their LA 21 efforts. However, it appears like the environmental coordinators and the LA21 coordinators in many local authorities might be disappointed at the managers making the decision of EMS implementation. By launching the EMS work as projects, the managers did not seem to understand that the EMS process is continual and therefore needs support and resources for a long period (Paper II). This indicates that despite the intention to implement a voluntary commitment such as EMSs, this issue is little prioritised and thus has

low legitimacy. As a consequence, local authorities find it difficult to maintain continuity in their EMS efforts (Paper III).

The EMS coordination situation differs greatly among Swedish local authorities. However, extra resources are generally seldom set aside for the EMS work, which means that the EMS efforts are supposed to fit into existing budgets and activities (Paper II, III, and IV). However, at least in the initial phase, resources need to be designated, both in terms of personnel and in terms of funding, in order to introduce and start this process. In 2000, more than half of the EMS implementing local authorities did not set any extra resources aside for coordinating or running the EMSs (Paper II). In about one-third of these, it was the responsibility of each department to arrange and coordinate their own EMS work; there was no central coordination function. Only one-third of the local authorities in the postal survey stated that there was a centrally (in terms of the local authority organisation) positioned EMS coordinating function. The EMS work is often closely related (both in terms of content and in terms of organisational location) to the LA 21 work (Papers I, II, V). Sometimes the EMS work has become an integral part of the work tasks of the LA 21 coordinator.

In local authorities where EMS coordinating functions has never existed or where the coordinating function has been withdrawn, there is a risk that progress in EMS implementation is slower compared to if there is some kind of EMS coordination (Paper III). If there is no supporting and coordinating function for the EMS work, the departments could take this as a signal that the EMS work is not important or worthwhile spending time and effort on. When striving towards organisational change, it is very important that there is some kind of coordinating or guiding function within the organisation (Kotter, 1996). Kotter (1996) stresses the importance of such a function and that this function has credibility within the organisation. For example, the coordination or guiding function has to position power and acceptance in order to make people engaged and interested in making changes. This means that this function has to include important key players (at different levels within the organisation) and it has to possess a broad expertise (such as diversity of different competencies and experiences within the organisation). Of course, leadership is another important ingredient in the coordinating function.

Turning back to the situation in the local authorities studied in this thesis, even though there seems to be some kind of coordinating function (even if there are no extra resources set aside for this function) in most of them (Papers II, III and IV), it is in some cases questionable whether these functions have sufficient power and support. Hence if this function is not sufficiently influential or if there are not enough resources (in terms of funding, personnel, and expertise)

set aside for this function, then it could be difficult to achieve the desired changes and effects and to make the EMSs fully accepted within the organisation. As discussed in Paper III, one explanation and contributing factor to the lengthy EMS implementation processes in local authorities could be due to weaknesses or lack of support for the coordinating function.

In one-fourth of the EMS implementing local authorities that answered the postal survey, the coordination of the EMS work was the responsibility of temporary employees or consultants (Paper II). This is quite remarkable since it indicates that the EMS work is seen as a project rather than a continual process (Paper II). There could be a danger in regarding the EMS work as projects. First, this contradicts the intended approach of ISO 14001, which is to integrate the EMSs into the organisation and daily activities (see ISO, 1996). Regarding the EMS work as a project implies that there is a distinct start and end, an approach that contributes to the problem with maintaining continuity in the EMS efforts. When the temporary employments for EMS implementation come to an end, there might be problems in maintaining and developing the work carried out unless there has been a thorough anchoring process in the organisation.

Bergström and Dobers (2000) discuss problems when running environmental management efforts as projects. They believe it is difficult to integrate efforts and to encourage a long-term impact on the organisation unless the efforts are integrated in the organisation's daily activities. Furthermore, launching projects could sometimes be seen as a way of making efforts that the organisation does not understand how to fit into the organisation. On the other hand, at the time of the postal survey, most of the local authorities were in an initial phase of the EMS process (Paper I), and the way the environmental coordinators responded to the question on coordination might have reflected the situation at that specific time and not how the EMS coordination was thought to be in the long run. In the EMS introducing phase, there might have been a need for external competence, if the EMS idea and experiences had not yet settled in the organisation. This could be one explanation for using consultants and temporary employees rather than in house resources for coordinating the EMS efforts.

## Focus of EMSs

The local authorities' EMSs often focus mainly on the direct environmental impact connected to the organisations' energy and materials flows such as transports, resource use, and heating (Paper V). These issues are experienced as fairly comprehensive to measure and manage. The indirect environmental impact caused by the local authorities' exercise of authority is seldom included since this is experienced as too complex. Consequently, the environmental impact from many of their core activities are often excluded (Paper V). Nevertheless, the environmental coordinators in the interview study for Paper V stated that indirect environmental impact is very important for the local authorities, and it is perhaps even more significant compared to the direct environmental impact caused by the local authority organisation. However, it is generally experienced as abstract and difficult to manage. Few local authorities have generally accepted and disseminated definitions for indirect environmental impact (Paper V).

The difficulty in managing indirect environmental impact is not a unique problem or concern for local authorities in Sweden. Swedish state agencies experience the same problem (Swedish EPA, 2004). Furthermore, reports from EMS implementation projects in local authorities in other countries mainly focus on the local authorities' direct environmental impact (McCallum and Bekkering, 1999; Darnall et al., 2000; LIFE98, 2001; GETF, 2002; Ito 2003a and b). Hence these projects provide little information or inspiration for managing indirect environmental impact.

When dealing with indirect environmental impact, the local authorities mainly refer to issues that are related to awareness and behaviour (Paper V). This is often closely related to the local authorities' LA 21 activities, which is not surprising since the EMSs often are seen as a LA 21 initiative or development of the LA 21 (Paper II). Launching information and education campaigns and inviting the public to see their efforts are a few examples. Another important issue is the contact with the local media when they have made progress with their environmental efforts to make their environmental efforts known to the public (Paper V). So far, I only know of one local authority that explicitly includes environmental procedures for the exercise of authority in the EMSs<sup>4</sup>. Some local authorities stated that they use checklists for ensuring that the indirect environmental impact is dealt with (Paper V). Other local authorities believe that presenting good examples would enhance their handling of the indirect environmental impact. It is interesting to note that no examples of

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<sup>4</sup> As a consequence of distributing a draft report with preliminary results for consideration among local authorities (Emilsson and Hjelm, 2004b), I developed a contact with the local authority of Lund who had a fairly sophisticated approach to managing indirect environmental impact, which could be interesting to study in future research projects.

methods for quantifying the indirect environmental impact have been identified during the research for this thesis.

Two main strategies for managing indirect environmental impacts have been discovered (Paper V). The first, and most common, is to exclude this environmental impact from the EMSs, at least until the EMS idea has settled within the organisation. Because the direct environmental impact is easier to explain and understand, it is the focus when introducing the new ways of thinking and working that the EMSs bring about. This, however, does not automatically mean that indirect environmental impact is excluded from the EMSs for all times.

The second strategy for managing indirect environmental impact is to include it in the EMSs but to avoid mentioning the actual concept due to its complexity (Paper V). Having this strategy, the barrier with the concept of indirect environmental impact could be overcome since all aspects within the process are identified and managed regardless of type and origin. This means that the organisations have a more process-oriented approach to their environmental impact that addresses the total environmental impact from their activities. Furthermore, the local authorities with this strategy often design EMSs that depart from the individual departments' organisational conditions, needs, and ambitions, which is thought to increase the commitment and enthusiasm for the EMSs since there will be less uncertainty for the employees. As argued in *Use of standards* they are very familiar with their work place and adding a new tool that is adapted to the already known structure would then cause less resistance.

To conclude the discussions regarding local authorities' EMS focus, managing indirect environmental impact is seen as a matter of maturity of the EMSs and environmental awareness (Paper V). Once the employees are familiar with the concepts and thinking connected to EMSs, then their experience make it easier to introduce the more complex and difficult matter of indirect environmental impact. The environmental coordinators in the interview groups discussed barriers to managing indirect environmental impact and these were related to the lack of environmental competence among civil servants and politicians, weak communication, and lack of continuity and priority of the EMS work. Learning, organisational development, and communication could thus be seen as key issues for managing indirect environmental impact. Furthermore, it is interesting to reflect upon whether the concept of indirect environmental impact really is necessary and how it contributes to the EMSs. As discussed in Paper V, there is a chance that the barriers with terminology and conceptual difficulties are overcome if the process that focuses on the environmental impact in general is emphasised if neither direct nor indirect environmental impact are mentioned

per se. At the same time, there is a risk that the issues connected to indirect environmental impact are neglected if the term is eliminated.

### **Follow-up of EMS efforts**

One Achilles' heel in the use of EMSs in local authorities is following up on the results from the EMSs (Paper V). One reason for this could be that few local authorities aim at certification of their EMSs and that engaging external auditors for verifying their EMSs is rare. One drawback with the approach to use simplified EMSs that do not aim at certification is that the follow-up phase runs the risk of being neglected. The audit or follow up of the EMSs, however, has been recognised to be significant for the EMS work (Ammenberg, 2003). In the audit or follow-up, the organisation can see whether it is working in the directions of the environmental objectives and targets and where the weaknesses and strengths with their EMS efforts are. Hence it could be seen as an important opportunity for reflection on their efforts and help them find measures to improve the EMSs. Having this understanding and the pressure to achieve improvement, the follow-up moment in the EMS process could help overcome the barrier of lack of continuity. Furthermore, the follow-up could speed up the maturity process in the organisation.

Another reason to the barrier with follow up of EMSs could be that the EMS implementation process often takes a very long time in the local authorities and that many of them simply have not designed or thought of the follow-up phase yet. It is difficult to differentiate the efforts from EMS implementation from other environmental efforts, which in turn makes the follow-up process even more complicated. Following up the indirect environmental impact is often experienced as especially complex and complicated (Paper V). For example, increased environmental commitment among employees is a common result of EMS implementation. How is this factor measured and incorporated in the local authorities' total environmental account of their environmental performance?

Some Swedish local authorities have evaluated their EMS pilot projects in order to enhance for the EMS implementation in other departments. This has for example been done in the local authorities of Härryda (Holmberg, 2004) and Mark (Johansson, 2004). However, these mainly follow-up how the EMS tool is perceived and accepted within the organisations. Hence they do not include quantified measurements of the environmental effects from the EMS implementation. From these follow-ups, success factors and barriers have been identified. For example, the local authority of Härryda (Holmberg, 2004) stresses the importance of finding relevant methods for EMS work that suit the different departments and activities within the local authority. In Mark, it is the enthusiasm and engagement from the management and employees that is

pointed out as the most important factor for creating acceptance for and being successful with the EMS implementation (Johansson, 2004).

If there are no audit procedures, there is a risk that there is little pressure on the organisation to struggle towards improved environmental performance. It is perhaps not necessary to use an accredited auditor, but engaging someone external to the local authority that has a more objective view on the organisation could be fruitful (e.g., using a peer review approach). There are a few EU projects that have adapted peer review systems for enhancing the follow-up process (e.g., LIFE98, 2001; PreSud, 2005). The main principle in these systems is that the local authorities audit other authorities' EMSs in order to bring new ideas and a more objective view on the environmental management efforts. This idea has also been discussed in an inter-local authority EMS network (Paper V). Peer reviewing could be a possible and useful way of conducting a constructive semi-formal audit.

### *Administrative systems*

Although this thesis focuses on the use of EMSs, it is important to remember that EMSs are implemented into a wider context where the EMSs are only one perspective or part of the environmental management in the local authorities. It is then interesting to reflect upon how the EMS work is affected by or affects other (environmental) efforts. Hence adopting a “systems thinking approach” (as defined and discussed by Senge, 2001) could improve environmental management. One theoretical attempt to widen the scope of EMSs has been made in the ideas of a Sustainability and Audit Scheme, SMAS (Levett, 1996). In this standard, the content of the traditional standards has extended to include a social perspective, which means that the EMS would address the sustainability concept to a higher degree. In fact, when studying the second version of EMAS (EC, 2001), one step (even if it is small) towards the SMAS idea has been taken. The social perspective is elucidated to some extent since the “new” EMAS includes more formal requirements on involvement of the public in the EMS work.

Environmental efforts often seem to be viewed as separate phenomenon (Paper VI). However, there is an identified need for a more integrated approach when it comes to environmental management (Eccleston and Smythe, 2002; Cherp, 2004). Using several environmental management tools in an integrated approach could result in synergetic positive effects since double work might be avoided (English et al., 1999). As discussed in Paper VI, the problem does not seem to be the access to different tools; the problem is how to make the most of the tools and achieve synergetic and coordinating effects, which would make the environmental management more efficient. As indicated earlier, implementing EMSs in local authorities could be seen as a way of gaining

legitimacy for the LA 21 activities. There is a risk that the LA 21 activities become neglected when this new approach is introduced. It is important to remember that LA 21 and EMS to a certain degree have different scope and purpose. There is thus a risk that the discussion concerning sustainability only refers to the environmental perspective if the LA 21 activities are converted into an EMS. Therefore, it is important to instead of abandoning old approaches identify where integration can be made in order to get a more holistic environmental management approach.

Local authorities use a number of different environmental management tools and approaches. In Paper VI, the EMS tool is set in a broader context, giving an understanding of its (possible) role in the more general environmental management in local authorities. If the possibilities and knowledge/competency for using different tools and approaches in combination are analysed within the local authorities, a more holistic environmental management approach is possible (Paper VI). It is thus important to look for potential benefits of combining the approaches in order to identify where these can complete each other and in order to avoid double work in some areas. Paper VI exemplifies how local authorities could identify strengths, weaknesses, and needs in their environmental efforts in order to develop a comprehensive environmental management. It could also be seen as a way of positioning EMS in a broader environmental management and local authority context. In Paper VI, EMSs, Strategic Environmental Assessment (SEA), and Substance Flow Analysis (SFA) are chosen as examples to describe how they could complement one another. What is interesting with this choice of tools or approaches is that they “operate” on different organisational levels within the local authority. SEA represents the political environmental management perspective, SFA represents the territorial perspective, and EMS represents the administrative environmental management perspective.

The analytical approach in Paper VI could also be used as a theoretical framework for identifying and analysing the environmental management needs for local authorities. First, it is important to identify what the local authority considers important issues for a comprehensive and relevant environmental management. This, for example, could be a proactive approach to meet new challenges and requirements, ensuring continuity and political support and providing a structure for environmental management efforts (Paper VI). The tools and approaches used within the local authorities can be related to whether/how they contribute to the identified components of a comprehensive environmental management. This reveals if or how the used tools meet the local authority’s desired features of comprehensive environmental management. It also illustrates, to a certain degree, what efforts or tools are relevant to use and apply in what kind of situations. For example, Paper VI suggests that EMS can

be identified as the engine ensuring the continuity of the use of these other tools. This engine needs to be fuelled with other environmental efforts to make sense of its potential and to be able to run. Furthermore, we identified that SEA and SFA were the important contributors or bases for environmental decision-making. It was also revealed that the SEA approach (at least to a certain degree) could facilitate for dealing with indirect environmental impact in the local authorities' EMSs, so using these tools in combination could be a good idea. The benefits of using SEA and EMS in an integrated approach have also been discussed by other authors (Eccleston and Smythe, 2002; Cherp, 2004;).

### ***Ownership***

Paper V stresses the importance of who owns and feels responsible for the EMS within the organisation. This is thought to depend on the chances to become successful in integrating the EMSs into the daily activities. Environmental coordinators sometimes feel they are imposed with too much responsibility in terms of developing and running the EMSs in the departments (Paper V). While their task is to support and coordinate the EMS efforts, the departments are supposed to do the operational work. They often feel that the organisation relies on them since they have the environmental expertise. This might result in departments and units within the local authorities taking less responsibility for the EMS work and the EMSs being a construction by and for the corporate environmental coordinators. This approach would make it very difficult to integrate the EMSs. Furthermore, as indicated earlier, the local authorities experience that it is important that the departments and units are engaged in the design of the EMSs since they are the experts on their particular processes and activities (Paper V). In addition, if the departments and units have been active and involved in the process of building the system, then the chances for their commitment ought to be higher. The departments would then feel like they own their EMSs, and that they have the power to influence the EMSs' content and scope. If management feels that they have an active role and that they have responsibility for the EMSs, this could ensure their commitment and support for the EMS efforts. Thus in order to make the EMS work functional, it is important that they also feel like they own the systems being implemented. The role of the management will be discussed in the paragraph on *Management Style*.

## *Culture*

The organisational culture is a very important issue for the understanding of the behaviour, identity, and values of organisations (Jacobsen and Thorsvik, 2002). There are different definitions of organisational culture; however, Schein's (1985) definition is useful:

*[organisational culture] is a pattern of basic assumptions – invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration – that has worked well enough to be considered as valid and, therefore to be taught to new members as the correct way to perceive, think and feel in relation to those problems.*

The organisational culture has not been studied per se in this thesis. However, the organisational culture is important for the understanding how the EMS tool is perceived, understood, and accepted in the organisations. The organisational culture could also be important in setting the organisational attitudes and values. For example, in an organisation where there is a tradition of being concerned with environmental issues, then the step to introduce the EMS tool might be fairly easy when it comes gaining acceptance and commitment among the employees.

It is interesting to reflect upon what makes these kinds of organisations use EMSs from organisational cultural perspective. As discussed in Paper IV, this could be due to that the EMS tool has been or is in the process of being institutionalised. By this I mean that the use of the tool is more or less taken for granted. If relating this to Scott's (2001) ideas of the three pillars of an institution, it can be said that the general application of the EMS tool is moving towards the cognitive pillar, which implies that its use is more or less taken for granted.

The studies for this thesis show that commitment for the EMS work plays an important role for the development of the EMS efforts (Papers II, III, IV, and V). This does not only refer to the commitment of the management but also to the commitment and engagement within the organisation. Hence, this commitment would have an impact on the organisational culture (and vice versa). It is sometimes experienced as if there is insufficient commitment for the EMS work (Paper II). One of the reasons for the lack of commitment for the EMS work in local authorities could be that they have not yet found an approach that suits their local conditions (the EMS idea has not settled in the organisation); they focus on issues that are not close enough to their core activities. Therefore, it is difficult for the employees to see the relevance of the EMS work in relation to their work situation. It is therefore important that the

organisational culture and attitudes within the organisation support the EMS work in order to encourage the commitment and engagement for environmental management issues. If EMS progresses are paid attention to (as discussed in *Focus of EMSs*) it would further encourage the departments to carry on with this work and perhaps inspire them to discover new environmental solutions or innovations. It could also lead to the employees and the management become more proud of their work place, an attitude that could lead to a positive and open-minded atmosphere within the organisation.

Environmental coordinators are important from an organisational culture point of view since they inspire EMS work and that they push (carefully and methodologically) the departments' to make EMS progress (Paper V). These are issues explicitly stressed by the studied local authorities as contributing to a broader commitment throughout the organisation. This would, in turn, enhance the EMS development and use. Of course, there could be other factors as well. One way of engaging not only the employees but also the citizens and the local companies in the EMS work was tried in Cheshire (Pearson and Barnes, 1999). In Cheshire, interested citizens were provided with training to audit both local authority departments' and local companies' EMSs. Such an approach would open up the local authority organisation and bring more transparency to its activities simultaneously providing a higher degree of commitment. This approach could be one way of overcoming the critiques of EMS standards being rather opaque or not encouraging public participation (Paper VI). Hence involving the stakeholders such as other local authorities (in a peer review system) and the citizens could be one way of making the local authorities' environmental management more efficient and accepted, and perhaps making their activities in general more transparent and open to the public.

### ***Management style***

EMSs are often seen as having a fairly strong top-down approach (Moxen and Strachan, 2000). The ISO 14001 standard has been criticised for supporting a traditional management style (for example, hierarchical and formal organisational structures). This encourages a role culture within the organisation, which encourages a hierarchical organisation where the organisational traditions are preserved and formal rules are important. Hence a role culture can inhibit organisational change. In order to make the EMS implementation lead to changes related to behaviour and other cognitive processes a reality, new ways of management might be needed (Moxen and Strachan, 2000). For example, one way of overcoming the risk of EMSs to become too bureaucratic is to focus on the tasks rather than on the roles. A task culture empowers the employees to a higher extent compared to a role culture and makes the organisation more flexible. This approach would also encourage the employees to think in new innovative ways and enhance organisational

learning. Hence, it is very important that the management is aware of how it affects and wants to affect the organisational culture, by its values, ambitions and strategies when wanting to achieve change.

When it comes to the management style, this is (as is the conditions for commitment and other issues related to the social factors) very independent from local authority to local authority. For example, in Newcastle City Council there is a fairly formal management style; management has decided on EMS structures and how to implement EMSs. There are also templates to use for the EMS work (Paper IV). By contrast, Gothenburg's management allows each department (or district committee) to implement this decision. This is made in very different manners and in different pace.

What is common among the local authorities that have been studied for this thesis when it comes to management is that the management's commitment and support is considered crucial for the EMS work (Papers I-V). This means that the management has to take responsibility for the EMSs and for ensuring its progress. Issues such as the management's knowledge and will are stressed as especially important (Paper V). In the end, the EMS is a management tool, and EMS implementation is impossible without management's support. At the same time, some local authorities stress that if the EMS work is too centralised, then it is difficult to make the departments engaged and committed. Hence there is a need for commitment from a both top-down and bottom-up perspective (Paper V). It is therefore important that there is balance and good communication and cooperation between the different levels within the local authorities to make the EMS efforts successful. This would also create or improve the internal legitimacy for the EMS efforts. In order to make changes in an organisation (in this case towards a more environmentally sustainable organisation), it is important that the management sets aside adequate resources (Wolman, 1981). Moreover, the management needs to create a desire for change, communicate the ideas for change (visions and strategies) and it has to ensure and encourage the generation of short term wins (in order to keep up the commitment within the organisation) (Kotter, 1996). It also has to communicate progresses, and make sure that the new ideas are settled and maintained within the organisation (Kotter, 1996). In the case of the local authorities, the support from the management seems to vary greatly (Papers I-V); however, in many cases, the environmental coordinators feel that they do not get enough support from the management (Paper V). It is perhaps easier to mobilise commitment and set aside resources for the EMS efforts in the beginning when the EMS idea is experienced as something new and exciting. However, after some years when the charm and novelty of the EMS idea has disappeared, it is more difficult to mobilise commitment and engagement.

## *Interaction processes*

As might have been understood from the discussions above, communication and interaction is crucial in the local authorities' EMS efforts (Papers IV and V). It is not only important for conveying the ambitions and intentions with the EMS work, it is also important to inspire the process and learning within the organisation. EMS implementation improves the communication between different departments within local authorities (Burström, 2000a; von Malmborg, 2002). Improved communications with the local companies was one of the main drivers for EMS implementation in one of the local authorities (Paper IV). If the organisation is open to interactions and to learning from other experiences, this could also be beneficial for the coordination and development of the EMS work within a local authority.

There are many different ways to interact. Networking is one way of interaction that the local authorities experience as very fruitful (Paper V). In some local authorities, EMS networks between the departments and units meet on regular basis in order to exchange experiences and information (Papers IV and V). It is also quite common with inter-local authority EMS networks where the environmental coordinators meet and discuss their EMS experiences (Paper V). There are at least seven inter-local authority EMS networks in Sweden. The EMS networks often consist of local authorities that are geographically close. These networks are very valuable since the environmental coordinators can exchange ideas and discuss problems and solutions, which in turn inspire them to carry on the work in their respective local authorities. Several projects launched to promote local authorities' EMS implementation build on networking between different local authorities (LIFE98, 2001; GETF, 2002; PreSud, 2005). Such networks could bring yet another perspective on the local authorities' EMS efforts since they interact with local authorities in different countries.

Interaction between local authorities has been pointed out as important from a learning point of view (Papers IV and V); however, it is also important to interact with stakeholders to uncover new perspectives on the EMS work and share their own EMS experiences with other actors in society. Local authorities can act as important "knowledge brokers" when it comes to environmental management (von Malmborg, 2004). This means that they are important sources of knowledge that could provide the local companies with information and knowledge. Local authorities could thus work as important platforms or meeting places for different actors in society for environmental management development and discussions (Burström and Korhonen, 2001). This should be seen as a mutual relationship and is interesting to reflect upon what the local authorities and companies can learn from each other.



## Conclusions

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*This chapter concludes the results from the research carried out for this thesis.*

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It can be concluded that in general, the EMS tool is used in a reflective way in local authorities and that it is a tool that is useful in this type of organisation. However, the research has also identified some barriers and difficulties in the local authorities' use of the tool. With the papers and the compiling analysis in the results chapter of the cover essay as a basis, I have identified several key issues that generally describe the local authorities' approaches to EMSs or are important for the development of their EMS efforts:

- The use of EMSs is widespread among local authorities in many countries. In Sweden, EMSs are more commonly used among larger local authorities compared to smaller ones.
- The main reason for using EMSs in Swedish local authorities is to improve the structure in the local authorities' environmental management efforts. Another important driver for using EMSs is to improve their legitimacy, both internally and externally.
- ISO 14001 and EMAS are often used only as inspiration when designing EMSs in local authorities. Today it is common that local authorities design their own simplified standards to be used in their departments. The importance of designing EMSs that depart from the local authorities and their departments' conditions and structures have been stressed throughout the research process. Certification of the EMSs in the local authorities is thus rare.
- In Sweden, the EMS implementation process in local authorities has proven fairly time consuming, perhaps due to the complexity of the organisations.
- There is often a problem with maintaining continuity in the local authorities EMS efforts. This could be due to reprioritisations. The problems with continuity are often connected to the lack or realignment of resources (in terms of finances or EMS coordinators), leading to different structures in the local authority and that, resulting in re-starting the work has to start all over again.

- Follow-up of the EMS efforts is often considered difficult; however, this is crucial for the development and usefulness of the EMSs in the local authorities. The follow-up is important since it gives the organisation an evaluation of their efforts made so far and an idea of what could be done in order to improve the environmental performance. It also ensures that the organisation has something to strive for.
- Indirect environmental impact is generally perceived of as difficult to manage, and is therefore often excluded from the EMSs, at least when initiating the EMS process. By making this limitation, the local authorities do not embrace the environmental impact related to many of their core activities such as exercise of authority. Including indirect environmental impact within the scope of the EMSs is often seen as a matter of maturity. Once the EMS idea has settled and when there is more knowledge of and experience from using the tool, then it is easier for local authorities to take indirect environmental impact into account in the EMSs.
- If the responsibility for the EMSs lay mainly on the EMS coordinators, then there is a risk that the EMSs are the construction and concern only of the environmental coordinators. By investing the departments as stakeholders in the EMS development (with regards to their knowing their activities and processes), local authorities improve their chances for a broad based commitment within the organisation for their EMS efforts. However, EMSs is a management tool, which means that it is also important that the managers feel responsible for the EMSs and that they ensure and support the EMS continuity and development.
- Communication and interaction is stressed as important for developing the EMS work in the local authority. Effective communication within the local authority could highlight good practice when it comes to EMS approaches, which in turn could inspire the rest of the organisation and promote further development and maturing of the EMSs. Interaction between the departments within local authorities and interaction between local authorities is important for motivating development of the EMS work.
- Seen in a broader context, EMSs can be seen as a motor for environmental management in general. It provides the organisation with a way to ensure continuity, structure, and procedures. It can be fuelled with other environmental efforts in order to emphasise and facilitate environmental management on other organisational levels and perspectives.

## Acknowledgements

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Challenges are important in my life. I like testing my limits to see what I can achieve and do. Being a Ph.D. student has been one of the toughest and most revolutionary challenges that I have faced so far. It has had a great influence on my personal and professional development and I have had a lot of fun along the way. However, I could never have managed this challenge without support from people around me. First, I am very grateful to my supervisor Dr. Olof Hjelm, who, with his extensive knowledge and patience has supported, inspired and motivated me during my time as a Ph.D. student. Olof- your advice and encouragement are invaluable. I also owe many thanks to all my colleagues at Environmental Technology and Management at Linköpings universitet for interesting discussions (of both serious and less serious nature) and for many enjoyable coffee breaks. I would especially like to thank my office mate Sara Tyskeng for many fruitful discussions and for her friendship. I like being “on the run” with you! Jenny thanks for being a great friend and for introducing me to the wonders of Norrland (especially the “birch hanging”). I would also like to thank two former colleagues, Dr. Jonas Ammenberg and Dr. Fredrik von Malmborg. Jonas, thanks for sharing your great knowledge and sense of humour (especially your practical jokes). Fredrik, thanks for providing me with valuable comments on a draft of the cover essay.

During the research I have been in contact with many local authorities. Thank you all for contributing to this thesis with interesting discussions and for sharing your experiences. Financial support for this thesis has also been provided to me by East Sweden Municipality Research Centre (CKS). For your support, I am very grateful. The Swedish Foundation for International Cooperation in Research and Higher Education (STINT) made it possible for me to do research in Newcastle. For this support, I am also grateful.

Although the challenge of being a Ph.D. student is very interesting and exciting, there is a life outside the university and I couldn't have realised this thesis without support from my friends and my family. Thank you for your never-ending encouragement and concern. I would especially like to express my gratitude to Malin for being the greatest friend and for always have being there for me during the last 24 years. I would most certainly not have become a Ph.D. student without your interference. Mamma and pappa, thanks for your endless love, support and for your curiosity in what I do (especially mamma when it comes to the latter). Johan, thanks for being the best of brothers. Mormor and morfar, you are important parts of my life, thank you for always being there with your encouragement, interest, and care. Finally, I am very grateful to Richard for being my support and cheering me up at all times, for sharing my life and filling it with love and joy.

Sara Emilsson, Linköping, April 2005



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