



The Role of the Eco-mapping Method in the Competitiveness of SME's

Balázs Hohmann

University of Pécs, Hungary

Consciously for Our Environment Association (Pécs, Hungary)

hohbalazs@gmail.com

Abstract

The eco-mapping method is one of the graphic, less sophisticated environmental management tools.

The paper and the presentation highlight that eco-mapping, furthermore, the evaluation and measurement process connected with it, are suitable for implementing environmental activities expected from micro-, small and medium-sized enterprises as well as organizations of the same size acting in Hungary and all around the world, which, at the same time, could mean the basis of and the very first step toward the subsequent environmental management system of these organizations.

Applying this method, the organizations will be able to achieve environmental savings allowing them to successfully decrease their operating costs and increase their competitiveness, which is a major advantage in the case of market entry and globalized business processes.

Key terms: Environmental management, environmental performance assessment, eco-mapping method, graphic assessment tools



Introduction

In the second half of the 20th century, environmental protection and preservation were given an increasingly important role at every level of decision-making (Pepper, Perkins & Youngs, 1984).

Environmental performance evaluation and the methods of assessment were designed after the Second World War (Thoresen, 1999), and they can help the leadership of organizations to motivate their staff and to quantify (qualify) the main environmental issues and problems of the enterprises (Kolk and Mauser, 2002). The advanced ways of evaluation methods clearly appeared in the industrial field (e.g. Winter-model at a pioneer German company, the Ernst Winter & Sohn GmbH (Winter, 1998).

One kind of EPE is constituted by graphic methods (Tóth, 2003), which have some extra functions beyond the fundamental role of EPE models: these methods may help to visualize important problems and tasks and will shape the attitude of the staff (Hohmann, 2013).

One kind of EPE is eco-mapping, which was designed by the Belgian business expert, Heinz-Werner Engel in the 1990s (Engel, 2000). This method was introduced in Hungary at the end of the 1990s (Tóth, 2003).

Method

Based on the original form of this evaluation method, the main environmental problems caused by the operation of enterprises/organizations arose in only one or a few well definable places of the plant/office of the economic operators.

If we are able to find these places/processes in the operation of organizations, environmental issues will be manageable through a work programme which deals with the priorities and the less important issues alike.

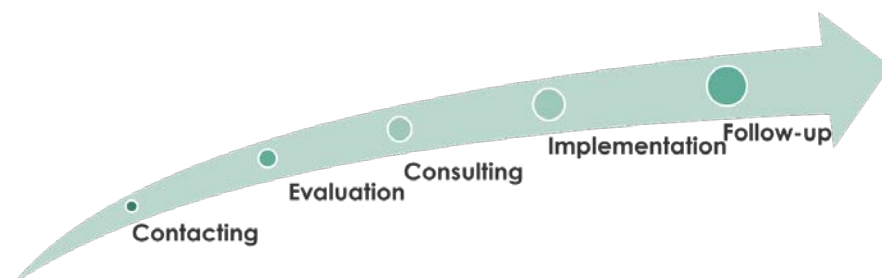


Figure 1 – The main process of the eco-mapping method (constructed by the author)

As a rule, the process of eco-mapping begins with the stage of establishing contact, which includes choosing an organizational coordinator, who will manage and control the whole process of eco-mapping. Based on our experiences (Engel, 2000; Engel 2006; Koroljova – Voronova, 2007; Tóth, 2007; Hohmann, 2013), the significant part of enterprises request the help and consulting services of an outside entity generally to take the initial steps.

The second step is the on-the-spot examination of operation. This is a crucial point of the process, this paper deals with it in more detail later on.

When the inspection has finished, the expert of the eco-mapping method consults with the leaders of the enterprise about important environmental problems, best practices and priorities.

This stage is followed by the steps of implementation activities and finally, there is a follow-up, after one year. This cycle can be repeated many times, and this will improve the organization's operation, processes, etc.

The main element of this method is the eco-map, which is a bird's-eye view of the layout of the business premises or offices of the enterprises.

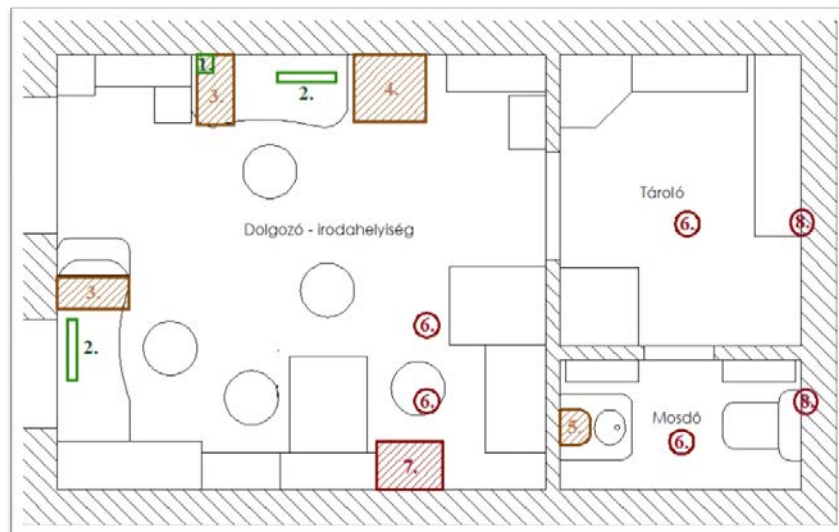


Figure 2 – One of the eco-maps in the Hungarian assessment project (constructed by the author)



In this eco-map the leader of the on-the-spot inspection may indicate the best practices, the problems and other important factors, in relation to the following seven important fields of organizational environmental performance:

- local environment
- energy (electricity consumption)
- water
- waste management
- air (air pollution)
- threats
- soil and storage activities

The number or subject-matter of eco-maps may vary in the practice of different authors and auditors, but the main version of the method applies the above factors.

After the end of the on-the-spot survey, the leader of the process will evaluate the results in the assessment paper, where they now have an opportunity to indicate the above-mentioned factors and practices.

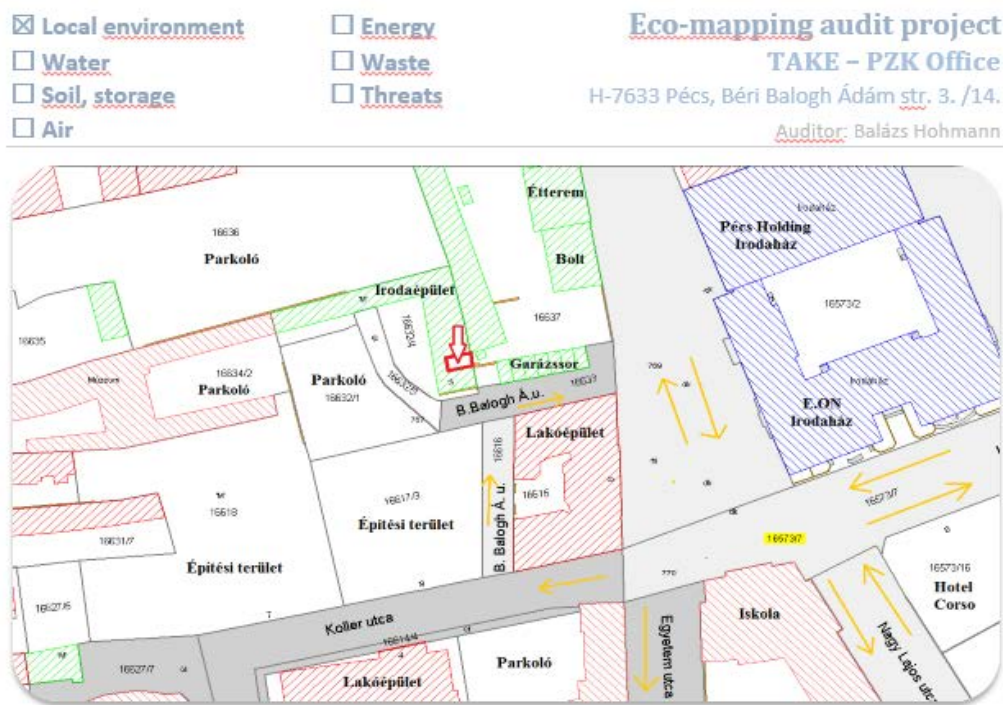


Figure 3 – Assessment document in the eco-mapping process (constructed by the author)

Supporting methods

There are many supporting methods available to help to achieve the objectives of eco-mapping and EPE (Engel, 2000; Koroljova – Voronova, 2007),

Let us highlight one of them: the “waste management star” graph (Engel, 2000; Hohmann, 2013) contains the evaluation of waste management, which visualizes the level of treatment with regard to every waste group. The organization can shape awareness of appropriate waste management by the publication of this graph, and this tool may help to define the priorities of the organizational waste management system.

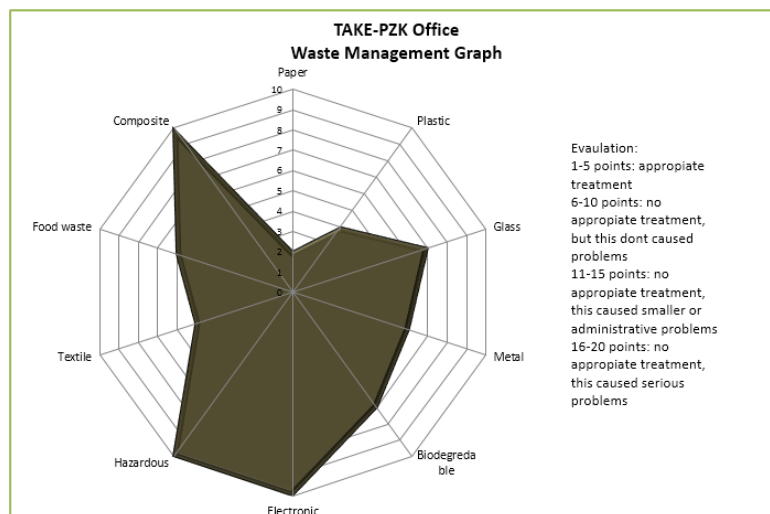


Figure 4 – Example for the waste management star (The bigger dark part of the graph shows the disadvantages of the organizational waste management system; constructed by the author)

DESKTOP program

In Hungary, between 2012 and 2015 a new environmental evaluation and research program was established by the Consciously for Our Environment Association, which was named as the DESKTOP program.

In the year of 2012, the host association was looking for the best method of evaluation of environmental performance in small and medium enterprises and same-sized



organizations. The eco-mapping method was chosen, because this tool requires fewer resources, and understanding the process and supporting tools is very easy for laymen.

This paper can summarize the main goals of this project as follows: evaluating, improving environmental performance, and assessing its effects on competitiveness, as well as implementing some environmental savings in the inspected organizations.

The project has been a success; it has evaluated 57 organizations, both NGOs and economic operators in the region of South-West Hungary.

In the project the SME's and other organizations did mostly well or very well in the eco-mapping assessment process, there were few weaknesses, the organizations were ready for co-operation and they were able to produce some environmental savings.

The research project identified the main, crucial environmental problems that lie in the field of water and energy issues. These problems are caused mainly by obsolete equipment and poor infrastructural environment.

The problems							
	Local Environment	Water	Soil, storage	Air	Energy	Waste	Threats
NGO's	8	4	6	5	6	2	10
SME's	18	30	18	18	40	26	20
Total	26	40	24	23	46	28	30

Figure 5 – The main problems in the examined organizations (constructed by the author)

The eco-mapping and the supporting method are effective at this level of organization, because motivation and awareness play a key role in the field of environmental protection (in accord with Edwards, Smith & Büchs, 2010).

The contact person involved in the eco-mapping projects has a key role in this process; he or she should help the organizations to step on the route toward sustainable development.



Conclusion

The main result of the project is that the motivation of the staff and leadership could be improved by graphic methods (in accordance with other projects, e.g. Peker, Senyigit & Gokkus, 2010).

The method can also be used to improve competitiveness: the organization can operate at lower costs with some environmental savings, in view of the experiences of the Hungarian project. There are many innovation possibilities in this organizational environment that enable the organization to enter into a new market segment. Through the successful implementation and practice of the method, the organizations can achieve partial independence from fossil resources.

On the basis of the above, the eco-mapping method can play a key role in increasing motivation and awareness. It may be a great tool for decision-makers concerning environmental issues and it has notable effects on competitiveness if the implementation of the method is successful.

References

- Edwards, R., Smith, G., & Buchs, M. (2010). Mainstreaming the environment? The third sector and environmental performance management. Research Paper 36. *Third Sector Research Centre*
- Engel, H. W. (2000). Környezeti térképezés (Eco-mapping). Budapest: KÖVET.
- Engel, H.-W. (2006). Ecomapping - What is Ecomapping?. Brussel: INEM.
- Hohmann, B. (2013). Awareness-raising and motivating effects of eco-mapping method. *Social Review*, 7 (1-2) 129-135.
- Kolk, A., & Mauser, A. (2002). The evolution of environmental management: from stage models to performance evaluation. *Business strategy and the environment*, 11(1), 14-31.



Koroljova, A., & Voronova, V. (2007). Eco-mapping as a basis for environmental management systems integration at small and medium enterprises. *Management of Environmental Quality: An International Journal*, 18(5), 542-555.

Peker, İ., Senyigit, E., & Gökkus, Ö. (2010). Eko-Haritalama: Çevresel Etkilerin Azaltılması İçin Yeni Bir Yaklaşım/Eco-mapping: A New Approach for Reduction of Environmental Effects. *Erciyes Üniversitesi Fen Bilimleri Enstitüsü Dergisi*, 26(3).

Pepper, D., Perkins, J. W., & Youngs, M. J. (1984). The roots of modern environmentalism.

Thoresen, J. (1999). Environmental performance evaluation—a tool for industrial improvement. *Journal of Cleaner Production*, 7(5), 365-370.

Tóth, G. (2003). Evaluation of environmental performance of companies. *Society and Economy*, 25(3), 383-402.

Tóth, G.. (2007). A valóban felelős vállalat: a fenntarthatatlan fejlődésről, a vállalatok társadalmi felelősségének (CSR) eszközeiről és a mélyebb stratégiai megközelítésről. KÖVET.

Winter, G. (1998). *Das umweltbewusste Unternehmen: die Zukunft beginnt heute*. Vahlen.