

# Managing environmental impact from organisations in the service sector

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## **Abstract**

Indirect environmental impact is little supported in official standards for standardised environmental management systems (EMSs) such as ISO 14001 and EMAS. However, indirect environmental impact relates to the core activities of many, especially in the service sector (including the public sector).

Earlier research in Swedish local authorities shows that although they realise the importance of managing indirect environmental impact, it is found difficult to deal with within their EMSs, and therefore sometimes neglected. What does an EMS in a local authority, a central government agency or a service delivering company, say about the organisation's total environmental performance if the environmental impact from e.g. consultancy, decision-making, spatial planning or education is left out of the system?

The main purpose of this paper is to explore ways to deal with indirect environmental impact within EMSs. To achieve this, interview studies were performed in Swedish central government agencies, consultancy firms and insurance companies, whose core activities give rise to mainly this kind of environmental impact. This paper presents the organisations' views on indirect environmental impact, and discusses possible approaches to this issue. The results from earlier studies in local authorities show that there is a limited systems' perspective when it comes to environmental and sustainability management issues. By adopting a broader approach to these issues and also perhaps management issues in general, many of the problems experienced connected to indirect environmental impact could come closer to a solution. This paper concludes by discussing and analysing process based management as one way of getting this wider systems perspective: an approach that could be useful in order to support the organisations to adopt a broader systems thinking when it comes to their management systems in general and thereby also help them find ways to manage their indirect environmental impact.

## **Introduction**

Using standardised environmental management systems according to the criteria in the international standard ISO 14001 and the EU regulation EMAS has become common in many kinds of organisations. In the end of 2006, there were about 129 000 ISO 14001 certificates around the world (Corporate Risk Management 2009) and together with those organisations that use EMSs without going for certification, but only using the main principles in the standards, the number of organisations using EMSs is far higher. ISO 14001 and EMAS are often criticised for being developed by and for producing companies. One example of this is that there is little (or no) support for how to manage

indirect environmental impact in these standards. For organisations in the service sector, it is often the indirect environmental impact that is of most significance for their core activities, however, it has proven difficult to deal with this impact for example due to its complexity and difficulty to measure and follow up. There is a broad range of activities that could give rise to indirect environmental impact. The Swedish EPA has exemplified a few categories of activities: directions, advice, various decisions, sharing of knowledge and information, research, and environmental monitoring of industrial sites (Swedish EPA, 2004). There is no firm definition of indirect environmental impact in ISO 14001 or in EMAS, however indirect environmental impact was, in an earlier study defined as:

“Indirect environmental impact constitutes any change to the environment, whether adverse or beneficial, wholly or partially resulting from an element of an organization’s activities or products or services, influencing other actors’ prerequisites to perform their activities.” (Emilsson and Hjelm, 2007)

This definition indicates that environmental impact arises when the organization changes or has an impact on the prerequisites for other actors to perform their activities. Experiences from studies in Swedish local authorities show that indirect environmental impact often is experienced as difficult to manage and therefore choose not to include the indirect environmental impact in their EMSs. Other studies also show that companies choose to exclude the indirect environmental impact due to the ISO 14001 requirement of measurability and documentation (Procopé and Axelsson, 2003). This requirement could be seen as an indication that organisations should prioritise environmental aspects based on the possibilities to directly measure the environmental performance. However, if organisations in the service sector exclude activities connected to indirect environmental impact from their EMSs (often connected to their core activities), the credibility of the use of the tool EMS could be questioned. For example, environmental performance measured within the system is then limited to a small and perhaps not very significant part of the activities of the organisations.

In many cases, the indirect environmental impact is closely connected to how the organisations responds to climate change. Most organisations have a vast number of strategies and policies. How these strategies and policies reflect environmental awareness and attitudes to climate change is very important for how the organisations act and also for their environmental performance. For example, an organisation’s internal guidelines for business travels, how the organisations economize with energy and purchasing directives are issues that all give rise to indirect environmental impact and that all have are important factors for their impact on the climate. By having appropriate and well communicated strategies for these issues, the organisations could decrease their negative impact on the climate. Training and awareness raising campaigns internally in order to increase the employee’s understanding of what effects their work and the organisation as a whole has on the climate and what could be done in order to improve the situation are other important issues are related to indirect environmental impact.

This paper takes its point of departure from an earlier research study on the same topic that was carried out in Swedish local authorities. The main purpose of this paper is to explore ways to deal with indirect environmental impact within EMSs in service sector

in organisations that have ISO 14001 certified EMSs. This is then compared with the ways local authorities manage this issue. Certification of EMSs among Swedish local authorities is very rare and many local authorities find it very difficult to deal with this environmental impact. Therefore, it was interesting to study whether certified organisations have better methods or approaches to indirect environmental impact. Other questions that were in focus for this study is how the studied organisations define indirect environmental impact (since there is no formal definition) and how it is managed.

In order to brief the reader on the results from the preceding study to the research carried out for this paper, there is a brief description of the main results in the following chapter. This is followed by a chapter describing the methodology for this study. Thereafter, the empirical results from this study are presented, followed by an analysis comparing and compiling the two studies. Finally an idea to approach the problem with indirect environmental impact is presented.

### ***Experiences from managing indirect environmental impact in some Swedish local authorities***

This is a brief summary of the main results from the study that this study expands on. See Emilsson and Hjelm (2007) for the full paper.

#### **Reasons for EMS implementation**

Many local authorities in Sweden have a long experience from using EMSs, however third party certification is seldom an aim. The local authorities rather use ISO 14001 and EMAS as guidelines for designing their locally developed EMS standards (Emilsson and Hjelm, 2005). There are no formal requirements on local authorities to implement EMSs in their organisations; they rather do it to improve the structure of their environmental efforts (Emilsson and Hjelm, 2002).

#### **Definition of indirect environmental impact**

There were no outspoken or widely communicated definitions of indirect environmental impact in the local authorities in the interview study, however most of the EMS co-ordinators referred to indirect environmental impact as something that they do that affect other actors' environmental performance in some way.

#### **Approaches to managing indirect environmental impact**

The interview study from 2007 shows that there are two main strategies to managing indirect environmental impact among the local authorities. The most common strategy was to exclude this kind of environmental impact from the EMS, at least for a start, since many EMS co-ordinators experienced that this concept is too complicated and abstract to grasp at the initial phases of the EMS implementation. These local authorities considered it better to introduce the EMS concept by focusing on issues that were easier to understand, such as energy and material flows that actually are directly measurable. Furthermore, many considered it difficult to understand and estimate the actual implications from activities that give rise to indirect environmental impact (for example spatial planning, where the effects and implications are not visible until the plan actually is set in action). The second strategy to managing indirect environmental impact in the studied local authorities was to include it in the EMSs but to avoid talking about different kinds of environmental impact. The EMSs rather focused the processes

in the organisations including all activities in the same way, regardless of whether they are direct or indirect. The local authorities that had this approach thought that defining and explaining the differences in environmental impact rather confused the employees than helped them in their EMS efforts and that the important issue was to see to the whole process and that this approach made it easier to get acceptance for the EMS in the organisations.

Another important issue that was raised by the local authorities in the interview study from 2007 was that managing indirect environmental impact to a high degree was a matter of EMS maturity. It was considered easier to include the indirect environmental impact once the EMS thinking is settled within the organisation and when the employees have become acquainted with the way of thinking and working. Adequate environmental competence/knowledge, communication and interaction, and EMS continuity and priority were considered as the most important factors for this maturity process. If these factors are weak, they were seen as barriers to the maturing process.

### ***Methodology***

The research design of this study is based on the methodology for and earlier experiences from our research on indirect environmental impact in local authorities. In order to make the results comparable, similar research questions were formulated for the interviews in this study as in a similar study in Swedish local authorities (see Emilsson and Hjelm, 2007). Interviews were performed in four service delivering companies (two insurance companies and two consultancy firms (in the environmental business)) and in four national government agencies (see table 1).

**Table 1. Brief description of the studied organisations.**

Organisation	Number of employees	Year of ISO 14001 certification	ISO 14001 certificate includes all activities	ISO 9001 certified
Consultancy firm 1	2000	1997	Yes	Yes
Consultancy firm 2	4000	1997	Yes	Yes
Insurance company 1	290	2003	Yes	No
Insurance company 2	3300	2001	No	No
Swedish Forest Agency	1200	2002	Yes	No
Swedish Land and real estate registration Agency	2200	2003	Yes	No
Swedish Civil Contingencies Agency	800	2001	Yes	No
Swedish Chemicals Agency	200	2004	Yes	Yes

The main prerequisites for choosing these organisations are that they are all in the service sector and that their main environmental impact is of indirect character. A further important requirement for selection was that the organisations should have mature EMSs, since earlier studies show that indirect environmental impact often is left out in the early years of EMS use (see Emilsson and Hjelm, 2007; 2009). Another criterion for selecting organisations for this study was that they were ISO 14001 certified in order to explore how/whether an externally audited EMS included the indirect environmental aspects. All the organisations in this study had 200 or more

employees and they all, with one exception, had an EMS that covered all activities and departments. The exception was an insurance company that had limited their EMS to the processes of damages on cars and properties. Five of the eight organisations were also certified according to ISO 9001.

The environmental manager (or corresponding) in each organisation was interviewed and in total, eight telephone interviews were performed for this study. The interviews were performed in late 2007 and had a semi structured design in order to allow space for the respondents to express their experiences and thoughts on the given topic. Since the purpose of the study was to get a picture of the organisations' attitudes and approaches to indirect environmental impact, the respondents were asked to reply to the questions as representatives of the whole organisations, in order to avoid personal opinions. All interviews were tape recorded and transcribed, word by word, shortly after each interview occasion. The transcriptions were sent to the interviewees in order to confirm their accuracy and thereby ensure the reliability of the empirical evidence of this study.

Once the results from interviews in the central government agencies and the companies were compiled and analysed, they were compared with the results from the earlier interview study in the local authorities (see Emilsson and Hjelm, 2007).

Since the sample of organisations is limited, this study does not try and generalise on how indirect environmental impact is managed in the service sector in Sweden as such, it rather tries to find different perspectives and possible solutions on how it is and could be managed.

### ***Experiences from managing indirect environmental impact in central government agencies and service companies***

This chapter presents the results from the empirical study for this paper.

#### **Reasons for ISO 14001 certification**

The consultancy firms claimed that the customer needs was the main driver for certification of their EMSs, since a certification was considered as legitimising the environmental competency within the companies. The reasons for ISO 14001 certifications in the insurance companies were management driven in order to strengthen the companies' brands. The central government agencies are obliged, by the National Government in Sweden to implement EMSs, however there is no requirement on certification. Nevertheless, many of the central government agencies have certified their EMSs since it was considered as a natural step in the EMS implementation process. However, only one of the central government agencies, Swedish Chemical Agency, said that they would have worked systematically with environmental issues within the internal organisation even without the government requirement because environmental issues are central to their core activities.

#### **Definitions of indirect environmental impact**

Since the concept of indirect environmental impact is vaguely defined in the standards, it was interesting to study how this term is described in the studied organisations. There are no outspoken definitions of indirect environmental impact in the studied insurance companies. One of them said that they have categorised different areas in which they have an environmental impact and they do not separate direct and indirect

environmental impact. The other insurance company said that they do not talk in terms of indirect and direct environmental impact in the organisation; however the environmental impact is classified as direct or indirect in their EMS. The consultancy firms in this study define their indirect environmental impact as the impact they have on their customers' activities and organisations. They also recognise the indirect environmental impact as their companies' most significant environmental impact. The indirect environmental impact that the consultancy firms generate are considered dependent on what kind of services they deliver to their customers, which means that it varies from mission to mission. The indirect environmental impact was also thought of as depending on the size of the missions and on they have.

There is a widely used definition of indirect environmental impact that is used among several central government agencies (Swedish National Audit Office, 1998; authors' translation):

*Indirect environmental impact is constituted by the authority's activities that affect other actors in a way that the environmental performance from their activities, products or services changes*

The central government agencies in this study have, however chosen different ways to interpret this concept. One of them use a similar definition just described above (which also is rather close to the consultancy firms' definition). Another agency has chosen to define all their activities as giving rise to indirect environmental impact (exercise of authority). In two other agencies there are no specific definitions of indirect environmental impact, but they realise that indirect environmental impact is of utmost importance for their environmental performance.

### **How the organisations manage indirect environmental impact**

The consultancy firms in this study have developed environmental aspect registers for their different types of missions. For example, one of the companies carried out energy efficiency projects. After the projects were completed they went back to their customers in order to measure and follow up how much the customers' had decreased their energy use. Another example of how the consultancy firms manage indirect environmental impact is to give the customer several possible options that fulfil higher environmental standards than baseline standards (such as legislation and established practice) when presenting solutions to their customers. Despite that the consultancy firms had found ways to manage the indirect environmental impact in some areas, they generally experience difficulties in target setting, measurability and follow up of the indirect environmental impact.

The insurance companies agreed on that their most significant environmental impact is restoration of damages, for example when renovating and repairing their customers' properties and belongings. One of the insurance companies had, like the consultancy firms, developed a checklist for environmental requirements/aspects that their partners need to consider when it comes to e.g. renovating buildings and repairing cars. The insurance companies have environmental targets connected to the environmental performance of their partners (there are information efforts attached to these targets).

Like the companies in this study, the central government agencies also mentioned the indirect environmental impact as the most significant for their environmental

performance. Some issues (among many others) that give rise to indirect environmental impact in the central government agencies are advice, directions, decisions, sharing of knowledge. The indirect environmental impact in the Swedish Chemicals Agency is connected to the organisation's activity planning, however there are no environmental targets connected directly to the indirect environmental impact. This agency has a rather integrated approach to their management system where the environmental targets are connected to the quality management targets and the national government's bill of regularization for the agency. This approach, however, was not only related positive experiences, since they felt that it gave rise to vague targets that are difficult to measure and follow up. The turnaround time and information efforts to industry are two examples of their targets that are connected to indirect environmental impact and that are measurable. Apart from these, there are very few environmental targets that are possible to quantify and measure in figures. All central government agencies in this study experienced, like the consultancy firms that the indirect environmental impact is very significant for their activities but also very difficult to measure and follow up. This also makes it difficult for the organisations to estimate whether they improve their environmental performance.

Only one organisation, the Swedish Forest Agency, stated that they do not separate the indirect environmental impact from the direct environmental impact in their EMS. They used to have separate ways of managing these two types of environmental impacts, however, along with the maturity in their EMSs they realised that it is more suitable for their organisation to have an integrated approach to environmental impact.

- When there were separate systems for direct and indirect environmental impact, there was a risk that only the direct environmental impact was focused due to its nature of being more concrete and measurability (and thereby identifying improvements), said the environmental co-ordinator, who also experienced that this approach also has led to that it has become easier for the employees that operate in the EMS.

## ***Analysis***

The differences in how the insurance companies, the consultancy firms, the central government agencies and the local authorities that were studied are strikingly few. Despite that the local authorities in general are less EMS experienced compared to the organisations in this study and despite that the organisations in this study, unlike the local authorities, are ISO 14001 certified, their approaches are rather similar. However the sample of studied organisations is small, which means that it is not possible to make any general conclusions.

The definitions of indirect environmental impact vary slightly from organisation to organisation, however the tenor is more or less the same. There is, in several of the organisations no communicated and widely spread definition of the concept, however there is often a (informal) definition that the environmental co-ordinators use. All organisations in this study as well as those in the local authority study acknowledge indirect environmental impact as their most important.

## **Managing indirect environmental impact**

When comparing the results from the study among local authorities and the results from this study, it can be noted that there are a few differences concerning how indirect environmental impact is managed. As mentioned earlier, in the case of the local authorities, there were two main strategies, where the first and most common strategy

was to exclude the indirect environmental impact from the EMS, at least in the initial phase of the implementation process (Emilsson and Hjelm, 2007). In this study, however, all of the organisations try to include the indirect environmental impact in their EMSs, however it is not always found easy. One reason for this difference could be related to that the EMSs in the organisations in this study generally are more mature compared to the ones in the local authorities. This could possibly be connected to their ISO 14001 certifications. Another possible reason for this difference could derive from the fact that the organisations in this study have far more limited field of activity compared to local authorities, which means that it should be easier to work out ways for managing their environmental impact. Something that local authorities as well as the organisations in this study have in common is that they all acknowledge the difficulties in setting targets, measure and follow up the indirect environmental impact.

Measurability is something that is considered very important in the ISO 14001 standard, however in the revised version of the standard from 2004, it opens up for other ways of follow up by saying that targets and objectives should be measurable where possible (ISO, 2004). Wee and Quazis (2005), on the other hand, consider the measurability as the most important factor for an effective EMS. If there are too vague targets and if they are difficult to measure, how can the organisation estimate whether they have achieved any improvements?

### **Process based management – a possible solution for managing indirect environmental impact?**

The second identified strategy for managing indirect environmental impact in the local authority study was to try and overcome the difficulties with indirect environmental impact by having a more integrated approach to their management of the environmental impact from the organisations (Emilsson and Hjelm, 2007). One of the central government agencies in this study has also chosen this strategy. These organisations focus on the organisation's processes and manage everything with the same approach. Process based management could perhaps be a solution to overcome some of the problems connected to managing indirect environmental impact. As the concept implies, this management approach focus on the organisation's processes. This means that the processes have significant impact on how the activities are designed, how the organisations are managed and how they develop as organisations. The main challenge when having a process based approach to management is to identify the processes, since many organisations have a functions' oriented approach (Ljungberg and Larsson, 2001). The functions' oriented organisation is characterized by rather firm structures (concerning e.g. hierarchy, roles and responsibilities) which give the actors within the organisation a certain feeling of security. In process focused organisations, the organisation is regarded as a social system rather than a technical system (as is the case in function oriented organisations). In a function oriented organisation, it is the functions that have the power to control and manage and develop the organisation and its activities, whereas in the process oriented organisation, there is a strong focus on the competency of the employees and on develop competency resource centres. The process oriented organisation focuses on achieving some kind of target for each of the processes, and in these targets the stakeholder (which could be customers, employees, owners etc, depending on process) is in focus (Ljungberg and Larsson, 2001).

When applying process based management, the measurement and follow up of processes do not necessarily have to be connected to figures and diagrams. The focus is

rather on creating knowledge in the organisation that leads to increased understanding, development and improvement (Ljungberg and Larsson, 2001). Having this approach, it is important to carefully consider what factors that are important for achieving each goal in order to ensure that the measurements give the organisation a hint of where it is heading. This measurement approach could also identify problems in the processes. There is a risk that the organisation put too much effort in the measurement without thinking of what the measurements should be used for. There is a challenge in measuring the right things.

Turing back to the problem with indirect environmental impact, it could be indicated that the organisations still are stuck in the old measurement tradition where they focus on control of an isolated system. If the organisations had a more integrated approach to their environmental management, they could perhaps get a better understanding of what is important to manage and how it should be managed and measured. This could lead to that they find it easier to set more appropriate goals that do not necessarily have to be qualitative. As to the organisations in this study, they referred to the difficulty in designing quantifiable targets and measuring the indirect environmental impact. One reason for this could be that they do not yet have maturity or understanding to see alternative ways of setting targets or that they do not see this in the context of their total environmental impact. However, it could also have to do with that the top management wants figures and diagrams on the performance since this still is the most accepted way of measuring and follow up activities.

There is, however a risk with an integrated process based approach to environmental impact (Emilsson and Hjelm, 2007). The indirect environmental impact could be neglected, meaning that the EMSs still focuses on the direct environmental impact. This means that the indirect environmental impact is managed in theory, but in practice it is mainly the direct environmental impact that is dealt with within the EMS. When there is an outspoken categorisation of the different types of environmental impact, it is more difficult to neglect the indirect environmental impact.

### ***Concluding remarks***

This study elucidates that organisations in the service sector experience difficulties in managing their indirect environmental impact. This is a problem since the most significant environmental impact caused by these organisations can be classified as indirect. Informal issues such as awareness, attitudes as well as the more formal issues such as strategies and policies are of great importance for the organisations when it comes to their environmental performance and their effect on climate change. Having well educated personnel, a well communicated strategy on how these issues should be managed within each specific organisation, there should be a greater chance that the organisations achieve improvements in this area. This could be enhanced by a process approach that set the environmental issues in general and the climate issues in particular in a wider context, that could pave the way for an increased understanding of how and what the organisations do that affect the environment and how and what could be done to improve their environmental performance. Process based management could have a potential of being one (out of several) solution(s) to overcome some of the problems with the management of indirect environmental impact. However, it is important that the organisations identify their processes and in what processes and where that (indirect) environmental impact occurs.

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