

**ENVIRONMENTAL AND QUALITY MANAGEMENT SYSTEM
IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT**

Miroslav RUSKO

doc. RNDr. Miroslav Rusko, PhD., Slovak University of Technology in Bratislava, Faculty
of Materials Science and Technology in Trnava, Institute of Safety, Environment and Quality,
Paulínska 16, 917 24 Trnava, Slovak Republic
e-mail: miroslav.rusko@stuba.sk

Abstract

Growing load and deterioration of the environment can be interpreted as a result of some external effects interventions. While the positive externalities influence the positive productional and utilizational functions of other subjects, the negative externalities influence the negative ones. Both types of external effects can act as parcial or global externalities. Linking of environmental issues to economy and finance is an important sphere.

Key words

environment, quality, management

INTRODUCTION

Growing humane population raises its material and energetic consumption and threatens overrun of carrying-capacity of our planet. Global environmental and safety problems manifest their retrogressive trend. At present, discussions about safety implications of climatic changes and migration, terrorism, cybernetic safety, dangerous diseases transfer, etc are being carried on at all levels of management. There is an effort to analyze the situation arisen or potential risks and to adopt adequate measures.

The idea of sustainable development was first brought to widespread attention as a global issue; however, it is increasingly being applied at more local levels down to that of individual companies. This raises the potential danger that sustainable development will come to be predominantly identified with the preservation of the organisation involved. A likely outcome is that management decision-making will tip the balance too far in favour of people-centred interests rather than against environmental interests. An initial step in preventing this is to make any bias in the balance of interests transparent to management. To do this, a model of sustainability is set up in terms that provide a context for the implementation of a quality based environmental management system such as that specified by the International Standard,

ISO 14001. In response to inherent uncertainty, a precautionary approach is adopted. The implications of this model for the structuring of critical environmental management system elements are then discussed and a way to generate an indicator of bias proposed. The content of an audit, which would measure the extent to which an organisation has a management system competent to measure and monitor this bias, is also discussed and proposed as another useful indicator (7).

ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

In recent past, in spite of the fact of non-existence of any environmental movements, there was functioning a system of closed cycle of matters in the range of rural settlement without any distinct externalities (from foodstuffs to clothing). By the start of industrialization, “waste”-whether as a secondary product of production processes or in households- emerged as a problem. According to the predetermined economic conditions, there was a functioning recycling and reversible system without any need of visual regulation. At present, there is, often negative attack of society on individual parts of environment as a result of the globalization. It is related also to a need for legal regulation directed to the elimination of unfavourable influences. Besides the legal regulation, an important role is played by both edification and medial activities.

When considering the planet of Earth, the current human activities are of a global nature. Significant problems include worsening of the environmental conditions. Nowadays, humanity possesses the most modern tools of disposal it has ever had in its whole history to influence the environment (both in the positive and negative sense). Unlimited economic growth, especially in the states with developed economies, the so-called countries of the rich North, and an exponential growth of human population bring along distortion of certain systems all throughout the planet. The present human civilisation affects the air, climate, soil, water, circulation of substances, live organisms as well as the civilisation itself. Environmental problems caused by human activity are more and more globalized.

CONCEPT OF A SUSTAINABLE DEVELOPMENT

A recent notion of humanity development identified only with the economic growth has now been corrected so that it would lead also to fulfilment of social goals, in particular to reduction of poverty, enhancement of the quality of life, improved opportunities for better education and health. This change of orientation requires a comprehensive approach to development of mutual relations management between natural and human, branch and structural aspects of development on all levels (6). As a result of this changed orientation, a concept of sustainable development was created, which is further being developed and internationally applied. Since 1960s, the knowledge that an unlimited or uncontrolled growth, whether of human population, consumption or pollution etc., is not sustainable under the circumstances of real, existing and limited resources is becoming more wide-spread (5).

It is therefore necessary to replace the model of industrial civilisation by a more sustainable and just concept. The sustainable development concept is nowadays considered as a possible solution to the adverse consequences of global trends in the society development and their negative impacts on the environment. The emphasis is on the need to base this concept on healthy ecosystems, strong economy and well-functioning social issues (4).

In its draft of the Sustainable Development (SD) Principles, the EU has declared that SD is the key factor of all EC policies stipulated by the Treaty. This document determines the

crucial objectives such as environmental protection, social equity and cohesion, economic prosperity and meeting the international responsibilities. In fulfilling these objectives the EU is guided by the following political principles: promotion and protection of fundamental human rights, solidarity within and between generations, open and democratic society, involvement of citizens, involvement of social and business partners, policy coherence and governance, policy integration, use of best available knowledge, precautionary principle and the “polluter pays” principle (1).

Nowadays, there are still many areas in Slovakia contaminated by the past and current industrial activities, which causes a serious negative impact not only on human health and life, but also leads to the constantly worsening quality and conditions of environment. The most important principles in case of negative impacts of anthropogenic activities on the environment is giving preference to preventive measures rather than to corrective ones, and application of the “polluter pays” principle (2).

Prevention or remedying of environmental damage should be implemented via the “polluter pays” principle in accordance with the sustainable development principles (3).

QUALITY MANAGEMENT SYSTEM

Adoption of the Quality Management System (QMS) has to be a strategic decision of an organisation. The proposal and introduction of the Quality Management System in an organisation is influenced by various needs, specific objectives, delivered products, used processes and the size and structure of the organisation. The aim of the standard is not to introduce a unitary structure of quality management systems or a single documentation. The requirements for a quality management system specified in this international standard meet the requirements for products. The international standard may be used by both internal and external parties, including certification bodies, in order to assess the ability of an organisation to comply with requirements of a customer, regulations and own requirements of the organisation.

An important milestone in the development of quality management systems was issuance of ISO standards of 9000 series in 1987 by the International Organisation for Standardisation, by the technical committee TC/176 Quality Management and Quality Assurance. ISO standards of 9000 series were the beginning of the path towards the top quality and were an effective tool of enhancing work within a company via the quality management system. The first extensive revision of these standards was carried out in 1994 and then in 2000 the norms were again substantially reviewed. STN EN ISO 9001 (01 0320) is identical with the norm *EN ISO 9001: 2000 Quality Management System. Requirements*. This standard replaces STN EN ISO 9001 of December 1996 (01 0321), STN EN ISO 9002 of March 1997 (01 0322) and STN EN ISO 9003 of January 1997 (01 0323) in their full scope. The text of the international norm ISO 9001: 2000 was prepared by the Technical Committee ISO/TC 176 “Quality Management and Quality Assurance”, Subcommittee 1 “Concepts and terminology”, in cooperation with the CEN Management Centre. The standard applies in particular to organisations, which would like to mark their products as CE, and therefore they have to comply with the new approach to European directives, and to other parties involved in the process. Publication of EN ISO 9001: 2000 concerns Council Decision 93/465/EEC of 22 July 1993 concerning the modules for the various phases of the conformity assessment procedures and the rules for the affixing and use of the CE conformity marking, which are intended to be used in the technical harmonization directives.

The Slovak Office of Standards, Metrology and Testing published a new edition of ISO 9001: 2009 Quality management systems. Requirements (ISO 9001:2008). ISO 9001:2008 specifies requirements for a quality management system where an organization

- needs to demonstrate its ability to consistently provide product that meets customer and applicable statutory and regulatory requirements, and
- aims to enhance customer satisfaction through the effective application of the system, including processes for continual improvement of the system and the assurance of conformity to customer and applicable statutory and regulatory requirements.

All requirements of ISO 9001:2008 are generic and are intended to be applicable to all organizations, regardless of type, size and product provided.

Standard STN EN ISO 9001 is harmonised with ISO 14001 so that compatibility of the two standards is beneficial for the user public.

ENVIRONMENTAL MANAGEMENT SYSTEM

In 1996, the Geneva-based International Organization for Standardization released its ISO 14001 guidelines for environmental management systems.

The ISO 14000 family addresses various aspects of environmental management. It provides practical tools for companies and organizations looking to identify and control their environmental impact and constantly improve their environmental performance. ISO 14001:2004 and ISO 14004:2004 focus on environmental management systems. The other standards in the family focus on specific environmental aspects such as life cycle analysis, communication and auditing.

The environmental policy focuses, besides application of legislative approach, also on implementation of voluntary tools, which support economic growth of the company, its competitiveness, profitability, including new vacancies, and helps reduce negative impacts of human activity on the environment.

The principles and key requirements of the environmental management in Slovak Republic are common within application of:

- Standard STN EN ISO 14001 – Environmental Management System,
- Eco-management and Audit Scheme - EMAS.

The documents are based on a common principle – to initiate an active attitude of companies towards improvement of their relation to the environmental protection, and differ in the fact that one document requires certain system components, while the other only recommends them. Both technical regulations include a management system.

Normative documents for establishment of the Environment Management System are the set of ISO standards of 14000 series, within which the decisive is the standard *STN EN ISO 14001: 2004 Environmental Management System. Requirements with guidance for use.*

ISO 14001: 2004 sets out the criteria for an environmental management system and can be certified to. It does not state requirements for environmental performance, but maps out a framework that a company or organization can follow to set up an effective environmental management system. It can be used by any organization regardless of its activity or sector. Using ISO 14001: 2004 can provide assurance to company management and employees as well as external stakeholders that environmental impact is being measured and improved.

The benefits of using ISO 14001: 2004 can include:

- Reduced cost of waste management
- Savings in consumption of energy and materials
- Lower distribution costs
- Improved corporate image among regulators, customers and the public.

Standard STN ISO 14004 specifies the way to fulfil standards STN EN ISO 14001: 2004.

ECO-MANAGEMENT AND AUDIT SCHEME

EMAS (Eco-Management and Audit Scheme) is based on an environmental management system pursuant to ISO 14001 standard. On the other hand, however, it enhances the environmental management to a higher level, because a company wishing to register within the scheme has to inform about its environmental conduct in an open, clear and truthful manner.

The objective of EMAS, as an important instrument of the Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan, is to promote continuous improvements in the environmental performance of organisations by the establishment and implementation of environmental management systems by organisations, the systematic, objective and periodic evaluation of the performance of such systems, the provision of information on environmental performance, an open dialogue with the public and other interested parties and the active involvement of employees in organisations and appropriate training.

EC Regulation:

- EC Regulation 1836/1993 (EMAS I) allowing voluntary participation by industrial companies in the industrial sector in a Community eco-management and audit scheme adopted on 29 June 1993 by the EC Council of Ministers came into force on 13 July 1993 and became effective for individual EU Member States as of 13 April 1995.
- EU Regulation 761/2001 of 19 March 2001 allowing voluntary participation by organisations in a Community eco-management and audit scheme (EMAS II) later amended EC Regulation 1836/1993 (EMAS I).
- EC Regulation No 1221/2009 of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS III), repealing Regulation (EC) No 761/2001 and Commission Decisions 2001/681/EC and 2006/193/EC.

Decision No. 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme identifies the improvement of collaboration and partnership with enterprises as a strategic approach to meeting environmental objectives. Voluntary commitments are an essential part thereof. Encouraging wider participation in the Community's eco-management and audit scheme (EMAS) and the development of initiatives to encourage organisations to publish rigorous and independently verified environmental or sustainable development performance reports is regarded as necessary in this context.

The relationship between EMS implementation and environmental performances improvement is subject to increasing interest by international researchers but results obtained so far are not univocal. A critical issue is that ISO 14001 does not require companies to reach

minimum levels of environmental performances (apart from legal compliance) nor does it supply methods to be used to measure continual improvement (8).

By implementing an EMS, an organization is better situated to manage the environmental effects of its operations which, in turn, should lead to better environmental performance. However, research on EMS performance has only recently begun to emerge, and the relation between EMSs and genuine improvement in environmental performance has not been clearly established (9).

The EMAS logo should be an appealing communication and marketing tool for organisations, which raises the awareness of buyers and other stakeholders to EMAS. There should be no confusion with environmental product labels.



Fig. 1 Logo EMAS

ENVIRONMENTAL AND SAFETY MARKING OF PRODUCTS AND PRODUCTION

Both the environment protection and the society routing towards such a development that enables economic development, life-standard raising and hereby saves nature and natural resources for next generations demand knowledge of contemporary status and adopting adequate measures for elimination negative influences on environs. As a result, there ought to be a qualitatively environmentally more acceptable approach at resources exhausting, in production and consumption that should not be based on any directions or restrictions but in the frame of natural human knowledge that can be further developed without any threat of sanctions or directives. Tendencies of the strategies for pro-active and pro-sustainable approaches implementation belong among important elements of the policy of environment and sustainable development protection that are implemented in the end of the last century and nowadays. In accordance with this approach there are gradually implemented some efforts for transition from environmental issues solving subsequently after their creation (construction of end-of-pipe technologies targeted at elimination of contamination) towards the solutions that are technically preventive and sustainable during the whole life-cycle of technology and product.

Environmental marking of products is one of the pro-environmental voluntary approaches. The environmental mark (symbol) is perceived as a quick indicator of the protection of environment/sustainable development.

In the last decades, there occurred an important broadening of the spectrum of approaches in environmental and safety policies at both national and international levels. Voluntary approaches play an important role while at many cases there was realized standardization of some approaches. Simultaneously with their practical dissemination, the new research was

oriented not only on some theoretical aspects investigation but also on generalization of practical experience acquired from individual studies.

Environmental marking is the activity of producers/sellers by which they want to raise the competitiveness of their products, i.e. they want to give or safeguard a possibility to the consumer to choose between the substituents on market and to select those ones that have more credible environmental properties. The question whether the environmental mark is guaranteed by a program/scheme with appropriate support of legal norm or standards plays an important role in this process. Nevertheless, important is also the consumer attitude which is really decisive for the implementation of particular product at marketplace. It is dependent on many attributes like trustworthiness, acceptability, information, tradition, individual program/scheme cognizance, culture and also on consumer's personal experience, awareness and consciousness. A separate chapter that contributes to environmentally oriented marks diversity comprises different environmental-natural marks of various subjects and also products out of programs/schemes having certification of the third party.

The safety and health marking gives directions and information needed for safeguarding of the safety and health protection at work. It is implemented by marks, colour, light marking or by acoustic signal and communication through some word or hand signals. The safety and health marking used at work-place, its positioning and utility form have to fulfil demands determined by the generally obliged legal regulation. An employer is due to equip the workplaces by the safety and health markings in the case when there is not any possibility to eliminate or appropriately diminish a danger by means of collective protection, by any methods and processes used at work organization or by another measures.

There are more schemes oriented on various aspects of environment, safety, health, hygiene, quality and to the markings while they are putting stress on given area that often represents particular segment of socio-economic activity. These schemes should not limit free movement of products, i.e. they should be acceptable in the European Union according to the Articles 28 and 30 of the Treaty EC on technical harmonization at the level of Community. The CE marking of products can serve as an example. It is satisfying demands for new type of EU technical harmonization that is supported by the formation of basic demands for safeguarding all legally protected interests. Harmonized technical standards are an exemplary solving of this issue. Alongside with the safeguarding of true information through effective tools of the product deducibility, there is also a need to raise the efficiency and implementation in practice by presenting clear, complete and understandable information on etiquette. It is important to strike the proper balance between the consumer right on full information and the practical readability that is depending on letters dimension and on avoiding exacting complexity, proficiency or length that could be confusing or discouraging from reading. Another example is an effort of the EU to give to producers some correct tools for announcing characteristic product features and means of goods production serving for the consumers and for their protection against unfair selling practices. An important tool for monitoring of given product during its production chain is the deducibility that helps to give the consumer some clear, full and understandable information on the product introduced on the market together with the date given on etiquette.

CONCLUSION

The interconnection of economics with environmental issues is of great significance. Environmental audit can reveal insufficient compliance with environmental duties imposed on companies within their individual operative units of production.

For the restriction of negative influences aiming at sustainable development of society assurance there are adopted some relevant measures often joined with labelling activities that are having a task to inform, mobilize, regulate an activity for to limit or eliminate its influences. By the formation of these activities at all societal levels (geographic, regional, national, non-governmental, corporate or sector ones), the contemporary status of considerable diversity in the sphere of environmental and safety marking has arisen.

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Reviewers:

prof. Ing. Karol Balog, PhD.

prof. Ing. Ervin Lumnitzer, PhD.