

FROM TOOL TECHNIQUE TO TOOL PRACTICE
EXPERIENCES FROM THE PROJECT SEAMLESS: STRATEGIC ENVIRON-
MENTAL ASSESSMENT AND MANAGEMENT IN LOCAL AUTHORITIES
IN SWEDEN

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Programme director's foreword

This is the final report from the project SEAMLESS, Strategic Environmental Assessment and Management in Local authorities in Sweden, a project within the research programme "Tools for environmental assessment in strategic decision making, MiSt". It was a joint project between Environmental Technology and Management, Department of Management and Engineering, Linköping University and the International Institute of Industrial Environmental Economics at Lund University.

MiSt is an interdisciplinary research programme on tools for environmental assessment in strategic decision making funded by the Swedish Environmental Protection Agency. The programme is co-ordinated from the Spatial Planning Programme of Blekinge Institute of Technology. The focus of the MiSt-programme is the empirical study of effectiveness of tools of environmental assessment as aid to strategic decision making. The object of the research is to study the function of tools that aid in environmental assessment as a key component in strategic decision making.

The present report discusses and develops the need for contextual understanding of tool use. This is a notion that has been central to the entire MiSt programme. The authors contribute to this both conceptually and in their discussion and conclusion concerning "tool practice" and "learning integration".

It has become increasingly clear that the effectiveness of strategic environmental assessment can be considerably enhanced by appropriate follow up. In infrastructure planning a cycle of SEA/EIA followed by integration of the findings in project implementation, especially the specifications in tenders and by the use of environmental management systems for the construction phases, has been shown to be beneficial not only environmentally but also in helping to keep projects on time and thus also in controlling costs. The SEAMLESS project rationale is that integration of SEA and EMS would be beneficial also in the public sector. Within the project the conceptual foundations as well as feasibility of establishing better operational and methodological linkages between tools for strategic environmental planning, assessment and management, especially between SEA and EMS in local authorities have been explored. Studies of planning authorities in a number of municipalities show limited development of SEA and a lack of awareness of the potential for integration of SEA and EMS. The authors conclude that from a *tool technique perspective* there are several possible linkages but note that the context influences the feasibility of tool integration, i.e. a *tool practice perspective* is needed and argue for a perspective of *learning integration*. The lack of experience of SEA and the fact that windows in time probably exist for integration is a further observation that may be added to the discussion.

I would like to thank the authors not only for this report but also for their active participation in the programme activities of MiSt

Karlskrona 2011-02-01

Lars Emmelin
professor of EA
Programme director MiSt

From tool technique to tool practice

Experiences from the project SEAMLESS:
Strategic Environmental Assessment and
Management in Local authorities in Sweden.

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From tool technique to tool practice

Experiences from the project SEAMLESS: Strategic Environmental Assessment and Management in Local authorities in Sweden.

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Summary

This report contains the results from the project SEAMLESS, Strategic Environmental Assessment and Management in Local authorities in Sweden. The aim of SEAMLESS was to explore conceptual foundations as well as feasibility of establishing better operational and methodological linkages between tools for strategic environmental planning, assessment and management, especially between SEA (according to the EG directive 2001/42/EC and EMS based on the main principles of ISO 14001/EMAS) in local authorities. The rationale for the study was that local authorities are important actors on the environmental arena, which make and implement a large number of decisions directly and indirectly affecting the environment. A multitude of different systems and tools have been developed to support environmental management at local authorities and an integrated use of different tools can have various benefits.

The SEAMLESS project has been realized through five main steps. First, a literature review and a survey of international practice were performed. Second, in parallel to the first step, an initial conceptual framework was constructed. The third step in the research process was to carry out case studies in six selected Swedish local authorities in order to get a better understanding of how SEA and EMS are dealt with in practice. In the fourth step, the results from the previous steps in the research process were compiled and analyzed in order to develop and conduct a pilot study. Finally in the fifth step, general recommendations for integrated use of strategic planning, assessment and management tools were formulated.

Theoretically, local sustainable development strategies could benefit from having influence from some of the main approaches and principles in SEA and EMS methodologies. Achieving this in practice, however, is a challenge that requires a wide systems perspective and a certain degree of maturity in the organization. At the time of SEAMLESS an integrated approach of SEA and EMS was not possible nor asked for by the studied local authorities.

The SEAMLESS project's core concepts *tool technique* and *tool practice* were used for explaining and analyzing the preconditions, possibilities and difficulties in integrating SEA and EMS. *Tool technique* addresses the more technical aspects of the tools use and integration, neglecting the context in which it is to be used. Applying a *tool technique perspective* there are several possible linkages between the studied tools that could enhance each tool, e.g. widening the scope of EMS and facilitating follow up of SEA. It is important to understand the context, since it influences the feasibility of tool integration; therefore a *tool practice perspective* is needed.

Furthermore *tool integration* is another important concept in the SEAMLESS project, where three different stages of integration were identified: *formal integration*, *learning integration* and *interactive integration*. A too strong focus on *formal integration* (which is closely connected to *tool technique*) might lead to that potential linkages are not realized. To make such integration possible the focus should be more on *learning integration*. *Interactive integration* is hard to achieve and it can be questioned if it is desired. Too much focus on interactive integration might lead to complex resource demanding tool causing ineffectiveness and tool fatigue.

The SEAMLESS project resulted in a set of recommendations based on that integration should not be seen as a goal in itself; that attempts of tool integration should focus on bridging the different professional cultures; and that a wide systems perspective is needed.

Svensk sammanfattning

Den här rapporten presenterar resultat från forskningsprojektet SEAMLESS, Strategic Assessment and Management in Local authorities in Sweden. Syftet med SEAMLESS var att studera konceptuella och praktiska kopplingar mellan verktyg för strategisk miljöplanering, miljöbedömning och miljöledning, speciellt mellan Miljöbedömning av planer och program (baserat på EG-direktivet 2001/42/EC) samt Miljöledningssystem (som utgår från huvudprinciperna i ISO 14001/EMAS) i kommuner. Utgångspunkten för studien var att kommuner är viktiga aktörer på miljöområdet eftersom de fattar och genomför en stor mängd beslut som direkt eller indirekt har en inverkan på miljön. Ett stort antal olika system och verktyg har utvecklats för att stötta kommunernas miljöarbete. Genom att ha ett integrerat angreppssätt finns det goda möjligheter för ett mer verkningfullt miljöarbete.

SEAMLESS-projektet har genomförts i fem delsteg. Först gjordes en litteraturgenomgång och en undersökning av internationell praxis vad gäller kopplingar mellan miljöbedömningar av planer och program samt miljöledningssystem. I projektets andra steg utformades en konceptuell modell av möjliga kopplingar mellan verktygen. Sedan genomfördes fallstudier i sex svenska kommuner för att få en bättre förståelse för hur verktygen används i praktiken samt vilka kopplingar som finns mellan dem. I projektets fjärde steg analyserades resultaten från de tre första stegen och utifrån detta utvecklades och genomfördes en pilotstudie. I projektets sista steg formulerades generella rekommendationer för ett integrerat angreppssätt för verktyg för strategisk planering, bedömning och management.

Teoretiskt skulle lokala strategier för hållbar utveckling kunna gynnas av influenser från några av huvudprinciperna i miljöledningssystem och miljöbedömning av planer och program. Men att förverkliga detta i praktiken är en utmaning som kräver ett brett systemperspektiv och en viss mognad inom organisationen. När SEAMLESS-projektet genomfördes fanns det varken behov eller möjligheter för denna typ av integration i de kommuner som studerades.

SEAMLESS-projektets huvudkoncept *tool technique* och *tool practice* användes för att förklara och analysera de förutsättningar, möjligheter och svårigheter som ett integrerat angreppssätt för med sig. *Tool technique* fokuserar de tekniska aspekterna av verktygsanvändning och tar inte hänsyn till den verklighet och sammanhang som verktyget ska användas i. För att få ett verktyg att fungera i praktiken krävs denna hänsyn, något som vi i SEAMLESS definierar som *tools practice*.

Verktygsintegration är ett annat viktigt koncept inom SEAMLESS, där tre viktiga stadier av integration identifierats: formell integration, lärande integration och interaktiv integration. Vid ett för stort fokus på formell integration (som är nära kopplat till *tool technique*), riskerar möjliga kopplingar mellan de integrerade verktygen att gå förlorad eftersom liten eller ingen hänsyn tas till sammanhanget där de ska implementeras. För att möjliggöra integration krävs lärande integration. Interaktiv integration är svår att uppnå och det är osäkert om detta stadium är eftersträvärt eftersom det riskerar att bli för komplext och resurskrävande för att vara effektivt.

Baserat på resultat och analys har SEAMLESS-projektet resulterat i en uppsättning rekommendationer. Slutsatserna är att integration inte bör vara ett självändamål; att

verktygsintegrering bör fokusera att minska gapet mellan olika professionella kulturer; samt att ett brett systemperspektiv är nödvändigt.

Foreword

This is the final report from the project SEAMLESS, Strategic Environmental Assessment and Management in Local authorities in Sweden. It was a joint project between Environmental Technology and Management, Department of Management and Engineering, Linköping University and the International Institute of Industrial Environmental Economics at Lund University. SEAMLESS has been a part of the research program MiSt, Tools for environmental assessment in strategic decision making.

The main empirical work was conducted 2006-2008. In this report we describe the approach and the research activities and present our main findings in relation to the overall aim of tool integration. The project also generated knowledge concerning the specific tools standardized Environmental Management Systems (EMS) and Strategic Environmental Assessment (SEA). Those results are only included if relevant for the overall aim of the project. However the list of publications contains publications regarding such issues.

The SEAMLESS research team wants to thank all officers and politicians at Swedish local authorities taking time to answer our questions and participating in workshops. We also thank the peer researchers in the MiSt research programme for fruitful discussions and feedback. Finally we thank the Swedish Environmental Protection Agency for funding.

Linköping 2010-08-28

A handwritten signature in black ink, appearing to read 'Olof Hjelm', written in a cursive style.

Olof Hjelm, Project leader

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Introduction

Points of departure

Local authorities are important environmental actors which make and implement a large number of decisions directly and indirectly affecting the environment. A multitude of different systems and tools have been developed to support environmental management at local authorities (Dale and English, 1999; English, 1999; English and Dale, 1999; Sexton et al., 1999). The proliferation of various environmental assessment and management tools may result in confusion and “tool fatigue”. Analysis of different conceptual, procedural and methodological aspects of tools interaction (Arts, 1998; Cherp et al., 2004; Marshall, 2003) has led to an emerging consensus that various tools should be used in a complementary fashion to ensure the integrity of the environmental planning and management cycle. Therefore integrated use of different tools can have various benefits (Emilsson et al., 2004; Eccleston and Smythe, 2002; Nitz and Brown, 2001). In the SEAMLESS project we have specifically focused on two widely used tools for environmental management at local authorities; Environmental Management Systems (EMS; based on the main principles of ISO 14001) and Environmental Assessment (EA), including EA for plans and programs often referred to as Strategic EA (SEA, according to the EG directive 2001/42/EC). Though it has been suggested that SEA and EMS can interact more effectively (e.g. Emilsson et al., 2004), significant gaps in the current knowledge in this area have been identified (Cherp, 2004a; Emilsson and Hjelm, 2002a; 2002b; 2004). Examples of these gaps are as follows: There is only a limited understanding of the management elements of SEA and SEA follow-up and there is a lack of conceptualization of its possible interaction with EMS. The current research on EMS in public authorities has not answered the questions: What are the effective approaches to increase the strategic use of EMS in public organizations for proactive environmental management integrated into their core activities?

Aim of study

Given the background above, the primary purpose of SEAMLESS was to explore conceptual foundations as well as feasibility of establishing better operational and methodological linkages between tools for strategic environmental planning, assessment and management, especially between SEA and EMS in local authorities.

Three research questions have been asked in the project.

1. Can the effectiveness of EMSs in public authorities be enhanced through strengthening their linkages with SEA? What are the potential mechanisms of and pre-conditions for such integrated use?
2. Can the effectiveness and relevance of SEAs conducted by local authorities be improved through linking SEA follow-up to EMS in these authorities? What are the potential mechanisms of and pre-conditions for such integrated use?
3. In what way can local sustainable development strategies¹ benefit from more systematic application of environmental assessment and management tools, especially SEA and EMS?

¹ In this report we use the term sustainable development strategies according to the OECD's (2001) definition of an SDS as “a co-ordinated set of participatory and continuously improving processes of analysis, debate, capacity-strengthening, planning and investment, which integrates the economic, social and environmental objectives of society, seeking trade offs

where this is not possible". A wide variety of plans such as regional development strategies, national strategies for sustainable development and local processes such as Agenda 21 broadly fit this definition.

Reflections on SEAMLESS core concepts

SEAMLESS was originally motivated by the goal of integrated use of two environmental management tools: SEA and EMS in local authorities. Thus, the ideas of ‘tool’ and ‘integration’ are central for SEAMLESS and deserve a critical reflection.

From tool technique to tool practice

An environmental management tool is commonly defined as *a standardized approach to addressing environmental issues. We will further refer to this notion as a ‘tool technique’*.

An environmental management (EM) tool is normally developed by distilling and codifying the elements of a successful environmental management approach and presenting it as a model that can be deployed in other contexts. The main advantage of tools is that they enable speedy and efficient transfer of successful EM approaches from one context to another. Provided these contexts are sufficiently similar, tools may be effective in solving environmental problems.

However, dissimilarities in contexts often render standardized tools ineffective (i.e. they cannot solve problems) or irrelevant (they solve *wrong* problems). Sometimes standard tools are adjusted to work in new contexts or address different problems. If these adjustments are sufficiently significant to be considered as new successful approaches, new tools may emerge. Thus, due to a variety of potential contexts, EM tools tend to proliferate and increase in numbers.

A systematic examination of what is “a tool” goes beyond the definition of “tool technique”. At least when applied to well established EM tools such as EIA and EMS, it should include not only the *result* but also the *process* of standardization/codification of successful approaches by various actors: practitioners, academics and regulators. This process is always evolving around the *practice* of tool application and thus leads to a more refined definition:

An environmental management tool is a codified practice of addressing environmental problems based on certain principles, discourses, assumptions and techniques. We will further refer to this notion as a “tool practice”.

Thus the ideas of ‘practice’ (thus, context), ‘discourse’, and ‘evolution’, become just as important as the notion of a technique. As discussed by Emmelin (2006) one can hardly discuss a tool without a reference to its context.

The meaning of tool integration

In SEAMLESS we have chosen to use the term tool integration in the broad sense of deploying several tools in a coordinated fashion to increase effectiveness and avoid duplication of tasks and activities.

Integration takes different forms depending upon the notion of a tool as a “technique” or a “practice”. If a tool is a formal standardized technique then integration takes a form of optimizing two or more analytical models. Elements can be easily merged, split or connected to each other in such formal models, very much like coordinating and combining standard operations on a conveyor belt.

However, such formal integration may encounter significant practical difficulties. Indeed, it is not clear how the problem of the *context of tool application* can be addressed through integration. If two tools do not work *separately* then there is even less chance that they would work *together*. This is because for each individual tool we know that it works at least in *some* contexts (e.g. the one(s) that are the basis for original codification). The same cannot be said about the new ‘integrated’ tool: it has normally *not* proven to work in *any* prior context.

Departing from the notion of a tool as merely a standard technique puts a new meaning into the idea of integration. The ‘integration’ becomes, first of all, a form of *interaction* between tool users. Such interaction may naturally become collaboration or competition. It will likely involve not only discussions of analytical models of how various techniques can be linked to each other but also the struggle of the underlying assumptions, discourses and power relationships. The driving forces of such integration also extend far beyond purely logical arguments of making analytical models more comprehensive or more accurate. They involve the needs and aspirations of the users of each tool to position themselves more advantageously through creating necessary alliances, defying competitors and increasing ‘the effectiveness’ or ‘their’ tools.

In a broader sense tool integration includes the following dimensions:

- **Formal (procedural) integration.** This is largely a formal approach centered on techniques, by which two tools are combined so that ‘outputs’ of one tool become ‘inputs’ of another tool, duplicate activities are avoided, etc.
- **Learning integration.** This is an approach by which users associated with different tools learn from each other (it can be learning on methods and other knowledge).
- **Interactive integration.** This type of integration presumes active interaction of the tool users which involves co-evolution and co-transformation of working procedures.

Methodology

The SEAMLESS project has been realized through five main steps. First, a literature review and a survey of international practice were performed, in order to identify the international 'benchmarks' (best practice) of the EMS and SEA integration as well as SEA and SEA follow up. Second, in parallel to the first step, an initial conceptual framework was constructed. The purpose of this was to map potential spots for integrated use of SEA and EMS. The third step in the research process was to carry out case studies in six selected Swedish local authorities in order to get a better understanding of how SEA and EMS are dealt with in practice. This was accomplished in 2005-2006. In the fourth step, the results from the previous steps in the research process were compiled and analyzed in order to develop and conduct a pilot study, which was performed during 2007 in one local authority. Finally in the fifth step, general recommendations for integrated use of strategic planning, assessment and management tools were formulated.

Along the research process, there have been several occasions where there have been opportunities to present and discuss the progress of the project and its results with peers and practitioners. Preliminary results from the SEAMLESS project have been communicated with peers at several international scientific conferences and also at seminars within the MiSt research programme. In addition to the case studies and the pilot study, important channels for communication with practitioners have been informal meetings and by publishing the research results in reports that were written as feedback to the local authorities that in some way participated in the project. The methodology for SEAMLESS project is presented more in detail below.

Literature review on integrated use

The preparatory research stage included screening for potential cases of and materials on integrated use of SEA and EMS. The principal domains of the data collection were the Internet space and e-databases, searched for different sources of the relevant literature, books, internationally published articles, academic papers, conference proceeding, and work pieces as well as institutional literature such as reports, instructions and guidelines. Each of the domains was explored for various combinations of words important for the research. Relevant words and phrases (e.g. EMS, municipality, Environmental Assessment, ex post SEA, ex post SA, post-decisional SEA, etc.) were searched for. At this stage, a simplified content analysis was applied. Details on literature review are found in Appendix I.

Literature review on SEA and SEA follow up

In order to systematically analyze the available vast body of knowledge on SEA, first a specific design for literature search was proposed. It implied the identification of appropriate materials needed to inform and underpin the study. It then further focused on materials directly related to the research focus in SEAMLESS, i.e. SEA follow up. Thus, the mixture of the following approaches was used:

- A systematic approach in looking at everything relevant to the research in the libraries and in the Internet via searching machines (meta-search and local engines in several languages).
- A retrospective approach when looking at journal articles (from the most recent material backwards) along with using citations, leads, and references from the identified materials to the related subjects since the research is interdisciplinary by its nature.

- Proper targeting of the literature search moving from the broader theoretical framework of the research area, SEA and crossing disciplines, on to a narrower SEA follow up focus in the literature.

Conceptual framework

In parallel to the different literature reviews, the SEAMLESS project involved a brainstorming exercise, identifying potential common elements in SEA and EMS that could be valuable for an integrated use of the tools. This was done by mapping the key elements of SEA and EMS cycles. Similarities and dissimilarities concerning processes, documentation and actors were analyzed and compared in order to formulate an initial conceptual framework which would constitute the point of departure for the empirical data collection for the SEAMLESS project.

Case studies of EMS and SEA implementation in local authorities

Case study methodology (c.f. Yin, 1984) was chosen for mapping local authorities' approaches to integrated use of EMS and SEA. This was considered an appropriate methodology since we wanted to get a deeper knowledge of the local authorities' actual activities and attitudes in this field. Six local authorities were selected for the multiple case study. These local authorities are Botkyrka, Halmstad, Lidköping, Lund, Uddevalla and Växjö. Characteristics of the selected local authorities are presented in Table 2.

The main criteria for selection of cases were that the local authorities had long experience from using EMSs and that the EMSs were active. Based on previous research (Emilsson and Hjelm, 2007) we knew that many of the local authorities that are in the forefront when it comes to EMS also are mature in other areas of environmental assessment and management. Furthermore, we knew that SEA is a novel phenomenon to local authorities in Sweden, and it was considered more likely that local authorities with mature environmental assessment and management had started to establish routines for SEA.

In order to get a broad picture of the EMS work and its relation to SEA a number of interviews with different officials and politicians, were performed in each of the selected local authorities. Some examples of functions that were interviewed in each local authority are EMS co-ordinators, spatial planners (e.g. head of spatial planning office, development managers, and spatial planners responsible for developing comprehensive plans) and politicians responsible for spatial planning and environmental issues in general. For each local authority four to seven interviews were performed; giving a total of 33 interviews. Furthermore, participating observation and documentation studies were important input of empirical evidence for the case studies.

The conceptual framework that was developed in the SEAMLESS project was used as a model when designing the interview templates. The interview questions were formulated with the identified possible connections (processes, documents and actors) as a point of departure. The interview guide was complemented with a matrix where the different connections were plotted and where the interview responses were thought to be inserted. Early in the case studies it became evident that the term SEA was not used in Swedish local authorities, even though environmental assessment of policies and plans were done. To avoid confusion the case studies and the pilot study focused the connection between environmental assessment of spatial planning and EMS. Especially comprehensive planning was studied. This also led to a restructuring of the interview template. For a more detailed description of the methodology used for the case studies and its strengths and weaknesses, see Appendix II.

Pilot study

When the results from the case studies were analyzed, the spatial planning department at the local authority of Lund was selected for a pilot study. Lund was considered interesting since the planning department were in the process of implementing a management system that integrated the EMS with the spatial planning processes. Furthermore, they also had a mature EMS within the local authority as a whole. When the pilot was initiated it came to our knowledge that the integrated management system had collapsed due to its complexity. The planning office was now in the process of designing two separate management systems: one ISO 14001-inspired system including the office activities and one more strategic management system covering the planning activities (mainly based on requirements in the environmental legislation). Nevertheless, Lund was still considered as an interesting pilot, perhaps even more so with this new approach and their experiences from failing in their first attempt to implementing an integrated management system. The pilot consisted of two workshops where the SEAMLESS researchers, planning officers and EMS co-ordinators participated.

The first workshop was a mapping exercise of the planning process with the aim to identify what environmental concerns were taken when and where. Since one of the planners was unable to attend the workshop, an additional interview was held after the workshop. This supplemented the map of the planning process. After analyzing the outcomes from the workshop, a picture of the planning office's EMS work and environmental concerns in planning was presented to the workshop participants (for details see Appendix IV). This was then discussed and verified at the second workshop within the pilot study. At the same workshop planning officers, EMS co-ordinators and the SEAMLESS research team also did an exercise to identify tentative connections. The discussions resulted in a list of different (more or less) concrete ideas of how the planning process and the EMS process could be improved by having a more integrated approach. The results from the two workshops in the pilot study were analyzed and synthesized along with the other results of the SEAMLESS project.

Results

This chapter presents the results from the SEAMLESS project. The chapter focuses on the integrated use of SEA and EMS with point of departure of the conceptual framework and the results from the case studies and the pilot study.

Results of the literature review

The main focus for the literature review was to search for articles or practical cases discussing or describing integrated use of SEA and EMS. This, however, proved to be very limited and only a few articles were found, that contributed to our already existing knowledge. Since the conceptual framework (presented below) indicated SEA follow up as an important link between EMS and SEA special attention also was given to this. A number of books, documents, cases and research projects has been identified having a paragraph/mentioning SEA follow up. However, the information is very limited. Cherp et al. (2000) mentions SEA follow up as an insignificant and undeveloped element of SEA. The quest also has shown that there are quite a lot of SEA related MSc and PhD theses, however only few of them touch upon SEA follow up notion or its elements.

Conceptual framework

The conceptual framework initially developed is presented in Figure 1. The SEA and EMS processes, respectively, are represented by the block arrows, while the thin arrows represent theoretical linkages between SEA and EMS. Such linkages might be important for understanding an integrated use of the different tools. The identified linkages also served as important inspiration for the coming stages in the research process, e.g. for construction of interview templates in the case studies. In addition, three information and action carriers were identified; Processes, Documents and Actors, which are further explained in Table 1.

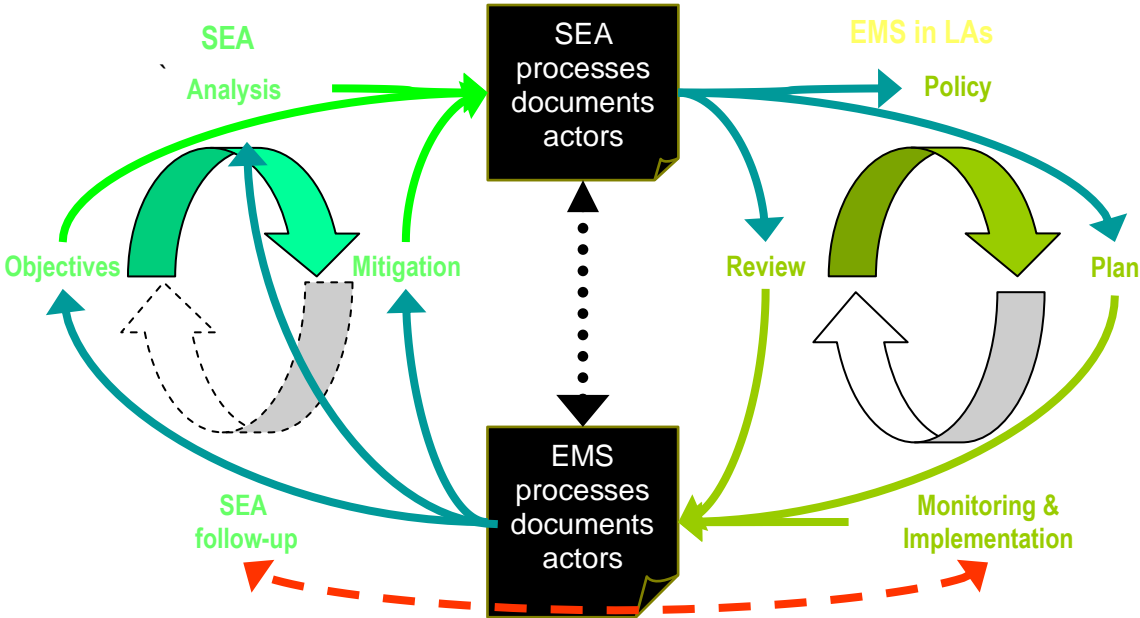


Figure 1. Conceptual framework for linking SEA and EMS. The SEA and EMS processes, respectively, are represented by the block arrows. The thin arrows represent theoretical linkages between SEA and EMS.

Table 1. Examples of information and action carriers enabling linkages between SEA and EMS.

Carrier	SEA	EMS	Linkage issue
Processes	Screening, scoping, analysis, reporting, review, consultation, follow up	Review, planning, implementation, checking	Timing, scope
Documents	SEA report, SEA follow-up plan	Policy, List of environmental aspects, Environmental program, Plan for auditing, etc.	Consistency in objectives, issues, indicators
Actors	Politicians, Planners, SEA team, Consultants, General public	Managers, Environmental managers, Employees, Politicians, Consultants	Mutual learning through interaction and networking

The processes of SEA and EMS differ a lot. Here we identified possible linkages in timing and scope. Examples of this are; EMS contains a predetermined cycle (yearly) which might add value to SEA (especially SEA follow up) and the broader scope of SEA could contribute to a wider systems perspective in EMS.

Both SEA and EMS result in different documents carrying important information and knowledge, e.g. as SEA report and Environmental Policy. Even though these documents are different in aims, terminology and design, a possible linkage identified is that these documents are consistent in objectives, issues, indicators etc. This would facilitate for the local authority to coordinate processes striving towards the same overall goal, eg. a local sustainable development strategy (SDS).

Finally, the individual and collective actors in SEA and EMS are many and might have very different backgrounds and agendas. The linkage identified here is mutual learning through interaction and networking. This could lead to an extended systems perspective where the actors realize their roles in a larger context. As discussed above, this also could facilitate the work with corporate sustainable development strategies.

Identified connections between environmental assessment of spatial planning and EMS in Swedish local authorities

As mentioned in the methodology chapter the aim of SEAMLESS was changed from studying the connection between SEA and EMS into studies of the connection between environmental assessment of spatial planning and EMS. The following paragraphs describe the connections observed in the case studies and pilot study respectively. More detailed information is found in Appendix III and IV.

Case study experiences

The case studies were performed in six local authorities. A large amount of data was collected from interviews, documentation and observation. The approaches of the studied local authorities are briefly described in Appendix III. Table 2 gives an overview of the local authorities and their EMS and spatial planning approaches.

Table 2. Overview of the case study local authorities.

	<i>Botkyrka</i>	<i>Halmstad</i>	<i>Lidköping</i>	<i>Lund</i>	<i>Uddevalla</i>	<i>Växjö</i>
Type of local authority	Suburban municipality	Large City	Other municipality, more than 25 000 inhabitants	Large City	Other municipality, more than 25 000 inhabitants	Large City
Number of inhabitants (as of 2007)	79 031	89 727	37 773	105 286	50 921	79 562
Type of EMS	Locally developed environmental management standard (based on ISO 14001)	Locally developed standard inspired by ISO 14001	Inspired by ISO 14001, but there is no demand for certification	Locally developed standard (based on ISO 14001)	EMAS	Eco-budget
Planning tools used	Long term activity planning	Instructions for screening project planning project model	Dialogue based management	Integrated management system Instructions for screening	Process model for spatial planning processes, Instructions for screening Balanced scorecards	Dialogue based management.
Other local sustainable development strategies	Aalborg commitments, Local Agenda 21	Eco-municipality, Local Agenda 21	Dialogue based management, Local Agenda 21	Local sustainability strategies for transport, Local Agenda 21	Rural Sustainable Livelihood, Local Agenda 21	Aalborg Commitments, Local Agenda 21

All studied local authorities performed environmental assessments of spatial planning. This could be seen as a result of already existing legislation. However, there was little experienced connection between the EMS and the spatial planning. The planners saw the EMS as rather static and non-flexible and with small contribution to the planning process, i.e. it did not add any value above the legislative demands. It was observed during the case studies that the culture of planners and of environmental co-ordinators differed significantly and that there often was little dialogue between their different departments.

The people co-ordinating the EMSs were often eager to integrate the spatial planning in the EMSs since the spatial planning is of significant importance for the organization's environmental performance. However, they had difficulties in finding measurable indicators for spatial planning, which lead to difficulties in following up the environmental performance. Spatial planners in some local authorities had noted that the environmental impact from planning might be managed within the EMSs and that the planning process could gain from this. However, there were still few concrete examples of how to make this happen in practice.

Three important examples of connections between EMS and spatial planning were identified in the local authorities of Lund, Uddevalla and Halmstad, respectively. In Lund, an integrated management system was implemented in an attempt to integrate the activities at the spatial planning department. This system encompassed quality management, environmental management and all the local targets and objectives that the department works towards. The respondents described this approach as useful in clarifying the connection between their internal processes and relevant environmental or quality objectives and targets. One concrete example of this is a matrix used in the planning department where the processes were plotted against goals and objectives they had to comply with or relate to. This was experienced to improve structure and systematization in their work.

In Uddevalla, an EMS instruction was designed to enhance for environmental consideration in the planning process. This was a checklist intended to be used at all planning tasks. It showed the environmental objectives related to the actual plan or program and gives a description of the targets and their relevance. The checklist should follow the plan or program until its finalization in order to inform planners and decision-makers which environmental considerations seen as important.

The third example of practical connection between the EMS and spatial planning was the EMS-co-ordination function in Halmstad. This function was divided into two different co-ordinator positions; one at the Department for organizational development and one at the Department for spatial planning. The two co-ordinators had different responsibilities but should also work as a team. The co-ordinator at the Department for organizational development had the responsibility for the local authority's internal EMS. One example of this responsibility was to support different departments in their EMS work via guidance, coaching etc. Responsibilities for the EMS-co-ordinator at the Department for spatial planning were to integrate environmental concerns into the planning processes as well as providing the local authority's external partners with EMS information and support. Such external partners could be NGOs, citizens, building contractors or other actors identified as important for the EMS or planning processes. In Halmstad, they were also to start to develop a planning project process model, with the idea to include certain mile stones to clarify where and when environmental concern was important to consider. Unfortunately, no detailed information of this approach was available at the time of the case study.

Experiences from pilot study

The pilot study was performed in the local authority of Lund. As presented in the case study section, the spatial planning department in Lund made an attempt to design and use an integrated management system where all processes and guiding principles for the activities in the department were included. This approach proved to be too complex and the integrated management system collapsed after some time. At the time for the pilot study the spatial planning department in Lund was in the process of rebuilding their EMS and to make two parallel processes of the EMS and the spatial planning. The idea for the EMS was now to focus on processes supporting mainly their office activities, such as emissions, use of natural resources, transportation. Other things that the ISO-system should include were statistics over the number of internal and external dialogues concerning environmental issues. The EMS should be designed according to the demands in ISO 14001. The process for spatial planning should focus on strategic issues, mainly controlled by legislative demands. Together this means that the spatial planning department ended up with a traditional EMS and that the spatial planning processes were separated from the EMS. However, there are some links between the different systems. The spatial planning processes and the EMS have several common steering documents that they need to consider, such as the national, regional and local environmental objectives, local strategies and stakeholders.

In Lund, there is a strong focus on dialogue and the pilot study showed examples of both formal and informal dialogues. The formal dialogue is for example official meetings and communication of documents and strategies, while the informal dialogue is what happens in the corridors. The informal dialog sometimes can be described as lobbying. There are tensions between these two types of dialogues and the power was often ascribed to the informal dialogue.

Potential connections between EMS and spatial planning

As described above, the pilot study in Lund showed that the connection between the EMS and the spatial planning had become limited during their last re-organization of their EMS. In order to think out of the box, an exercise was carried out to identify potential areas for integration between EMS and spatial planning. The ideas from this exercise are presented in this section of the report.

A general apprehension at the spatial planning department in Lund was that it is easier to connect the EMS to the environmental assessments (EIAs) performed for the planning projects than to strategic environmental assessment. One reason for this is that EIA is connected to a concrete project (directly connected to the local authority's activities) owned solely by the local authorities. In other strategic plans, there may be several actors and therefore more difficult for Lund to have a significant influence or control. Another barrier to integrate the EMS and spatial planning processes is the timing of activities within the respective processes. The EMS has a continual approach with regular follow ups and audits, while the comprehensive plan in Lund was designed before the SEA directive existed and is only revised once every fourth years.

The main part of the ideas for connecting EMS and spatial planning tighter together dealt with follow up and how routines could be developed in the EMS in order to ensure that follow up of plans is performed. There is today no structured follow up of environmental assessments of plans or of spatial plans. One problem that was raised is that there are obscurities in what the follow up should focus and why. There is a distinction between following up the product (in

this case the plan) and the process. It was therefore considered important to clarify this in order to enhance for the follow up of plans.

Today there seems to be a need for a further integration between different approaches to environmental concerns in the planning process. Several different environmental surveillance activities are performed in the local authority in order to get a picture of the environmental situation but these are sometimes little connected to other approaches such as the spatial planning processes. A suggestion made at the workshop was to connect the surveillance of the local environmental targets to the planning processes to obtain a better understanding of the situation of the environment and to make it easier to prioritize between different planning alternatives. This was also suggested to be connected to the updating process of the comprehensive plan.

One idea was to include an instruction in the EMS that says that follow up should be done on spatial plans with EIAs. These follow ups should then serve as input when updating Lund's comprehensive plan. Another issue that was considered important was that the EMS should host some kind of instructions or mechanisms for a feedback system between the different planning levels (the projects for detailed development plans and comprehensive plans). The participants also saw potential benefits from having a tighter connection between spatial planning and EMS, where the EMS could ensure that there are instructions for follow up of comments and complaints on the plans from the public or other stakeholders. These complaints are often addressed to other departments in the local authority and do not reach the planning department. The reason for this is that the problems experienced are little connected to the actual planning process but to the waste management system or the water supply etc. The instructions in the EMS could ensure that the spatial planning department is reached by these complaints and that these could serve as important input for contributing to the improvement of the planning process and to learn from earlier mistakes.

SEA and environmental concern in the spatial planning

In general, the spatial planners in the case studies considered that the environmental issues pervades the planning processes already and have difficulties in understanding the value of the EG directive 2001/42/EC. Environmental assessments were important in the planning processes; however the planners did not rely on the directive when performing these assessments. Moreover, the EG directive 2001/42/EC mainly hits plans that are updated or made rather seldom. The comprehensive plans in the local authorities were (in best cases) updated every fourth year, however in some local authorities there has been no major revision of this plan for more than ten years (i.e. before the directive was in use). There were weak or no procedures for follow up of spatial plans in the case study local authorities. This seems, in several cases to be something that few had reflected upon and saw the need of.

The pilot study in Lund showed that the environmental concern in spatial planning processes was rather integrated and structured. Environmental concerns were taken early in the planning processes and this also permeated the whole planning process. There was also an ambition to develop the methodology for environmental impact assessments by an extended use of GIS. One practical example of this was a plan for a neighborhood where travel time quota had been calculated by using GIS technology.

The planning processes in Lund are designed in accordance with the strategies and goals in the locally developed transportation strategy, the eco-management plan, the plan for green infrastructure and conservation plan etc. National and regional environmental goals are also

taken into consideration in the planning processes. The goals and visions from the just mentioned strategic documents are converted to plan indicators in the spatial plans. So far, the EU directive on environmental assessments (2001/42/EC) has had little impact on the spatial planning processes in Lund. One reason for this is that, at the time of the study, the directive was very recent, but also that it was experienced as difficult to interpret and understand. Since there already existed a strong environmental concern in the planning processes, the planners did not really know how and what to complement. However, screenings were made in the planning processes, and even if these were not based on the EU-directive, these were important in structuring the environmental concern in the planning process.

Discussion

The overall purpose of SEAMLESS was to explore conceptual foundations as well as feasibility of establishing better operational and methodological linkages between tools for strategic environmental planning, assessment and management. As a consequence of the empirical results the project came to focus linkages between environmental assessment of plans and EMS. A selection of another type of study organizations might have resulted in that the original focus on SEA could have remained. The following discussion focuses linkages between environmental assessment (EA) of plans and EMS. It also contains experiences that can be drawn regarding integrated use of environmental assessment and management tools in general.

Applying a *tool technique* focus on tool integration highlights several potential linkages between the studied tools (see Figure 1). In contrast the experiences from the case and pilot studies showed the importance of applying a *tool practice* perspective. Most of the identified linkages in Figure 1 were not observed, nor were judged as likely in the studies of the contexts where the tools were applied. Based on the case and pilot studies the overall conclusion is that, at the time of the SEAMLESS project, an integrated use of environmental assessment of plans and EMS was not possible, nor wanted, from the practitioners' view.

In chapter two we introduced three dimensions of tool integration, formal (procedural), learning, and interactive integration. Using these three dimensions the overall conclusion from the SEAMLESS project can be discussed in more detail as follows.

Formal (procedural) integration

This is largely a formal approach centered on tool technique, by which two or more tools are combined so that 'outputs' of one tool become 'inputs' of another tool, duplicate activities are avoided, etc. Linkages observed or identified as tentative in the case study and pilot authorities are summoned in Table 3.

Table 3. Examples of identified and tentative linkages between environmental assessment of plans and EMS in the case and pilot studies of Swedish local authorities.

<i>Carrier</i>	<i>Case studies</i>	<i>Pilot, observed</i>	<i>Pilot, tentative</i>
Processes	Integrated management system, Lund	Informal and formal dialogs between officers and politicians	Connecting surveillance of environmental targets to the prioritizing between planning alternatives. Follow up of plans.
Documents	EMS checklist in planning process, Uddevalla	Environmental objectives on national, regional and local levels. Local sustainable development strategies	EMS instructions for i) feedback between different planning levels; ii) management of stakeholder complaints
Actors	EMS co-ordination function, Halmstad	Stakeholders	

Linkages found for the carriers, processes, documents as well as actors range from specific checklists to advanced integrated management systems to ideas on informal dialog based environmental management. This indicates the possibilities of a wide range of interaction between the tools.

Analysing the linkages in table 3 shows a somewhat unilateral approach where the EMS feeds the planning activities with instructions and procedures. The other direction from planning into EMS was rarely discussed despite the potentials of e.g. widening the scope of EMS and to expand the involvement of stakeholders (Emilsson, 2005). This one-way communication might be an explanation to the observed weaknesses of tools' integration in practice. One reason for this could be the disharmony in timing between the EMS and the spatial planning processes. While the EMS is a continuous process where the actions and procedures are repeated on an annual or biannual basis, designing a comprehensive plan is a one-off process and the comprehensive plans in many local authorities were designed before the EG directive 2001/42/EC had come into force.

Our observations from the case and pilot studies show that there is little connection between the EMS and planning actors (which is partly illustrated with the lack of actor-connection in Pilot, tentative, Table 3). The lack of connection or interaction between actors is typical when applying a strict formal integration perspective, where the interaction of different users is not necessary or formal. This might lead to that potential linkages are not realized.

Learning integration

The learning integration is an approach by which users associated with different tools learn from each other. Learning can be on the methods and other knowledge. The interaction of users (tool owners) is formal with the aim of passing along knowledge. Still the focus is on tool technique but the context is taken into account. The pilot study was the main source for information regarding this approach. As mentioned, Lund was chosen as a pilot because of the integrated management system identified in the case study. The management system had just been developed and was under way of being implemented. Early in the pilot study it became evident that the management system had not come into practical use. One important reason to this was that the ambitious system was judged as too complex to be used in practice, i.e. a too strong focus on *tool technique* had been applied.

In addition the workshops showed that the different tool owners had different views on the strengths and weaknesses of their respective tools. It was not evident for the different tool users how they could benefit from applying working procedures etc used in the other tool. One reason for this observation could be poor communication between different professional cultures, i.e. spatial planners and EMS-coordinators. The role of different professional cultures also have been observed in studies of attempts to integrate e.g. energy issues into spatial planning (Engström, 1988; Ivner and Persson, 2009). Professional cultures differ in language and fields of knowledge resulting in jargons (Håkansson, 2001). These jargons can influence what is seen as a problem and how it should be solved. Jargons can also lead to misinterpretations. In the pilot study of SEAMLESS it was evident that planners and EMS-coordinators used different terms which were self evident for themselves but hard to understand for others. This leads to the observation that the respective tools owners took a lot of knowledge for granted, i.e. so called silent knowledge (Longo, 1999). Both jargon and silent knowledge hinder effective communication, which is a necessity for learning

integration. Consequently, this also hinders having an integrated approach (in this case integrated use of EMS and SEA).

Interactive integration

This type of integration presumes active interaction of the tool users which involves co-evolution and co-transformation of working procedures. Tool practice is the main focus. We could not observe any functioning interactive integration in the SEAMLESS project even if the participants in the pilot study were open for an extended integration of professional cultures. Further the integrated management system in Lund is an interesting case. It can be seen as an attempt to create a fully integrated tool that grasps the needs of the whole planning department, including the planners and the EMS-coordinators.

Our conclusion is that it is likely that interactive integration is hard to achieve and it can be questioned if it is desired. Too much focus on interactive integration might lead to complex resource demanding tool causing ineffectiveness and tool fatigue.

Tool integration and sustainable development strategies

One of the research questions in SEAMLESS was: *in what way can local sustainable development strategies benefit from more systematic application of environmental assessment and management tools, especially SEA and EMS?*

Sustainable development strategies (SDS) are according to the OECD's definition (2001)

“a co-ordinated set of participatory and continuously improving processes of analysis, debate, capacity-strengthening, planning and investment, which integrates the economic, social and environmental objectives of society, seeking tradeoffs where this is not possible”.

This definition encompasses a wide variety of plans such as regional development strategies, national strategies for sustainable development and local processes such as Agenda 21. An example of a local sustainability development strategy is the environmental program Lunda Eko; which states seven strategies and 56 long and short term goals for a six year period (Lund, 2006). Similar SDS can also be found in e.g. Växjö and Botkyrka. It was not possible to make any practical studies in what way local sustainable development strategies could benefit from more systematic application of SEA and EMS. The following discussion should therefore be seen as describing tentative contributions.

SDS are (must be) very complex, multifaceted strategies. Figure 2 aims to describe the overall underlying principles for a systematic approach to SDS. A multitude of different objectives and processes are fed into the strategy demanding for a coordination system. It can be tempting to suggest standardized management systems as such coordination systems. A too rigid approach to coordination can however be counterproductive since there is a risk that local needs and priorities are neglected (Dalal-Clayton and Bass, 2002). In the case studies of SEAMLESS we observed the effects of integrating the existing EMS with social and economic dimensions (Emilsson and Hjelm, 2009). We concluded that this required a wide systems perspective while keeping the total organizational performance in mind. Further we noted that management systems could be too instrumental for managing all dimensions of sustainable development.

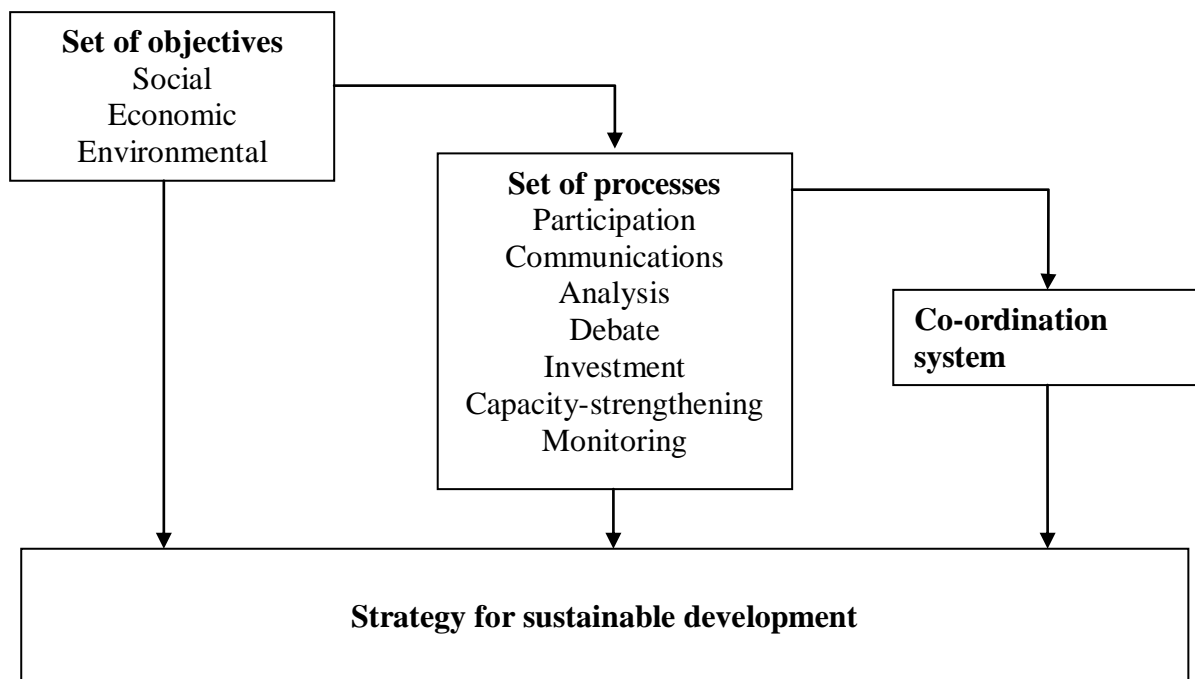


Figure 2. Underlying principles for a systematic approach to sustainable development strategies. From Dalal-Clayton and Bass (2002)

It can be argued that different sets of processes in figure 2 could benefit from using different approaches and main principles of SEA and EMS methodologies. Examples of this could be participatory approaches of SEA and monitoring system from EMS. Based on the experiences from SEAMLESS we find this as a difficult and demanding challenge. To be successful this must be seen as a learning process applying a wide systems perspective (Emilsson and Hjelm, 2009). Tentative benefits could be a better coordination of policies, visions and goals; generation and assessment of different alternatives; continuity and follow-up.

Conclusion

Theoretically, local sustainable development strategies could benefit from having influence from some of the main approaches and principles in SEA and EMS methodologies. Achieving this in practice, however, is a challenge that requires a wide systems perspective and a certain degree of maturity in the organization. At the time of SEAMLESS an integrated approach of environmental assessments of plans and EMS was not possible nor asked for at the studied local authorities.

Applying a *tool technique perspective* there are several possible linkages between the studied tools that could enhance each tool, e.g. widening the scope of EMS and facilitating follow up of SEA. It is important to understand the context, since it influences the feasibility of tool integration, i.e. a *tool practice perspective* is needed.

Further, a too strong focus on *formal integration* might lead to that potential linkages (i.e. tool integration) are not realized. To make such integration possible the focus should be more on *learning integration*. *Interactive integration* is hard to achieve and it can be questioned if it is desired. Too much focus on interactive integration might lead to complex resource demanding tool causing ineffectiveness and tool fatigue.

Based on our findings we give the following recommendations regarding the practical development of integrated use of environmental assessment and management tools in general.

- Integration should not be seen as a goal in itself. It is important to understand the need for and planned outcome from an integrated approach. Focus should be on understanding the needs of the tool users and how an integrated approach could facilitate and improve the effectiveness of tools use.
- Attempts of tool integration should focus on bridging the different professional cultures, i.e. tool owners. A learning integration approach might facilitate this.
- To clarify the tool users roles in and contribution to the organization a wide systems perspective is needed. This could facilitate cooperation across the professional cultures and thereby leading to a more holistic approach to the overall vision and goals for the organization.

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List of appendices

Appendix I: Methodology for SEA literature and internet review

Appendix II: Case study description for the integrated approach

Appendix III: Brief case descriptions

Appendix IV: Pilot Study

Appendix I. Methodology for SEA literature and internet review

Identification of sources

The preparatory research stage included screening of Internet and literature for identifying potential cases of and materials on SEA follow up. At this stage, a simplified content analysis² was applied. Relevant words and phrases (e.g. ex post SEA, ex post SA, post-decisional SEA, etc.) were searched on the Internet and scanned for in the available literature. The following sources were searched for

- Institutional literature on SEA follow up (guidance, manual, papers, etc.)
- Academic literature on SEA follow up (PhD/MSc theses, projects reports, etc.)
- Practical/professional documentation on SEA follow up, primarily in form of SEA follow up cases.

The principal domains of the data collection were the Internet space and e-databases, searched for different sources of the relevant literature, books, internationally published articles, academic papers, conference proceeding, and work pieces as well as institutional literature such as reports, instructions and guidelines. Each of the domains was explored for various combinations of words important for the research. The overall search scheme is presented in Table 1 with briefly stated results as of the beginning of 2007.

² A method for analyzing narrative data, e.g. texts, transcriptions, in which the similar text segments are systematically categorized based on the preplanned or specified characteristics (Tashakkori & Teddlie 2003).

Table 1 Search domains and major results of preparatory stage.

Internet Domain - the concentration is on the topical search of articles/publications/case studies through the publicly accessible search spaces (in different language, excluding translated pages):			
Language of the query	English	Russian	English & Russian
Search engines	<ul style="list-style-type: none"> • AltaVista • Google • Yahoo • Lycos • FrisGo • Ask.com, others 	<ul style="list-style-type: none"> • Rambler • Aport • Yandex, others 	
Meta – search machines			<ul style="list-style-type: none"> • Vivisimo • Hogsearch • RedZip search • AllinOne MetaSearch • MetaEureka, etc.
Results	A number of books, documents, cases and research projects has been identified having a paragraph/mentioning SEA follow up. Two books relate to the subject directly (Chapter 2).	The information is very limited, mostly one Chapter (10) on post-evaluation in SEA in a book by (Cherp <i>et al.</i> 2000).	The search results have repeated those received in other spaces/domains.
E-databases Domain – the quest includes choosing several (scientific) literature databases and searching within them (with affiliation/passwords) and focusing on projects at EIA centers/universities			
Sources	E-Libraries	PhD dissertations e-databases and research at Universities	
	<ul style="list-style-type: none"> • Electronic Information Service (EISZ) • Electronic Library Information Navigator (ELIN) (including Lund library's databases & links): • EBSCO research database (with all sources ticked) • International Impact Assessment Association database • Research Library of International Institute for SD 	<ul style="list-style-type: none"> • SEA database of the Netherlands Commission for EIA http://www.eia.nl/ncea/database/index.htm • PhD Data on current research http://www.phddata.org • University Microfilms (Dissertation Abstracts database with over 1.6 million Master's and PhD dissertations) http://www.lib.umi.com • University of Florida http://www.lib.umi.com/cr/ufl/main • Iowa state university http://www.ageds.iastate.edu/department/research/studentresearch.htm • University of Manchester http://www.manchester.ac.uk/ • University of East Anglia http://www.uea.ac.uk/env • Dissertations of Lund University http://theses.lub.lu.se/postgrad/search 	
Results	SEA follow up is mentioned as an insignificant and undeveloped element of SEA. The articles (7 more directly related), manuals, guidelines, articles, other reports, etc. identified, which mention SEA follow up are incorporated in the literature review section of this work. Identified cases of SEA follow up are covered below	The quest has shown that there are quite a lot of SEA related MSc and PhD theses, however only few of them touch upon SEA follow up notion or its elements. One of the closest current PhD topics is "SEA Monitoring of spatial plans in Germany" ³ started in 2005.	

Literature review

In order to systematically analyze the available vast body of knowledge on the broader research area, i.e. SEA, first a specific design for literature search was proposed. It implied the identification of appropriate materials needed to inform and underpin the study. It then further focused on materials directly related to the research focus, i.e. SEA follow up. Thus, the mixture of the following approaches was used:

- A systematic approach in looking at everything relevant to the research in the libraries and in the Internet via searching machines (meta-search and local engines in several languages).
- A retrospective approach when looking at journal articles (from the most recent material backwards) along with using citations, leads, and references from the

³ Marie Hanusch, UFZ Center for Environmental Research, Dept of Urban Ecology, Environmental Planning and Transport. A cooperation supportive contact with this person has been established.

identified materials to the related subjects since the research is interdisciplinary by its nature.

- Proper targeting of the literature search moving from the broader theoretical framework of the research area, SEA and crossing disciplines, on to a narrower SEA follow up focus in the literature.

Data collection for the literature review was accomplished by gathering primary and secondary sources materials related to SEA in its different forms, SEA follow up, cross-cutting theories involved in SEA and to questions of the evaluation of individual SEA follow up cases, if any. Given that SEA experience is very limited with regard to the micro level evaluation, EIA follow up literature is taken into consideration as a reference.

For the empirical part of the research, due to specialties of the research object, SEA follow-up it was necessary to investigate a lifecycle long history of strategic initiatives: from the initial SEA documentation and drafts of PPP to their final approved versions (with monitoring plan, if any), any published monitoring reports/ public opinions surveys, computer files and follow up files/databases, etc. A specific heed was paid to identification of documents that might shed light on the periods over which the monitoring activities were fulfilled by the responsible persons and when the information was processed and evaluated to see how it was transformed into managerial functions.

Primary sources. The collection of primary data on SEA follow up was carried out at the libraries, organizations, developers, research institutes, proponents, independent experts, at the governmental bodies and control structures, the community, NGOs via systematic investigations of written sources. The SEA reports and documentation on their strategies and other research related records were obtained from the proponents (owners), consultancies, local NGOs, specific periodicals, and others.

Secondary sources. The work examines the existing literature *inter alia* dissertations, bibliographies, scientific papers, research reports, etc. by a number of scholars on SEA/SEA follow-up/related disciplines and its constituents.

Since no systematic research to explore SEA follow-up has been undertaken before, criteria for identifying and analyzing the literature needed to be derived along the way. As a result of analytical discussion, case studies related consultations and correspondence, the 45 criteria of the initially developed conceptual and theoretical framework for SEA follow up were reduced to 30.

Appendix II Case study description for the integrated approach

Methodology

Step three in the SEAMLESS project, is based on case study methodology. Six local authorities were involved in this multiple case study. These are Botkyrka, Halmstad, Lidköping, Lund, Uddevalla and Växjö. The main selection criterion is a well established and active work with Environmental Management Systems (EMSs). The interviews were designed based on the conceptual framework that was designed within the SEAMLESS project, however, very early in the interview series it became clear that SEA was little known and the focus to change from SEA to environmental assessment in spatial planning (with focus on comprehensive planning). A number of interviews were carried out (between four and seven) with different officials and politicians in each of the selected local authorities in order to achieve a broader picture of the how the EMSs work in relation to the environmental assessment in spatial planning. Since the local authorities differ in size and organisational structure, the number of interviews in each local authority varied. However, it was ensured that the following positions or roles were included in the interviews:

- Official responsible for the local authority's overall activity planning
- Spatial planners responsible for comprehensive plans
- Co-operate EMS co-ordinator
- Chair of the political committee responsible for spatial planning
- Local government commissioner responsible for environmental issues

We are aware of that there is other types of planning, apart from planning of comprehensive plans that are relevant for the EU-directive on strategic environmental assessments (such as energy,- waste and transport strategies), however to make this introductory study feasible we have chosen to focus the spatial planning covering comprehensive plans. One reason for this is that the local authority alone has the responsibility for this kind of planning, while the responsibility for just mentioned type of planning often is shared between several different actors. This might lead to difficulties in discovering the connections (or non-connections) between the EMS (that often is closely tied to one organisation) and the spatial planning.

Altogether, 33 interviews have been carried out for this study. Most of them have been performed in situ, while a few were telephone interviews. All of the interviews were tape recorded and they were all transcribed word by word. Once the interviews were transcribed, the transcriptions were sent to the interviewees in order to assure their correctness and to correct possible misunderstandings or errors. The interviews have been managed anonymously in this study and it was clearly pointed out at the beginning of each interview occasion that it was the total picture of the local authority that was of interest and not individual statements.

The interviews were semi-structured and rather informal; however there were a few predetermined themes that were covered in all of the interviews (but not always in the same order). To some extent, the content of the interviews differed, since the interviewees were selected according to their roles in their local authority. The interviews elucidated the following themes:

- The role and approach of the EMS and how the EMS works

- Spatial planning process, how and where in the process is environmental concern taken, and in what way; what is the relationship between spatial planning and the EMS
- Which (if any) co-ordination there is between EMS and spatial and activity planning.

Interview template for case studies

The interview guides were originally formulated in Swedish and below follows a translation of the Swedish interview guides. The interview guide was first formulated with the SEAMLESS conceptual framework as a basis, however in practice, SEA was little known so the interview guide had to be changed to include on environmental assessment in spatial planning instead of SEA.

Questions to spatial planners

1. What is your educational and professional background?
2. For how long have you been working in this local authority? Which plans are you preparing/have you prepared in the past?
3. What does comprehensive planning mean in this local authority (describe the process)?
4. Do you apply SEA in your planning process, in that case why/why not/how/for what types of activities or areas?
5. How do you experience the EMS work in the local authority?
6. What environmental issues can be managed with an EMS and what issues cannot be managed with EMS?
7. In what way are you involved in the EMS work?
8. Describe the contact/connection to the staff in the corporate EMS co-ordinating team. (Formal/informal etc).
9. Describe the coordination between the spatial planning and the EMS work (formal/informal/if non existing, is there a wish for cooperation)

Local housing committee

1. What is your educational and professional background?
2. What political party do you work for?
3. For how long have you been a politician in this local authority?
4. Have you been politically engaged in other local authorities?
5. How does the committee affect the comprehensive planning processes?
6. How is the committee affected by the comprehensive planning processes?
7. How are environmental issues taken into consideration in planning and decision processes? What kind of environmental issues are discussed?
8. How is the connection between the politics and the employee level? Where in the planning process are politicians involved?
9. Have you heard about SEA? Is SEA something that you discuss or work with in the committee? If yes how?
10. How well are you acquainted with the EMS in the local authority? Do you know the staff that works with these issues? What kind of contact do you have with this staff?
11. How is the committee's work affected by the EMS? Does the committee affect the EMS?
12. Is there any connection between planning processes and the EMS? (How/why not/how would you like it to work if you feel that something is missing)

Municipal executive board (commissioner on environmental issues)

1. What is your educational and professional background?
1. For how long have you been a politician in this local authority?
2. How is the strategic/comprehensive planning anchored in the executive board?
3. How does the political management affect, and how is it affected by the strategic and comprehensive planning in the local authority?
4. How do environmental issues affect your work (decision-making, formal/informal rules/documents/actors etc)
5. How are environmental issues taken into consideration in the planning (what kind of issues are dealt with)
6. Are you acquainted with SEA? Is SEA something that you work with in this local authority?
7. How well acquainted are you with the EMS in this local authority?
8. How is the political work affected by the EMS? (How/if not: why?)
9. Is the EMS work used as a basis for decisions and discussions regarding the environmental efforts in the local authority (How/if not, why?)
10. How is the EMS work followed up on the political level?
11. What are your visions with the EMS?
12. How is the EMS work and strategic planning followed up on the political level?
13. What are your visions with the strategic planning?
14. Is there any coordination or cooperation between the strategic planning and the EMS work? How/If not: how would you like it to work?)

Corporate environmental coordinator

1. What is your educational and professional background?
2. For how long have you had this position in the local authority?
3. Have you experiences from similar work in other local authorities?
4. When was the EMS work initiated in the local authority?
5. What departments are involved in the EMS work and how far in EMS implementing process have you come?
6. What was the reason for EMS implementation?
7. How is the EMS limited (what departments, what issues are included)
8. What environmental issues can be managed with EMS? What environmental issues cannot be managed with an EMS?
9. Has the EMS affected the attitude towards environmental issues in the organisation?
10. How is the EMS related to other environmental efforts?
11. How well are you acquainted with the strategic spatial planning in the local authority?
12. Are you involved/informed about the planning? What is your role?
13. Have you any cooperation with the spatial planners? What kind of contact/cooperation?
14. How do you experience the spatial planning in the local authority?
15. How is spatial planning carried out in relation to environmental efforts?
16. How is the EMS affected by the spatial planning
17. What environmental issues can be managed within spatial planning? What environmental issues cannot be managed within spatial planning?
18. Are you acquainted with SEA? If yes: is it used in this organisation and in that case, what is the relation between EMS and SEA? Are there any similarities/differences between the different approaches?

Documentation studies

Documentation studies was another important source of information for this case study. For example, documentation concerning the local authorities' spatial planning and EMSs along with documentation from our earlier studies in these local authorities were compiled and analysed. Information drawn from these sources were compiled and added to the results from the interviews, in an excel spreadsheet for further analysis.

Analysis of the results

The results from the interviews, along with collected material regarding EMS and spatial planning were compiled in an excel spreadsheet. The local authorities' approaches were cross-analysed and an idea of the local authorities' apprehension and strategies to an integrated use of EMS and SEA was formed. Research questions for the pilot study were extracted from the results and analysis of the results from the case study.

Validity and reliability of the study

We want to stress that this study does not try to make any generalizations for how Swedish local authorities work with these issues, since the selected case study objects are to be considered as forerunners in this respect. The results and conclusions from this study are thus only valid for the six selected case study local authorities. Since environmental issues and spatial planning are areas of development and maturing, it is likely that the results would come out slightly different if the same study was to be carried out again. Moreover, several of the local authorities, have, due to elections, changed their political management, which means that these issues may have a different priority today compared to when the study was carried out. Several of the local authorities were also in the middle of reorganisations when the study was carried out, which could lead to a changed way of managing these issues. This means that the case study results presented in this study are valid for the period when the data collection was carried out (in 2006).

Appendix III

Brief case descriptions

This section gives a brief description of each of the case study local authorities' approaches to EMS and spatial planning.

Botkyrka

In the organizational culture of Botkyrka there is a strong tradition of having an integrated way of working (regardless of activities). This is also valid for the environmental-and sustainability management. The base for the local authority's activities is the activity plan covering several years (these are strategic activity plans). The activity planning is based on the ideas of balanced scorecards. Environmental- and sustainability issues are one of four prioritized areas in the multiple year activity plans. The EMS work was initiated in 1996/97 and is based on a locally developed standard for environmental certification. This is inspired by ISO 14001, but is adapted and developed by and for Botkyrka local authority. This is also seen as a part of Botkyrka's quality management system. EMS guidelines and criteria are politically anchored and decided on. However, it is then down to each department to decide how to fulfill the criteria in the local standard. This means that the EMSs developed within the local authority could look quite different. There is a corporate EMS co-ordinator and the environmental department and there is a central steering committee responsible for the progress and development of the EMSs. Furthermore, there are environmental co-ordination functions at each management level.

Over the last few years, the EMS has been developed into Sustainability Management Systems (SMSs). This, among other things, means that there is a wider scope of their management efforts and that they include social and economic perspectives to a larger extent. This also means that they have widened the focus of the management from mainly concerning the local authority organisation to also including external stakeholders in the society. One step in this direction is signing the Aalborg charter. When this study was performed, Botkyrka was about to formulate their Aalborg challenges and to set up the frameworks for this approach. The Aalborg commitments were considered by one of the interviewees as something that could tie the politics and the departments' activities closer to each other.

The spatial planners at the planning and development department did not experience that the EMS affected their work in any particular way. There was already a well established co-operation with the environmental department and they often work in cross-competency groups in the spatial planning processes in order to ensure as many perspectives of the planning as possible. When this study was performed there was no follow-up of spatial planning.

Halmstad

Halmstad was in the middle of a reorganisation when this study was performed. The overall activity management system was to be changed and a new management system was under development. The idea was that the new system should have a more integrated approach to all issues and responsibilities that the local authority faces. The environmental issues would have the same importance as other issues in this system and all activities should depart from the local authority's vision. All departments were implementing EMSs, but not all of them had functioning EMSs at the time of the interview for the SEAMLESS project. The current EMSs were based on a locally developed standard that is inspired by ISO 14001 and the local

standard developed in Lund. Halmstad local authority had centrally developed guidelines and templates to support the EMS work. The co-operate co-ordination function was divided in two employments. One was dedicated the corporate development department (with responsibility for the internal EMS work) and the other was dedicated the spatial planning department (with responsibility for external information, the planning processes and external networks involved in the planning). In parallel with the EMS, 45 environmental targets within the local authority's eco-management plan and another 43 environmental targets were developed as a consequence of Halmstad's membership in the Swedish eco-municipalities. One interviewee experienced that there was frustration within the organisation due to the abundance of different programs, plans, policies and objectives and targets. This problem was a general issue within the organisation, and one of the reasons behind the on-going reorganization, and not specific for the environmental management. The implementation of EMS had brought about mixed feelings within the organisation, since it had to pave the way for a functioning overall management system. The environmental co-ordinator believed that many of the organisational structures that should already have been in place before the EMS work was initiated became the struggle of the EMS implementers. Therefore, the EMS implementation process was experienced as rather difficult. One of the most important reasons for EMS implementation in Halmstad was to get a better overall management system.

Energy issues and spatial planning is experienced as very difficult to include in the EMS in Halmstad local authority. When it comes to the spatial detail plans, there were checklists for environmental concerns. This checklist was connected to the EMS as a routine. At the time for this study, the planning department was about to develop a model for planning processes, where it should be ensured that environmental concerns were taken early in the planning process and ensuring that there were procedures for follow up of the plans. When this study was performed, there was no follow up of the spatial plans, but the environmental co-ordinator thought that routines for plan follow up would be included in EMS once the EMS is more mature in the organisation.

Lidköping

All activities in Lidköping departed from their balanced scorecard and dialogue based management. The environmental issues were experienced as integrated in the overall management in the local authority and are considered as a part of the balanced scorecard. The EMS was initiated in 1996, but it was first in 2001 when there was a functioning of the EMS organisation when it started in practice. Lidköping's EMS departs from ISO 14001, but it was up to each department to decide on whether they should go for certification or not. All departments were involved in the EMS work at the time of this study, and the EMS progress were discussed at the top management board meetings on a monthly basis. There were mixed feelings about the EMS work in the local authority, but since they got their EMS organisation in place, the positive attitude has been dominating. Lidköping had a central environmental co-ordinator and there were also co-ordinators at each department. Most of the EMS work is decentralised to each department.

The spatial planning in Lidköping had, at the time when the study was performed, not been included in the EMS work, but recently there have been discussions on how to make the spatial planning a part of the EMS. They have started to realise that the spatial planning is one of the most significant environmental aspects from the local authority's activities and therefore find it important to include in the EMS. They believe there is a huge potential in making the environmental concerns in the planning more systematic by connecting the

planning to the EMS. There are no follow up of the spatial plans in Lidköping, however this could become one of the results from including the planning activities in the EMS.

Lund

There is a long tradition of decentralisation in the local authority of Lund, which also means that there is little hierarchy. It is the responsibility of each department to decide how to fulfil its commitments. A consequence of this is that there were several different management systems. This was seen as positive from the point of view that the departments develop systems that are adapted to the local conditions. One drawback considered with this strong decentralisation was that it was experienced as difficult to co-ordinate the EMS efforts on a corporate level. The EMS work was initiated in 2000 in Lund, but it was first in 2006 when the political decision of EMS implementation in all departments was taken. Lund has developed their own EMS standard, with inspiration from ISO 14001. A wide range of templates and guidelines have been developed on a central level supporting the departments in their EMS implementation. All departments have performed internal environmental reviews and some of them have performed external reviews.

The department of spatial planning has initiated the implementation of an integrated management system where they have included all their activities. The department experienced that this approach had clarified their own processes and improved the environmental and quality concerns in the spatial planning processes. However the social aspects from spatial planning are experienced as very difficult to manage within the system. Dialogue is a very important tool in the planning processes. Lund has tried to perform strategic environmental assessments, but so far there are no follow up procedures for the spatial plans.

Uddevalla

Balanced scorecard is the core of Uddevalla local authority's activities, where environment is one of 18 strategies. Uddevalla initiated their EMS work in 1999 and holds, since 2004, an EMAS registration. One of the interviewees considered that the key in Uddevalla's EMS was that the work departs from existing management structures and the organisational culture. At the time of the study, there were 15 environmental goals that all departments had to work towards in one way or another. The EMS was in the process of being expanded to also include the society and social aspects to a higher degree than before. The environmental management organisation consisted of a central EMS co-ordinator and local co-ordinators at each department. There were also several internal EMS networks. Activities such as inspections (of e.g. industry and food retailers and restaurants) and spatial planning were considered difficult to manage within the EMS. The spatial planners did not experience that the EMS had any effect on the planning processes. One of the reasons that were mentioned was that their activities are rather firmly controlled and steered by (environmental) legislation and that environmental concern is a core issue. However, there existed a procedure within the EMS saying that a special checklist should be used at every planning process and this list should be attached to each plan during the whole planning process until the plan is finalised. A few years ago, Uddevalla formulated and decided on a new energy plan, and this was synchronised with the objectives and targets and strategies in the EMS, which means that there was now a clear connection between the EMS and the energy plan. At the time of the study, there was no follow up of spatial plans and the local authority had not discussed what changes that need to be done in order to meet the criteria in the EU directive on strategic environmental assessments.

Växjö

Växjö has chosen to integrate their EMS in their existing budget management system. They use a model developed by ICLEI called eco-budget. This type of EMSs is rather similar to the main principles in ISO 14001 and EMAS when it comes to environmental review, formulation of environmental targets and objectives and continuous improvements. However the eco-budget system has a wider organisational scope. While ISO 14001 and EMAS mainly focus the internal organisational environmental management does eco-budget expand the scope to the local authority's territory, including local business and citizens. The EMS in Växjö was based on their Local Agenda 21 strategy from 1999 and their environmental policy from 1993. The environmental management results and progress were presented and communicated in the same way as the financial and used the same organisational structures. Each department must develop their own environmental budget and they are responsible for keeping to the budget. There was an environmental programme that steered the environmental management efforts along with the budgets. The programme set the goals and targets and it was developed in communication with the local authority's internal and external stakeholders. The EMS work in Växjö was co-ordinated by a central co-ordinator and the departmental managers in each department. There was also a network for the EMS work. The interviewees considered that this approach seemed to fit Växjö well but one difficulty that has been discovered was to control and improve the citizens' environmental impact.

At the time when this study was performed, Växjö had just developed a new comprehensive plan for its territory. The process for developing this plan is rather innovative and has an extensive participation both internal and external. About 50 employees from different departments were engaged in the developing process and they brainstormed and identified a number of issues that they saw as important for the plan. This served as a base for establishing 25 working groups where the issues were further elaborated. Dialogue is seen as crucial for this work (and of course also in everything that the local authority does). The working groups gave important input to the development of the plan and there were many meetings (both internal and external) concerning the plan. The eco-budget has had little to do with the spatial planning, even in this recently developed master plan. It was experienced as difficult to find measurable indicators for the spatial planning. This could be one of the reasons why there is no follow up of the local authority's spatial plans.

Appendix IV Pilot study

Working material for the second workshop in Lund (Translated from Swedish):

Environmental Management Systems and environmental concern in spatial planning, Department for spatial planning in Lund, workshop II

Time: 13th of March 2008, 8.30-12.00

Place: Västra Station, Spår 7 andra våningen

This working document is a brief compilation of the studies that we have performed for the SEAMLESS project in the local authority of Lund. This will constitute the point of departure for the discussions in the workshop on the 13th of March 2008. In this document we first introduce our picture of how we, through earlier case studies and the previous workshop, perceive the EMS work and environmental concern in spatial planning at the Department for spatial planning. Thereafter, we reflect on our observations and give ideas for how the work within this field could develop further. This document ends with a set of main questions that we would like to discuss during the coming workshop. Our picture might not correspond to your reality, so this is another important issue that we would like to discuss.

Environmental concern in the spatial planning vs. The EU directive on environmental assessment

From what we have seen in the case study (that was performed during the spring 2006) and in the first workshop (including the complementary interview) during the fall 2007, it seems like Lund has an ambitious approach when it comes to environmental concern in spatial planning. It is our apprehension that environmental considerations are made early in the planning processes and that there is a thorough environmental awareness throughout the processes. There is an ambition to develop the EIA-methodology by including GIS to a larger extent than what is done today. This has, for example, already been done in the spatial plan for Södra Sandby. In that particular plan, you have calculated on travel time quotas using GIS technology. Furthermore, the just mentioned plan has also an extended EIA where the social and economic aspects are included. The EMS does not seem to have any significant effect on the spatial planning. However, there is a long tradition and widespread acceptance for working with environmental issues and Lund is a forerunner among many Swedish local authorities when it comes to environmental management.

National and regional national environmental quality objectives are taken into consideration in the spatial planning, as well as the local targets and strategies that the city council has agreed on (e.g. LundaMats, Ekohandlingsplanen, Grönstruktur och Naturvårdsplan etc.). The visions and targets in these documents are converted into indicators in the spatial plans. These indicators are, in turn, connected to some kind of follow up and we are curious to discuss this follow up more in detail at the coming workshop (how is the follow up carried out and how is it compiled etc).

The *Strategic environmental unit* has performed a follow up of the environmentally related standpoints in the comprehensive plan. The latest follow up (that we know of) is from 2002 and in this, 54 standpoints have been summarised and evaluated. The version that we have access to is a draft and not a completed report (Version III). It pinpoints both strengths and weaknesses in the areas of competency. Transport is one example of an area in which the indicators are often followed, whereas in the agriculture area is pinpointed as weak. How has the feedback from the follow up into the comprehensive plan been used in the planning processes?

We have observed that so far, the EU directive on environmental assessments in plans and programs (2001/42/EC) has played little role in the spatial planning. This is something that we have seen in the other case studies within the SEAMLESS project, so this is not unique for Lund. This depends, to a large degree; on that the directive is difficult to understand and interpret and that it is difficult to know what extra efforts that are needed to meet the requirements. Another important reason is that many Swedish local authorities experience that environmental concern in spatial planning is well regulated within the national legislation and the directive therefore feels superfluous.

Based on the reasoning above, it is therefore experienced as difficult to judge what Lund should do differently in order to meet the requirements in the EU directive. One area that we see as interesting for further development within the spatial planning is designing guidelines or instructions for screening. The follow up of plans is another interesting area for development (perhaps via the systematic approach in the EMS). Follow up of spatial plans is something that we see needs to develop in all six case studies in the SEAMLESS project. The follow up is therefore something that we would like to discuss with you on at the upcoming workshop. How should the follow up be carried out? What are the benefits from follow up?

Connection between EMS and spatial planning processes at the Department for spatial planning in Lund

The Department for Spatial planning tried to design an integrated management system where all processes and guidelines as well as regulations related to their activities were mapped. This approach proved to be too complex for the organization and was taken out of use before it was fully implemented. There must have been several reasons behind this, and we would like to hear more about the process of implementing an integrated management system at the department during the upcoming workshop.

The Department for spatial planning in Lund is now underway developing a new EMS. The idea is to divide the EMS in two separate levels. The first is based on the main principles of ISO 14001 and will focus mainly processes connected to the office activities. The second system is more strategic and will include the spatial planning processes which are regulated in national legislation. The strategic efforts will be measured through statistics of number of performed activities, according to an e-mail correspondence with Jonas Andréasson connected to the environmental aspects (cut from e-mail):

”

- "Internal dialogues concerning environmental impact in the spatial planning process”
- "Information and dialogue with politicians and citizens regarding environmental impacts from spatial planning "

These two dialogue issues will be included in the list of environmental aspects in the operational EMS that has five main focuses:

- * Number of occasions with internal dialogues concerning environmental issues and environmental impact from the spatial planning processes.
- * Number of information occasions and dialogues with politicians and citizens regarding environmental impact from spatial planning processes.
- * Emissions to air, ground and water
- * Use of natural resources (including energy)
- * Transport

We will follow the criteria on EMS according to ISO 14001. ”

We illustrate our interpretation of the development of how the EMS work has developed at the Department for spatial planning in Lund below. The initial idea was to integrate all strategies, targets and objectives and processes that were relevant to the department into an integrated system (see Figure 1). The horizontal arrows in Figure 1 represent the processes and the circle with arrows represents the management system.

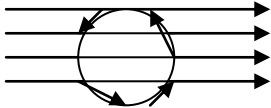


Figure 1. Schematic figure of the Department for spatial planning in Lund's planning processes in the former integrated management system.

This integrated approach became too complicated to be manageable and therefore, the EMS was partly separated from the spatial planning processes. This led to that the EMS mainly dealt with office related activities. It also led to that the more strategic issues related to the spatial planning processes were managed outside the EMS. This does not, however, mean that these two systems operate in isolation from each other. There are several connections between them and we see several potential links (see Figure 2).

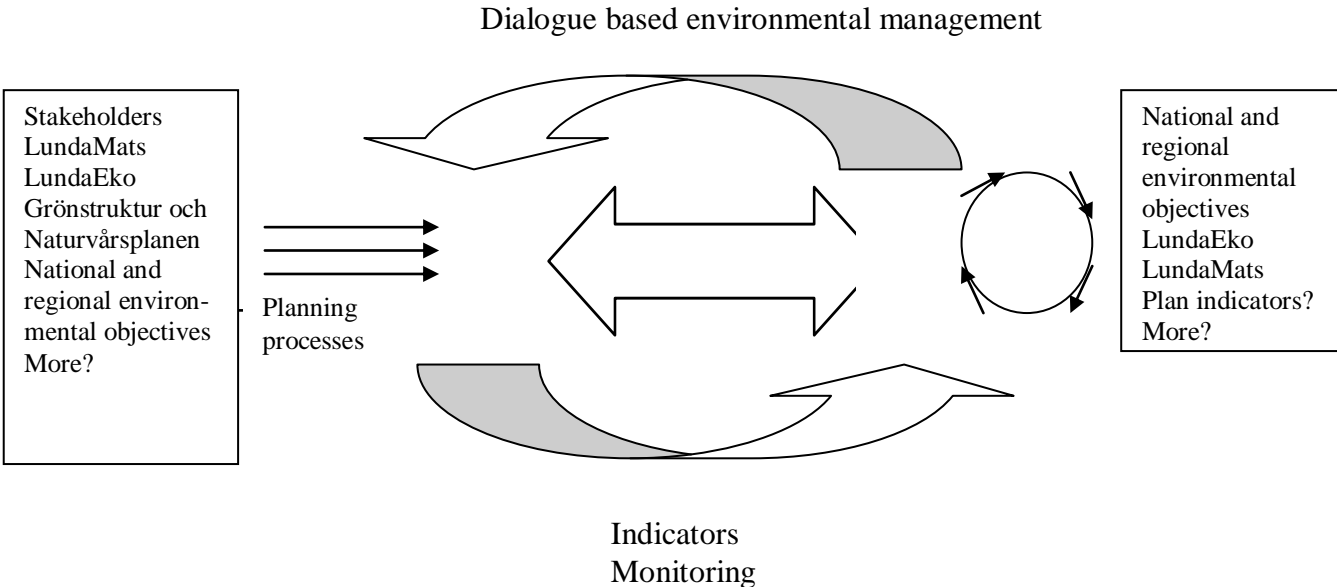


Figure 2. Interpretation of the Department for spatial planning in Lund's current management systems, including the links between spatial planning and EMS.

The targets within LundaMats and LundaEko are clearly mirrored in both EMS and spatial planning and we can see that these documents are operationalised in both management systems as in planning processes. The plan indicators and targets that are formulated in the comprehensive plan could be regarded as strategic strategies for the development in the local authority of Lund where the comprehensive plan is the most strategic document. We are curious to learn more about how the plan indicators are identified and how they affect the EMS.

Possibilities and hinders for connection between EMS and spatial planning processes

Departing from our observations, we can see that the EMS and the spatial planning deals with different cultures where the way of thinking differs significantly. This could lead to conflicts, misunderstandings and communication problems. Furthermore, the time perspective, for example when it comes to follow up, differs in the EMS perspective and the spatial planning perspective. Within the EMS, there should be routines to ensure that the follow up is carried out on a continuous (often yearly) basis, whereas the time perspective for follow up within spatial planning often is much longer (the comprehensive plan is revised every fourth years) and not as structured as the EMS follow up. This could lead to difficulties in linking the EMS process to the spatial planning processes. In order to enable for a synchronisation between these two approaches it is important to identify common processes and reflect upon if/when it is relevant and fruitful to link the work. What are the key components? When it comes to follow up the EMS could perhaps ensure that there are routines for structuring the follow up of plans and for ensuring that follow up of plans actually is carried out. The EMS could perhaps also work as a bridge between different phases in the planning processes. It is possible that checklists and instructions could be designed within the EMS and be used in the planning processes.

The planners often experience the EMS as something static and unstrategic since the planners do not come into contact with the EMS until it is too late to have an impact on the planning process. This is not unique to Lund, but common to all six case studies in the SEAMLESS project. It is often the EMS team at the planning departments (or corresponding) that formulate policy and objectives and targets (which later are decided on politically) and the planners experience that they have little impact on that process, they only fase the finalised EMS product. Something that we have observed earlier in the SEAMLESS project is that many planners question the effectiveness of EMSs at planning departments since spatial planning is heavily regulated in national legislation.

How can the EMS in spatial planning departments be designed in order to come closer to the core business and thereby become meaningful for the planners?

Main issues that we want to discuss in the second workshop

From our analyses of the EMS work and environmental concern in the spatial planning processes at the Department for spatial planning in Lund we conclude:

1. EMS is not perceived of as strategic by spatial planners.
2. The EU-directive (EU 2001/42/EC) is not experienced as relevant for spatial planners.
3. There is potential for further development of follow up of spatial plans.

Does our picture correspond to yours?

In that case:

- What is needed for the EMS to be perceived of as something strategic?
- How can the follow up procedures for spatial plans be further developed? What should follow up lead to and how should it be used?
- Should/can spatial planning processes be linked to the EMS? What are the barriers to link the two approaches?

If you have any questions or comments before the workshop, please do not hesitate to contact us in advance.

Most welcome to the second workshop. We are looking forward to interesting discussions.

/Sara, Olof and Aleh



FROM TOOL TECHNIQUE TO TOOL PRACTICE

Experiences from the project SEAMLESS: Strategic Environmental Assessment and Management in Local authorities in Sweden

This is the final report from the project SEAMLESS, Strategic Environmental Assessment and Management in Local authorities in Sweden. It was a joint project between Environmental Technology and Management, Department of Management and Engineering, Linköping University and the International Institute of Industrial Environmental Economics at Lund University. SEAMLESS has been a part of the research programme Tools for environmental assessment in strategic decision making, MiSt. The aim of SEAMLESS was to explore conceptual foundations as well as feasibility of establishing better operational and methodological linkages between tools for strategic environmental planning, assessment and management, especially between SEA and EMS in local authorities. The rationale for the study was that local authorities are important actors on the environmental arena, which make and implement a large number of decisions directly and indirectly affecting the environment. A multitude of different systems and tools have been developed to support environmental management at local authorities and an integrated use of different tools can have various benefits. The project has dealt with an issue central to the MiSt-programme: effectiveness of tools must be seen in the light of both the underlying theories and assumptions of tools and on the context in which they are applied.

Tools for environmental assessment in strategic decision making, MiSt, is an interdisciplinary research programme on tools for environmental assessment in strategic decision making funded by the Swedish Environmental Protection Agency. The programme is co-ordinated from the Swedish School of Planning of Blekinge Institute of Technology. The focus of the MiSt-programme is the empirical study of effectiveness of tools of environmental assessment as aid to strategic decision making. The object of the research is to study the function of tools that aid in environmental assessment as a key component in strategic decision making. The aim is:

- a critical examination of the function of tool
- a theory based understanding of their effectiveness
- and ultimately a development of prescriptions for effective tool use including effective combinations of tools.

Two perspectives running through the programme are public participation and legal regulation of tools.

There are four components to the programme:

- Empirical research projects;
- Concurrent programme activities aiming at integrating projects, including a "research school" for doctoral students from the programme institutions but also from other institutions;
- Exploratory projects which will lead to further empirical projects;
- Synthesis and summary including communication with users.

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