STUDIA I PRACE WYDZIAŁU NAUK EKONOMICZNYCH
I ZARZĄDZANIA NR 4

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EMS AS A TOOL FOR CONTINUAL IMPROVEMENT IN A BUSINESS ORGANISATION

Introduction

Undertaking voluntary environmental obligations becomes a significant element in the development strategies of organisations, which supports pro-environmental orientation of management and more effective (because prospective) solutions. This indicates that industries are engaged in implementation of sustainable development concepts through, inter alia, membership in various programmes like Cleaner Production Programme, Responsible Care Programme, etc., replacing "dirty" technologies with "cleaner" ones and implementing new tools like environmental management systems (EMS): the EU Eco-Management and Audit Scheme (EMAS) or the ISO 14000 series of international standards.

Environmental management system in conformity with ISO 14001 in an organisation

Environmental management systems are mostly derived from quality management systems. Popularity of the ISO 9000 series resulted in an idea of transferring the very essence of the ISO 9000 series concept (an organisation should plan and control the whole scope of activities that influence its products

quality, and aim at continuous improvement of the quality) into the field of environmental performance (commitment towards continual improvement of environmental performance of an organisation) (Pochyluk, Szymański, Tonderski, 1998, p. 22).

Among all the published ISO standards concerning systemic approach to environmental issues, ISO 14001 is the most popular. The standard has an international character, which means that it can be applied in countries having different environmental legal systems (however it may not be against any national law), and different environmental, geographical, cultural or social conditions (Foltynowicz, Urbaniak, 1997, p. 17). Therefore the standard does not specify exact requirements, which enables its application in many countries and in diverse conditions. ISO 14001 specifies a system, under which organisations of various types (production, service, trade, *etc.*) and sizes implement environmental management, but it does not itself state specific environmental performance criteria, thus allowing to accomplish environmental objectives set out by organisations for themselves. The Foreword to ISO 14001 states, that through this standard businesses have been given elements of *"an effective environmental management system"* leading to accomplishing both *"ecological"* and *"economic objectives"*.

Each organisation works out its own individual way of EMS implementation. ISO 14001 does not specify the extent of its application – it can be applied in a whole organisation, or just in some areas, departments, units. It can be applied to internal or external objectives of an organisation. Instead, the standard obliges to fulfilling specific requirements, such as:

1. a commitment to continual improvement and prevention of pollution,
2. a commitment to comply with all relevant environmental legislation and regulations,
3. establishing and maintaining procedures to identify the environmental aspects of the organisation's activities, products or services, and ensuring that the aspects related to these significant impacts are considered in setting its environmental objectives,
4. implementation and maintaining of a management system that would enable achieving its environmental objectives and targets.

The standard defines an environmental management system as "the part of the overall management system that includes the organisational structure, planning activities, responsibilities, practices, procedures, pro-

cesses and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy" (EN ISO 14001:1996; 14001:2004)

The objective of implementing EMS in accordance with ISO 14001 is a continual improvement of environmental performance effectiveness. The system's operation is based on a commitment toward improvement, derived from the philosophy of Total Quality Management (TQM), and on continual increasing of effectiveness. Reasons for implementing the standard may be internal (*i.e.* conformity to emission standards, reduced payments of environmental charges) or external (*i.e.* joining an environmental competition with other businesses – better position in the market, improvement of competitiveness, attempt to meet expectations and tastes of consumers). In practice, through implementation of ISO 14001, an organisation endeavours at achieving better effectiveness of its environmental performance and continual improvement of the performance, simultaneously having regard to its fundamental interest and objectives and environmental legislation, as well as all the other relevant regulatory requirements (Gruszka, 1997).

The organisation that implements an EMS according to ISO 14001 intends, in the first instance, to "support environmental protection and prevent pollution in balance with socio-economic need"(EN ISO 14001:1996, Introduction, p. 3). Therefore it should focus on the aspects of their environmental impact which it can control and over which it can be expected to have an influence. Therefore at the stage of planning, it should carefully identify all significant environmental aspects[1].

It was a system approach that first contributed to full integration of an environmental management system with an overall management system in an organisation (Kośmider, Malik, 2000). The approach aims at subordinating everything (from organisational structures to control functions) to environmental principles. It is even recommended to coordinate such elements of an EMS as: structure, responsibilities, procedures, resources for implementation of environmental policy, tasks and objectives, with all the other functions of an organisation. The basis of an EMS is aiming at a continual improvement in the environmental performance of an organisation, which can be attained only

[1] Environmental aspect, according to EN ISO 14001:1996, is an element of an organisation's activities or products or services that can interact with the environment; a significant environmental aspect has or can have a significant environmental impact.

through fulfilling subsequent objectives of its environmental policy. Important is, that all employees should be involved in the process aimed at improving the organisation's environmental performance. Inappropriate is, when full responsibility lies with one operating unit in the organisation or, worse still, with one person.

This is a long-term activity that aims to increase the market attractiveness of products and services, resulting from reducing adverse environmental impact of production, service and consumption activities. Rather them being a one-time activity, this is a process of a continual search for methods that would reduce the organisation's environmental impact and improve the organisation itself and its product.

Requirements of ISO 140001 determine that an organisation implementing an EMS according to the International Standard should ensure more then just legal compliance. Such an organisation needs to identify significant environmental aspects of its activities, products or services, as well as set and meet environmental objectives aiming at continual improvement of the EMS, and consequently at increasing the system's effectiveness. Therefore in business organisations, three main activity areas have been distinguished within the environmental management systems operating in compliance with ISO 14001: **ecology of production, product ecology**, and **management**.

The **ecology of production** area concerns significant environmental issues connected with processes and activities in the organisation. It refers to all operations and activities regarding technical optimisation of production inside the organisation. The measures undertaken in this area are usually inside-oriented and refer to: production, facilities, infrastructure and recycling of raw materials.

The **Product ecology** area refers to environmental product management, which is based on optimization of environmental aspects of products or services, as well as development towards eco-innovation of products. The activities may be intended to minimize the risk associated with a product throughout its life-cycle, and also to produce desired market effects (outside-oriented). Environmental product management needs to be enhanced, and should also refer to areas: research and development, product management, marketing and distribution.

Management covers processes of management in the organisation. Ecology of production and product ecology become objectives of management

through transformation of relevant management activities and organisational structures.

Analysis of an EMS performance in a business organisation

While evaluating performance of ISO 14001 compliant environmental management systems, an interesting question is, what importance organisations attach to each of the three distinguished areas: **"ecology of production"**, **"product ecology"** and **"management"**, and in which one they allocate most resources. As an EMS places special significance on the commitment to continual improvement, interesting is what aspects organisations plan to focus on in their future activities within the areas.

The study was conducted on chemical entities[2], which are still regarded to be associated with activities having significant adverse environmental impacts. The research revealed that a half of the investigated entities allocated most resources in two areas: **"management"**, and **"product ecology"**, and they regarded the two areas to be the most important. However, it can not be asserted that the **"ecology of production"** area was neglected. Regarding summary high and medium resources involvement in the organisations, their allocation in the ecology of production area amounted to 100%, followed by the management area (90%), and finally by the product ecology area (70%). From the above we can conclude, that generally most resources were allocated in the **"ecology of production"** area, as illustrated by Fig. 1.

[2] This research project was financially supported by the State Committee for Scientific Research (Poland) in years 2002–2004. The study was conducted on Polish chemical entities. Questionnaires were sent to all chemical entities having an ISO 14001 certified EMS. 83% of the entities have filled and returned the questionnaires.

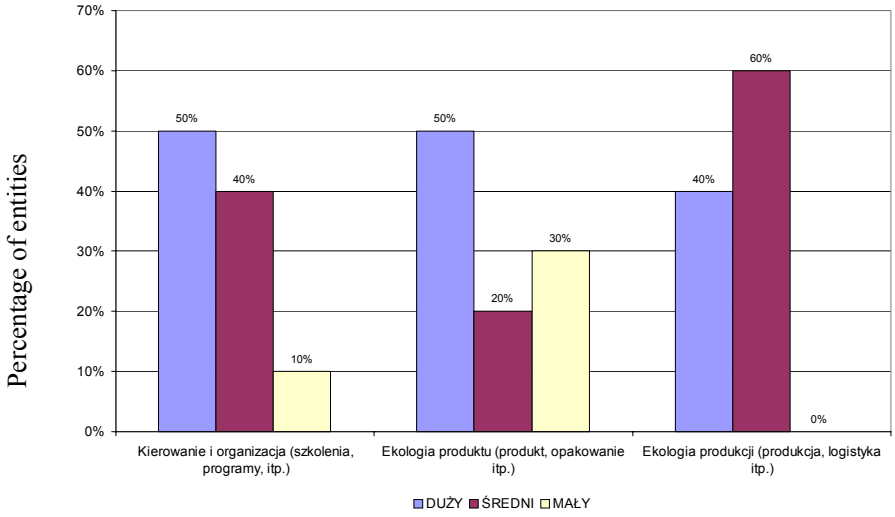

Fig. 1. Main activity areas within the ISO 14001 compliant EMS in the investigated chemical entities
Source: author's own compilation based on the results of author's own studies.

The investigated organisations planned to involve more resources for future activities, that would increase importance of all the three areas. A significant growing tendency to enforce the **"ecology of production"** area has been observed, however similar tendency has also been observed for the other two areas. It is difficult to evaluate, to what extent the assessments were realistic, and to what extent they were merely wishes expressed by the top management. Nonetheless, the direction of activities planned for the future was satisfactory. Assessments of future resources allocation to distinguished areas of activities in the investigated organisations are illustrated by Fig. 2.

Within the distinguished areas the respondents undertook specific activities, having attached to them various importance. They also planned to undertake new activities and enhance those, on which, in their opinion, they should place more emphasis.

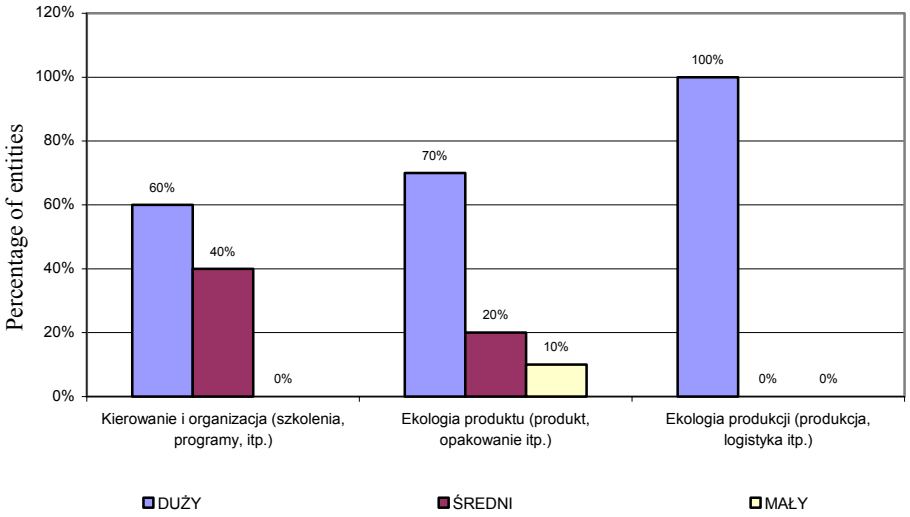

Fig. 2. Main future activity areas within the ISO 14001 compliant EMS in the investigated chemical entities.
Source: author's own compilation based on the results of author's own studies**.**

In the **"ecology of production"** area, all the chemical entities attached most importance to a systematic data collection and registration of data on raw materials, resources and energy. In their plans for the future these activities were also regarded to be the most important within this area. Simultaneously they attached much less importance to having ISO 14001 compliant suppliers. They intended to increase the importance of this requirement, however it would still remain less important then other activities. Attention should be paid, that in most investigated entities, activities undertaken since the EMS implementation had been completed not wholly but only partially. However, taking into consideration also planned activities within this area, the situation has changed for the better.

Another area examined for present and planned environmental activities was the **"management"** area. In the opinion of the responders, their most important activities undertaken within this area were: integration of environmental issues into overall aims and objectives, as well as employee training and

employee environmental education. The above mentioned activities had been undertaken by 80% of investigated entities. This is undoubtedly a consequence of the fact that ISO 14001 requires appropriate training of employees. A worrying fact is, however, that auditors often approved situations when the requirement of training had been fulfilled only partially.

For the future, all the investigated entities had plans of enhancing activities within the "management" area. Most resources were to be allocated for full integration of environmental issues into overall plans and objectives of the entities. The less attention was and would be given to comparisons of the organisations' own environmental performance with achievements of their competitors.

Within the **"product ecology"** area, the entities placed special significance on including environmental criteria in their financial plans. They regarded it also the most significant future activity in this area. While the less importance they attached to activities aiming at market analysis focused on the environmental performance of their customers and competitors.

Conclusions

An ISO 14001 compliant EMS operating in an organisation should help to reduce its adverse environmental impact or, in other words, to meet its both environmental and economic objectives (*i.e.* savings resulting from lower environmental fees). An EMS places special significance on a commitment to continual improvement. Within the systems operating in the investigated entities three main areas of present and planned activities have been distinguished for the purpose of this study: "ecology of production", "management", and "product ecology". The study revealed, that chemical entities allocated most resources for "ecology of production", and somewhat less for: "management" and "product ecology". The investigated entities planned to enhance significance of all the three areas, however most resources they planned to allocate for "ecology of production".

References

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Summary

At the present stage of economic development, an effective management of a business organisation seems to be impossible without taking account of various environmental aspects. Therefore including environmental issues in the guidelines for the organisation’s performance is necessary. Pro-active approach to environmental protection needs to be one of the principles integrally linked with the high-level goal of the organisation – its long-lasting existence. Therefore all costs of its environmental performance must be justified by benefits, according to its system of aims (See: Dyllick, 2000, p. 4). This can be achieved by a voluntary implementation of environmental

management systems (EMS): the EU Eco-Management and Audit Scheme (EMAS), and the ISO 14000 series of international standards, of which ISO 14001 is the most popular.

Nowadays, business organisations act in the conditions of increased competitiveness, so continual improvement in their performance is necessary to maintain or increase their share in the market. To a great extent, the goal can be achieved by implementing environmental management systems, based on a commitment toward improvement derived from the philosophy of Total Quality Management (TQM).

The author makes an attempt to indicate possibilities of improvement within the framework of an EMS operating in an organisation.