

Training and communication in the implementation of environmental management systems (ISO 14001): a case study at the University of Gävle, Sweden

Kaisu Sammalisto ^{a,*}, Torbjörn Brorson ^b

^a *University of Gävle, 801 76 Gävle, Sweden*

^b *International Institute for Industrial Environmental Economics, IIIEE, Lund University, Sweden*

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Abstract

Training and communication are essential elements in the implementation of environmental management systems (EMS). This study is based on two main questions: (i) What methods for training and communication will support the implementation of EMS at a university? and, (ii) How did faculty and staff perceive the training and communication activities? The study includes a literature review, a case study of methods for training and communication, and results of a semi quantitative survey of the perception of training and communication. All activities took place at the University of Gävle (Sweden). The University of Gävle was certified according to ISO 14001 in 2004. Practical experiences from the implementation of EMS in industry were used as reference.

The literature review indicates that training is a key factor during implementation of EMS, and that training may change attitude and behaviour among managers and employees. Similar conclusions can be drawn from this study. The case study, and practical experiences from industry, indicate that similar methods of EMS training and communication can be shared by industry and universities. However, “academic freedom” and “critical thinking” may result in the need for more interactive training methods at a university than in industry. The results of the survey indicate that the training and communication have increased awareness of environmental issues. A deeper understanding of the personal role in the EMS was also observed. It can be concluded that the EMS training and communication team has a demanding task to introduce the concept of indirect environmental aspects at a university. Lecturers and researchers should be convinced that the greening of a college involves more than, for example, reducing the consumption of paper. The main role of EMS at a university should be to focus on indirect environmental aspects, for example, to introduce environmental and sustainability issues in courses and research.

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1. Background

1.1. Swedish governmental EMS directive

As a step to support sustainable development in society, the Swedish Government has since 1996 issued Directives addressed to public agencies requiring the implementation of

environmental management systems (EMS). The Directives declare that public agencies should implement the core elements of the EMS, such as identification of significant environmental aspects and establishment of environmental policy and objectives. ISO 14001 was recommended as a template but the Directives did not require third party certification of the EMS. By the end of 2005 fourteen out of 240 Swedish public agencies had achieved ISO 14001 certification and/or EMAS registration. For different reasons most of the public agencies have, so far, chosen not to apply for the official certificate. Currently they “self-declare” the EMS status in their

* Corresponding author. Tel.: +46 26 648794; fax: +46 26 648828.

E-mail address: kaisu.sammalisto@hig.se (K. Sammalisto).

annual environmental management reports to the Swedish Government. However, there is a growing interest in EMS within the public sector and of roughly 3700 ISO certified Swedish organisations there are an increasing number of municipalities, hospitals and other public organisations. According to the Directives, the systematic approach to environmental issues may later on be expanded to also include other aspects of sustainability, i.e. social, ethical and economic issues [1,2]. EMS at Swedish universities and other public agencies can, in this context, be seen as an example of an important tool in the aims for a sustainable society [3]. Fig. 1 shows the role of a university, or other institution for higher education, in this process.

In two previously published studies the experiences of steps 1 and 2 are reported [4,5]. This study is focussed on step 3 at the University of Gävle in Sweden. The study describes methods for training and communication in the implementation of EMS and the perception of such activities. Step 4 will be analysed in a coming study.

1.2. Roles of training and communication in EMS

The current number of ISO 14001 certificates that have been issued globally is over 100,000 [6]. Many of the ISO 14001 certificates and experiences are found in industrial settings. Practical experiences and a number of studies show that commitment from managers and employees is essential during implementation and maintenance of the EMS [7–10]. It is rather common that organisations try to utilise existing resources within the frame of a limited budget to provide training and communication. Some companies, however, spend a substantial amount of time and resources on education and information. For example, in one global company with about 100 sites, the number of hours per employee per year allocated to environmental, health and safety training was on average around 4.0 [11]. In this same company, during 1998–2004, 86 sites were certified according to ISO 14001. Company statistics showed that during the implementation of ISO 14001, the training hours increased by a factor of 2 to 5 at many of the individual sites. As a result of the training, site managers often reported positive effects from ISO 14001, for example, increased awareness and improved environmental performance [11].

Typical elements of the general training for employees include environmental policy, environmental aspects, company procedures, instructions and non-conformity reporting [12–14]. Employees that have key roles for influencing environmental impacts and the organisation's EMS receive more detailed

training. The training and communication serve at least two purposes: to teach people about company policies and everyday procedures, but also to change the attitudes of individuals and create increased awareness about environmental issues [13,15–17]. A similar approach could be used during implementation of ISO 14001 at a university or other public agency. The strong emphasis ISO 14001 places on training and communication as a means of realising changes and continuous improvement can be found in paragraphs 4.4.2 and 4.4.3 [18].

As indicated above, there are a number of published case studies concerning the implementation of ISO 14001 in industrial companies. Some overviews describing the application of environmental management systems at university settings are also available [19–24]. However, methods and perceptions of environmental training and communication in association with implementation of EMS, in industry and universities, are discussed very little in the literature. The following quote concerning occupational health and safety can serve as a starting point for this study: “Various laws and regulations require the dissemination of occupational health and safety information but little is known of the effectiveness of such efforts” [25].

1.3. Objective of the study

The knowledge about implementation and certification of EMS (ISO 14001) at universities is rather limited. The overall objective of this paper is to focus on the role of training and communication in the implementation of an EMS. The perception and effectiveness of the training is also addressed. The study is based on two main questions:

- What methods for training and communication will support the implementation of EMS at a university?
- How did faculty and staff perceive the training and communication activities?

2. Methods

The study is based on the following activities:

- A literature review concerning effects of training in the implementation of EMS (ISO 14001) in industry and other organisations.
- A case study concerning training and communication in the implementation of EMS at the University of Gävle.
- A survey among staff concerning perception of training and communication during implementation of EMS at the University of Gävle.

The approach of the study is practical, positivistic and quantitative, although some qualitative elements are present. A significant input comes from the authors' experiences with the implementation of EMS in several industrial companies. The principal author has also previously studied EMS implementation in Small and Medium Sized Enterprises [26] and Swedish universities and co-ordinated, as Dean for Environmental Management, the EMS implementation at the University of Gävle.

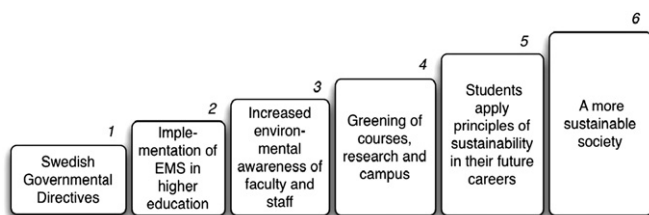


Fig. 1. The role of EMS in higher education in the steps towards a more sustainable society. Source: Sammalisto and Arvidsson [5].

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