



Analysis of Benefits and Barriers in Implementing the Eco-Management and Audit Scheme in Selected Organisations

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1. Introduction

Proper management of a modern enterprise should lead not only to economic but also to ecological and social effects. Implementation of the principles of sustainable development at the level of each enterprise is very important because it counteracts the excessive burden on the environment on the local and global scale. (Lee & Lam 2012, Szyszka & Matuszak-Flejszman 2016, Venkatesh 2010.) The growing importance of environmental protection in the economy is the result of the growing ecological awareness of society. (Szyszka & Matuszak-Flejszman 2017). This awareness translates into pressure exerted on business entities and administrations (Pawłowski 2009, Harris et al. 2001). The results of the research indicate that it is very important to popularize environmental management systems. Implementation of such systems in companies has an effect on products, processes and green supply chain management. (Prajogo, et al. 2014). However, it is important to point out that the effective implementation of environmental management systems within the company requires complementing organizational capabilities and resources to implement proactive environmental strategies (Martín-de Castro et al. 2016). The Eco-Management and Audit Scheme (EMAS) is an environmental management system in which various organisations like enterprises, institutions and offices can participate voluntarily. Institutions such as hospitals are also increasingly implementing EMAS. The purpose of EMAS registration for hospitals is to combine quality of services with environmental protection. (Seifert 2018; Lizzi et al. 2017). The main assumption of the system is to distinguish those organisations that go beyond the scope of minimum compliance with the regulations and constantly improve the effects of their environmental activities (Mazzi et al. 2016). The basic principles of the

system are set out in the Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS), also referred to as EMAS III. It is worth noting that in recent years there has been a revision of the Regulation repealing the annexes (Commission Regulation (EU) 2017/1505 of 28 August 2017 amending Annexes I, II and III to Regulation (EC) No 1221/2009 of the European Parliament and of the Council on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS) and Commission Regulation (EU) 2018/2026 of 19 December 2018 amending Annex IV to Regulation (EC) No 1221/2009 of the European Parliament and of the Council on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS). The issue of companies' impact on the environment and the implementation of various activities for its protection is and will be important, e.g. promoting the implementation of EMAS system, which was emphasised – among others – during the UN Global Climate Summit – COP24 in Katowice in 2018. The involvement of individual countries in the promotion of EMAS is diverse, as evidenced by the number of organisations registered in the system. The leaders in the number of organisations registered in EMAS per population are: Austria, Spain, Germany, Denmark and Italy. In recent years, there has been a dynamic growth in registered organisations in some countries, in others – a significant reduction. Although the EMAS system has been operating in Poland since May 1st, 2004, it is not implemented on a large scale in Polish enterprises. This state is not the result of the lack of environmental awareness of the organisations' management but refers to the barriers and difficulties in implementing EMAS. Implementation of the system involves additional costs, preparation of documentation, often reorganisation of the enterprise, etc. (Bernardo et al. 2015). In spite of these difficulties, however, Polish companies decide to implement this system concentrating on its specific benefits (Ociepa-Kubicka 2015).

The aim of the article is to indicate, analyse and assess the benefits and most important barriers in the EMAS implementation process in selected Polish organisations. The article was prepared on the basis of the results of a survey addressed to enterprises which had implemented EMAS, and literature review.

2. Materials and methods

For the purposes of this publication a survey was carried out (the questionnaire was conducted in 2018/2019). The research aimed at obtaining information on the benefits and barriers of the functioning EMAS environmental management system in various organisations located in Poland. The following issues were analysed:

- factors that were the reason for implementing the EMAS system,
- difficulties that occurred in organisations when implementing the system,
- incurred implementation costs,
- external and internal benefits arising from the implementation of EMAS,
- the duration of the system implementation,
- analysis of the possibilities of the implementation costs reimbursement.

The research was based on a written survey form to be filled in by the organisations. The questionnaire was prepared by the author of the publication. It was sent via e-mail to 50 organisations (these were service-providing and production companies) that had implemented the EMAS system. 17 organisations returned comprehensively completed surveys which could be analysed for the research purposes. The questionnaire comprised 7 closed-ended questions in which the respondents were to indicate the most significant factors among the answers provided. There was also an open-ended option of including “other factors” as own answer. The survey was anonymous. It asked about the number of employees in the organisation: less than 10 employees – 1 organisation, between 10-50 employees – 2 organisations, 51-250 employees – 9 organisations, above 250 employees – 5 organisations.

3. Results and discussion

Most of the surveyed organisations had already operated other EMS systems, e.g. the ISO 14001 standard or the international ISO 9001. In order to identify the factors that led the respondents to implement additional EMS – EMAS – they were asked to highlight the most significant ones that determined their decisions of EMAS implementation (Fig. 1).

The surveyed enterprises implementing the EMS were primarily focused on: aiming at the improvement of the image of the company and its competitiveness on the market (11 indications) and the will to improve the condition of the environment (8 indications). Furthermore, the studies published by other authors have indicated that the organizations implementing EMAS are guided by factors such as image improvement or gaining a competitive advantage on the market (Morrow & Rondinelli 2002). The enterprises implemented EMAS also in order to expand their current quality management systems with EMAS (7 indications) and to raise ecological knowledge and awareness of the employees (7 indications). The outcome proves the growing ecological awareness of entrepreneurs. Smaller importance was attributed to the strive to improve competitiveness and innovation (5), the desire to adapt to the expectations or requirements of recipients (4) or to facilitate the acquisition of additional funds (2). The organisations

also pointed to the fact that the reason for introducing EMAS was to conduct a better dialogue with the public and to set an example to the beneficiaries (2 indications). In order to determine the basic difficulties, the enterprises had to face, the survey asked to identify those the most crucial for the respondents (Fig. 2).

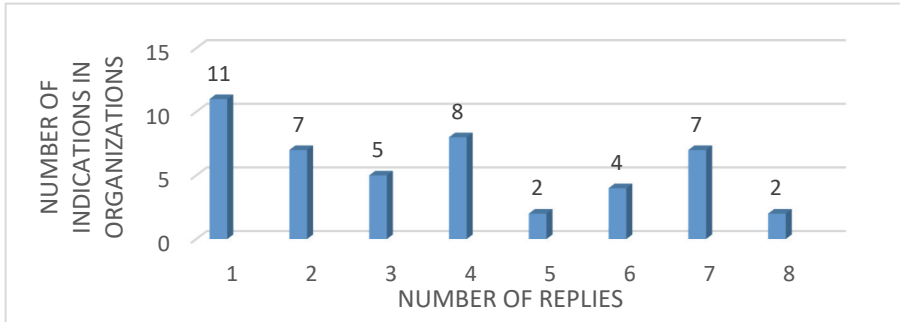


Fig. 1. Cause(s) of EMAS implementation in company

1. aiming at the improvement of the company's image and competitiveness in the market
2. willingness to expand the functionality of the quality management system with EMAS,
3. aiming at the improvement of competitiveness and innovativeness of the company,
4. aiming at the improvement of the condition of the natural environment (reduction of energy and raw materials consumption, reduction of emissions, etc.),
5. facilitating the access to the financial means, e.g. from various funds designated for environmental protection or more beneficial loans,
6. desire to adapt to the expectations or requirements of the customers and/or the market,
7. aiming at the raise of ecological knowledge and awareness among employees,
8. other.

The greatest difficulty for the respondents was the substantive and organisational aspects of the implementation (9 indications), as well as the time of preparations and implementation (8 indications). Serafin Ch. (Serafin 2018) pointed to difficulties related to the preparation of documents and the correct analysis of legal acts.

Also, the limited knowledge of the implementation process was pinpointed as a hindrance (6 indications). In 4 cases, the problem was the resistance of the employees against the planned changes. Another barrier discouraging organizations to implement EMAS is the fact that, as underlined by the authors, there is no or only minimal support from the public administration for companies that use EMAS (initiatives to promote the company, increase the possibility of getting discounts, etc.) (Kivi & Gurvits 2017; Merli et al. 2014).

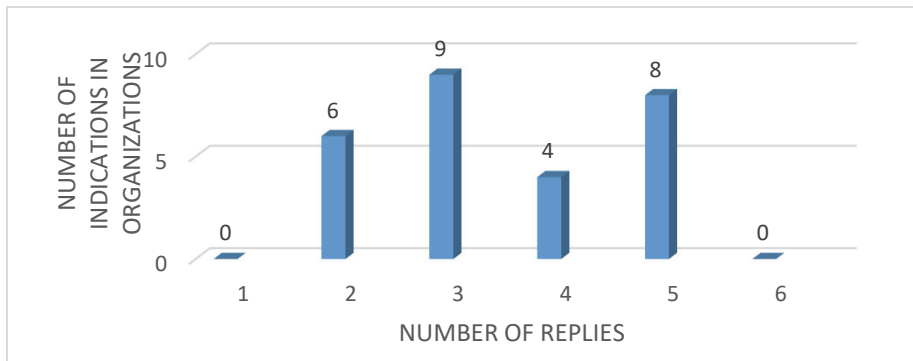


Fig. 2. Difficulties encounter during EMAS implementation

1. financial problems – additional costs related to the implementation of, e.g., equipment, training, technologies, certification fees, etc.
2. limited knowledge about the rules of the system implementation,
3. substantive difficulties and organisational problems with the necessary documentation,
4. limited knowledge of the staff concerning the benefits of the implementation or resistance to the implementation of changes,
5. time-consuming preparation and implementation,
6. other.

In one of the questions, the respondents were asked to indicate the period they needed for the implementation of the system in their organisations. Majority of answers indicated 6-12 months (9 indications), and 6 months (5 indications). There were 3 organisations which took 12-24 months to implement the system.

Implementation of EMAS generated additional costs. Many authors have emphasized the fact that the costs associated with the implementation of EMAS systems in organizations represent a serious barrier for them.(Alvarez-Garcia & RioRoma 2016; Daddi et al.2017; Del Brio et al.2001; Iraldo et al.2009; Kivi &Gurvits 2017; Merli et al.2014; Seifert 2018).

They also indicate that high costs of implementing and maintaining the system are, among others, the reason for resignation from the EMAS system (Preziosi 2016).

The survey asked which expenses were the greatest (Fig. 3).

The most important were the costs of certificates, audits (12 indications) and costs incurred for the environmental protection investments (5 indications). Lower importance was assigned to the costs of staff training or the costs of company modernisation and technological advancement. The survey asked in what period the incurred costs could be reimbursed. Most of the organisations found it difficult to determine such time (11 indications), 4 organisations selected 5 years,

2 organisations – 10-20 years. Implementation of the system represents an investment for enterprises, bringing measurable results and numerous benefits. Internal benefits are related to financial results and the effectiveness of business operations, while external benefits had an impact on shaping the relationship between the internal environment and the competitive environment of the enterprise (Fig. 4, 5) (Brzeszczak 2018).

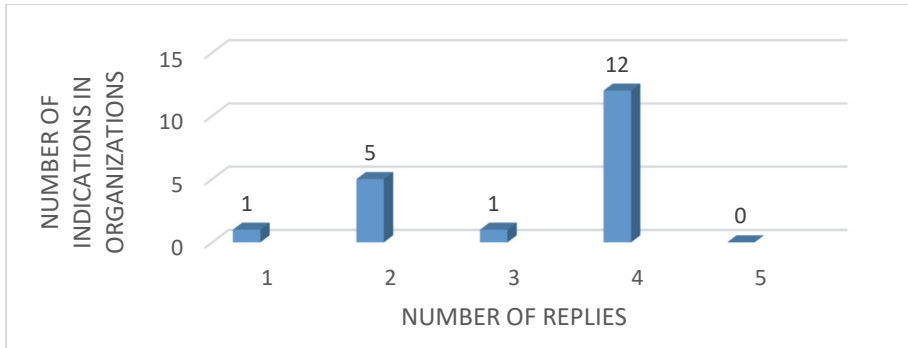


Fig. 3. Implementation expenses in company

1. costs of enterprise modernisation, investments, changes in technology,
2. increase in the environmental protection investments,
3. costs of staff training,
4. costs of certification and audits,
5. other.

The survey asked for the most significant internal benefits resulting from the implementation of EMAS.

The most important for the surveyed companies was achieving compliance with the regulations and raising environmental protection standards (16 indications), improving the functioning of a company operating according to the EMAS concepts (12 indications) and increasing ecological awareness of employees (9 indications). In the studies of other authors, the fact of meeting the regulations was also very important and perceived as one of the most substantial benefits. (Hillary 2004; Tesa et al. 2018). Montobbito and Solito pointed to another advantage: the adoption of EMAS promotes greater innovativeness at company level (Montobbito & Solito 2018).

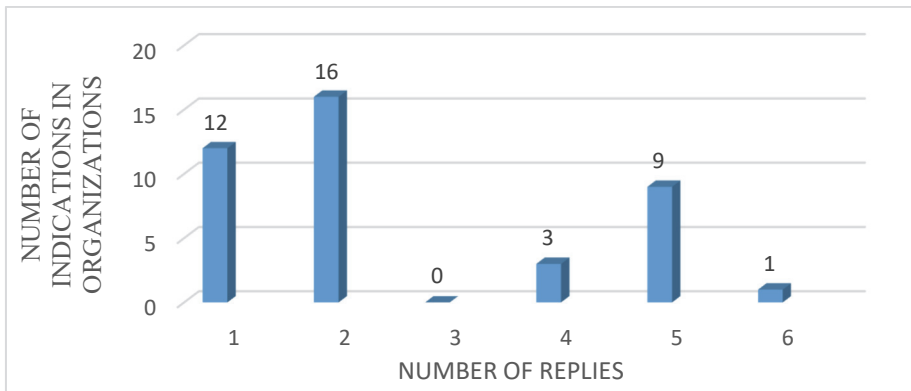


Fig. 4. Internal benefits stemming from EMAS implementation

1. improvement of the functioning of an enterprise operating according to the EMAS concept,
2. obtaining the compliance with regulations, raising the standards of environmental protection,
3. greater availability of more beneficial bank loans and funds from various sources,
4. improvement of the economic effects of the company's operations by the reduction of production costs (materials, natural resources, increased sales) and reduction of the current costs of environmental protection,
5. increase of the environmental awareness among the employees,
6. other.

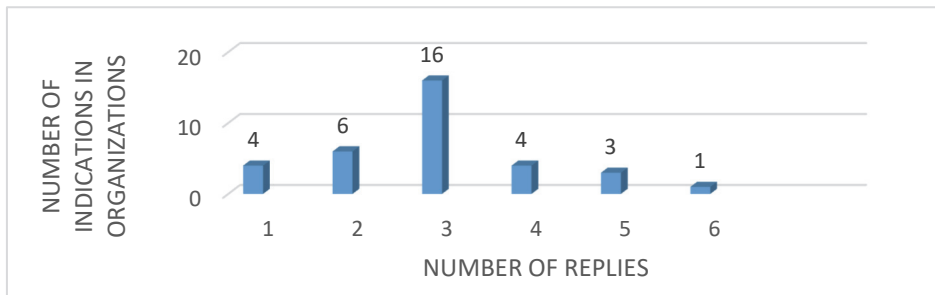


Fig. 5. External benefits stemming from EMAS implementation

1. increase of the company's attractiveness for potential clients,
2. increasing competitiveness of the company in the market,
3. better, pro-ecological image of the company,
4. improvement in the environment and ecological safety of the company's activity,
5. increase in trust and improvement of relations with the local community,
6. other.

The improvement of the economic effects of the organisation's activities was of lesser importance (3 indications), while none of the surveyed organisations indicated greater access to better loans and obtaining additional funds as benefits. As additional asset, however, the surveyed pinpointed the ongoing monitoring of the environmental objectives. Enterprises also indicated external benefits resulting from the implementation of the EMAS system.

In the opinion of the surveyed organisations, the implementation of the environmental management system contributed to a better pro-ecological image of the company (16 indications) and to the increase of company's competitiveness on the market (6 indications). To a lesser extent, the surveyed enterprises observed the increasing attractiveness for clients (4 indications), the improvement of the environment condition and ecological safety of the run activities (4 indications), or the increase of trust and improvement of relations with the local community (3 indications). Furthermore, in a study by Martín-Peña et al., good relations with the customers are seen as important benefits of the implementation of EMAS. (Martín-Peña et al. 2014). Furthermore, Schmidt-Räntsch et al. show in their study that minimising environmental problems is also a very important factor seen as a benefit. (Schmidt-Räntsch et al. 2012).

4. Conclusions

Socio-economic development in the modern world is related to ever-lesser access to natural resources, environmental pollution and climate change. Thanks to the rational use of environmental resources, we counteract the excessive burden of all the natural environment elements. Responsible organisations, adjusting to these limitations, should rationally manage the resources, support the materials recycling process and reduce the carbon footprint throughout the entire life cycle of the product. Each of the operating organisations is co-responsible for achieving the goals of sustainable development. Production companies play particularly crucial role. Considering social and environmental issues of their activities, at every stage of the supply chain, they can set new pro-ecological trends in the sectors in which they operate.

That is why it is so important to invest in fulfilling commitments concerning the goals of sustainable development. The presented research results allow to conclude that they comprise formalised management systems, in particular the EMAS environmental management system.

Enterprises deciding to implement the EMAS system were primarily interested in the improvement of their image and competitiveness on the market, but also the enhancement of the state of the natural environment (the reduction of energy consumption and emissions, etc.). Assessing the internal benefits resulting from the implementation, the EMAS system most often indicated obtaining the

compliance with the law, the increase of the standards of environmental protection, the company's improvement of its functioning and the increase of the environmental protection awareness among the employees. Also, the analysis of the external benefits of the EMAS system implementation included the companies' pursuit of a better, environmentally-friendly image of their operations. The answers indicate the growing ecological awareness of and responsibility for the state of the environment among the company's management. The organisations did not indicate the economic aspects as the most important in relation to the EMAS system implementation and operation.

During the implementation of the environmental management systems the surveyed entities encountered a number of difficulties, for example: limited knowledge about the system implementation principles and the time required for the preparation and implementation process. Most enterprises needed around 1 year for the EMAS implementation. Moreover, the companies struggled with the processing of the additional documentation. This indicates insufficient knowledge related to the implementation process and the necessity of adequate staff training. Advisory services to develop a pro-ecological systems implementation programme should become more common. The incurred costs turned out to be a significant problem. The examined companies listed the following as the most expensive elements related directly to EMAS implementation: certification, external audits and costs incurred for investment activities related to environmental protection. The mentioned organizational difficulties and costs of EMAS implementation may be potentially discouraging for new entrepreneurs. Even though the system is more and more popular and appreciated world-wide, it turns out that it is a struggle to launch. It is therefore proposed to encourage companies that already have EMAS to share their experience with other companies, which can make it easier to implement this system in other companies. Most organisations could not define the time in which the incurred EMAS expenses would be reimbursed. Lack of specific financial calculations may be the cause of companies' discouragement from further activities and unwillingness to implement and maintain the EMAS eco-management system.

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Abstract

The development of enterprises in the 21st century must involve care for the natural environment. Owing to the introduction of ecological activities, entrepreneurs gain in the economic, ecological and social sphere. That is why it is so important to implement and disseminate ecological management in companies. Although undoubtedly the environmental awareness of entrepreneurs is increasing, there is a lack of much interest in implementing additional systems such as the EMAS Eco-Management and Audit Scheme. The purpose of the present study was to determine the impact of a functioning EMAS management system on the activities of organisations that have implemented this system. The basis for the evaluation was the results of research and a review of domestic

and foreign literature. The results of the research show that the organisations undertook to implement EMAS observing a number of benefits. However, at the implementation stage, there were numerous, not always foreseen, difficulties which extended the planned implementation period. The conducted research can be the basis for the development of new procedures facilitating the implementation of the systems in the enterprise. They can provide valuable information for various organizations supporting and disseminating the development of pro-ecological management.

Keywords:

environmental management system, EMAS, ecology, management

Analiza korzyści i barier przy wdrażaniu System Ekozarządzania i Audytu w wybranych organizacjach

Streszczenie

Rozwój przedsiębiorstw w XXI wieku musi wiązać się z troską o środowisko naturalne. Dzięki wprowadzaniu działań ekologicznych przedsiębiorcy zyskują na płaszczyźnie ekonomicznej, ekologicznej i społecznej. Dlatego tak ważne jest wdrażanie oraz upowszechnianie zarządzania ekologicznego w firmach. Choć niewątpliwie świadomość ekologiczna przedsiębiorców wzrasta obserwuje się brak dużego zainteresowania wprowadzaniem dodatkowych systemów jak System Ekozarządzania i Audytu EMAS. Celem pracy było określenie wpływu funkcjonującego systemu zarządzania EMAS na działalność organizacji, które wdrożyły ten system. Podstawą do oceny były wyniki badań oraz przegląd literatury krajowej i zagranicznej. Wyniki przeprowadzonych badań wskazują, że organizacje podejmowały się wdrożenia EMAS widząc szereg korzyści. Jednak na etapie wdrożenia wystąpiły liczne trudności, na które nie zawsze były przygotowane i które wydłużyły planowany okres wdrażania. Przeprowadzone badania mogą być podstawą opracowania nowych procedur ułatwiających wdrożenie systemów zarządzania środowiskowego w przedsiębiorstwie. Mogą stanowić cenną informację dla różnych organizacji wspierających i upowszechniających rozwój proekologicznego zarządzania. Tematyka artykułu jest ważna i aktualna ze względu na konieczności ograniczania wpływu organizacji na środowisko i wdrażania zasad zrównoważonego rozwoju.

Słowa kluczowe:

systemy zarządzania środowiskowego, EMAS, ekologia, zarządzanie