



¹-Dejan VASOVIĆ, ²-Jelena MALENOVIĆ NIKOLIĆ, ³-Goran JANAČKOVIĆ,
⁴-Jasmina RADOSAVLJEVIĆ, ⁵-Ana VUKADINOVIĆ

ENVIRONMENTAL MANAGEMENT SYSTEMS: CONTEMPORARY TRENDS AND PRACTICES

¹⁻⁵- University of Niš, Faculty of Occupational Safety in Niš, SERBIA

Abstract: Increased interest in environmental quality, as well as obligations arising from the EU accession process (particularly derived from the Chapter 27: Environment) impose trend of responsible environmental management. At the other hand, global trends such as the establishment of environmental management system based on ISO standards have the similar goals. The aim of this paperwork is to represent a comprehensive review of contemporary trends and practices in the field of environmental management, with particular regard to risk based approach. With no less importance, this paper seeks to demonstrate the application of risk-based environmental management practices in organizations already proven in the field of corporate social responsibility.

Keywords: environment, risk, management, methodology

INTRODUCTION

Contemporary trends within the field of the environmental management indicate that there has been an obvious shift from the traditional "top-down" approach when defining the environmental protection policy, to the concept of environmental management towards a more open system of governance at all levels, where decisions are made on the distribution and use of environmental resources. If properly implemented, this approach recognizes the needs and obligations of those who most influence the use of environmental resources, without losing the possibility of involvement of the wider community in the management process. The basis for undertaking a series of activities starts from the harmonization of legislation, institutional organization in the field of environmental protection, funds raising etc. to concrete plans on taking preventive measures.

Compared to all environmental factors, it is possible to group existing approaches in environmental management, in next order:

1. the first group consists of pollution control mechanisms for each environmental factor individually, meaning independently of one another (i.e. Command and Control Regulations, which, for

example, relates solely to the protection of water resources without considering the protection of soil, etc.). This approach is quite characteristic for the seventies of the twentieth century,

2. a second group consists of mechanisms that have a touch of integration, or perceived impacts of pollution globally, i.e. in respect of all environmental factors, but does not consider the activities and processes of society. This approach is characteristic for the eighties of the twentieth century,
3. the third group includes mechanisms which in addition to environmental factors considers factors of society, in terms of prevention, but only at the level of operators that generate pollution (consideration of material and energy flows). This approach is characteristic for the nineties of the twentieth century,
4. the fourth group consists of industrial ecology mechanisms where besides pollution prevention efficiency of utilization of environmental resources is also considered, as the performance reduction regarding emitted pollution, eco-efficiency and dematerialization of production. This approach is characteristic for the first decade of the twenty century,

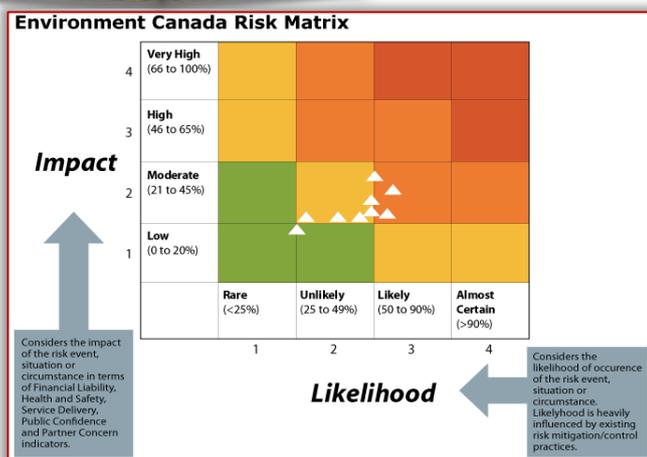


Figure 2. Environmental risk (harm) matrix, Canadian experience [8]

CONCLUSION

The basis for the preservation of environmental quality is existence of an effective environmental management system implemented at the all relevant activities and processes within organization. An objective selection of the most important environmental aspects means that the limited resources of organization are going to be allocated in the most positive manner (meaning greatest effects). With no less importance is a fact that effective environmental management systems actively contributes both to the environmental protection and corporate social responsibility of an organization.

Acknowledgments

The presented research is a part of the projects "Development of new information and communication technologies, based on advances mathematical methods, with applications in medicine, telecommunications, power systems, protection of natural heritage and education" (III 44006) and "Research and development of energy efficient and environment friendly polygeneration systems based on renewable energy sources utilization" (III 42006), under the auspices of the Ministry of Education, Science and Technological Development, Republic of Serbia.

Note

This paper is based on the paper presented at The VIth International Conference Industrial Engineering and Environmental Protection 2016 - IIZS 2016, organized by University of Novi Sad, Technical Faculty "Mihajlo Pupin" Zrenjanin, in Zrenjanin, SERBIA, October 13-14, 2016, referred here as [9].

References

- [1] Orlando, E., The Evolution of EU Policy and Law in the Environmental Field: Achievements and Current Challenges. The Transatlantic Relationship and the future Global Governance working paper, 2013.
- [2] Esty, D.C., Levy, M., Srebotnjak, T., de Sherbinin, A., Environmental Sustainability Index: Benchmarking National Environmental Stewardship. Yale Center for Environmental Law and Policy & Center for

International Earth Science Information Network, Davos, 2005.

- [3] Malenović Nikolić, J., Ristović, I., Vasović, D., System modeling for environmental management of mining and energy complex based on the strategy principles of sustainable balanced scorecard method (SBSC). Journal of Environmental Protection and Ecology, Balkan Environmental Association, 16 (3), 2015.
- [4] Srinivas, H., InfoSheets on Cities, EMS and Everything. GDRG Research Output E0915. Kobe, Japan: Global Development Research Center. Retrieved from <http://www.gdrc.org/uem/iso14001/info-sheets.html> on Wednesday, 28 September 2016.
- [5] Asolekar, S.R., Gopichandran, R., Preventive Environmental Management. Centre for Environment education, Ahmedabad, 2005.
- [6] ISO 14001:2015, Environmental management system, Requirements with guidance for use. International Organization for Standardization, 2015.
- [7] Phaneuf, M., McKee, M., Woods, P., Risk-based environmental assessment for uranium mines - some Canadian and Australian experience, IAEA, 2014.
- [8] Environment and Climate Change Canada (ECCC), <https://www.ec.gc.ca/dd-sd/default.asp?lang=en&n=E7537072-1>
- [9] Dejan Vasović, Jelena Malenović Nikolić, Goran Janačković, Jasmina Radosavljević, Ana Vukadinović, Environmental Management Systems: contemporary trends and practices, The VIth International Conference Industrial Engineering and Environmental Protection 2016 - IIZS 2016



ISSN:2067-3809

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