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Sustainable Development, Quality Management System and Environmental Management System in Slovak Republic

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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 production and utilization functions of other subjects, the negative externalities influence the negative ones. Both types of external effects can act as partial or global externalities. Linking of environmental issues to economy and finance is an important sphere.

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1. 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. In the present there are carried on discussions at all levels of management about safety implications of climatic changes and migration, about terrorism, about cybernetic safety, about dangerous diseases transfer etc. There is an effort to analyze situation arisen or potential risks and to adopt adequate measures.

The topic of climatic changes is becoming increasingly urgent. It is implied that the cause behind environmental degradation is mainly energy production, while little or no attention is paid to its use. It exists the European Emissions Trading Scheme (EU ETS) is considered a flexible policy instrument to cut greenhouse gas (GHG) emissions in order to achieve Kyoto's reduction targets. The ETS is a market-based policy instrument based on the cap-and-trade system which offers, in theory, the opportunity to meet environmental targets in the most cost-effective way [4].

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“Our Common Future”, a report published by the World Commission for Environment and Development presided by Gro Harlem Brundtland, defines sustainable development as the kind of development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

The report does not want to forecast continuously worsening environment, on-going poverty and difficulties in an increasingly polluted world where resources will continue to disappear. In the report, the World Commission presented its urgent and pressing warning based on the latest and best scientific evidence that the time to implement necessary measures has come to ensure resources for this and future generations. The report does not offer a detailed implementation plan but has showed a path where world’s nations may extend their mutual cooperation [11]. Sustainable development is incorporated in the Slovak legal system as the kind of development that preserves the possibility for current and future generations to satisfy their basic needs while not reducing the natural diversity and maintaining the natural functions of ecosystems (Article 6 of Act No. 17/1992 Coll. on the environment).

First of all, organizations try to achieve competitive advantage in order to make more profits, gain market shares and increase their success in a long period perspective [7].

Organizations of all kinds are increasingly concerned with achieving and demonstrating sound environmental performance by controlling the impacts of their activities, products and services on the environment, consistent with their environmental policy and objectives. They do so in the context of increasingly stringent legislation, the development of economic policies and other measures that foster environmental protection, and increased concern expressed by interested parties about environmental matters and sustainable development.

2. Methods and materials used for research

Between basic requirements for a systematic approach to management in Slovakia belong generic requirements of international standards:

- ISO 9001 Quality Management System,
- ISO 14001 Environmental Management System,
- OHSAS 18001 Healths and Safety Management System.

Revision of standards of the Quality management system, based on process management, required a change in the assessment of individual systems and new approach of the auditors in auditing of management systems. It is important that was unified and updated the terminology used in Quality management systems and in the standards of environmental management in Slovakia.

3. Sustainable development, quality management system and environmental management system in Slovak Republic

3.1. 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 there emerged „waste“ as an problem – whether as a secondary product of production processes or in households. According to the predetermined economic conditions there was functioning a recycling and reversible system without any need of visual regulation. In the present we have, as a result of the globalization, often negative attack of society on individual parts of environment. It is related also to a need for legal regulation directed to the elimination of unfavourable influences. Besides the legal regulation there play an important role both edification and medial activities.

When considering the planet Earth, the current human activities are of a global nature. Significant problems include worsening of the environmental conditions. Humanity nowadays has the most modern tools in its whole history at its disposal 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 still 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 [10].

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

- the concept of **needs**, in particular the essential needs of the world's poor, to which overriding priority should be given; and
- the idea of **limitations** imposed by the state of technology and social organization on the environment's ability to meet present and future needs." [9].

Sustainable development (hereinafter "SD") also addresses science, research and education. It represents an important challenge for the sciences that emphasize integrated or holistic approaches to the environment and all relevant systems involved with the subject of geographical research and environmental sciences [8].

In its draft 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, "polluters pays" principle [1].

Nowadays there are still many areas in Slovakia contaminated by past and current industrial activities, which cause serious negative impacts not only on human health and life, but lead to constantly worsening quality and conditions of the 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 "polluter pays" principle in accordance with the sustainable development principles [6].

3.2. Quality management system

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

An important milestone in the development of quality management systems was issuance of ISO standards of 9000 series in 1987 by the International Organization for Standardization, 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. Updated version ISO 9001: 2008, updated version in Slovakia STN EN ISO 9001: 2009.

The standard applies in particular to organizations, 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.

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

3.3. Environmental management system

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 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.

An Environmental Management System (EMS) is considered a beneficial tool for organizations that wish to integrate environmental management in the overall corporate management system, not only to comply with existing regulations but also to take into account and eventually respond to changing knowledge and technology [5]. The most frequent actions within environmental planning regarding the improvement of production processes, and energy efficiency or energy production, are considered as the safest ways to achieve cost reductions. These investments already appear to be typical components of EMS programs [3].

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. Specification with instructions for use*. STN ISO 14004 standard specifies the way to fulfill standards STN EN ISO 14001: 2004.

International Standards covering environmental management are intended to provide organizations with the elements of an effective environmental management system (EMS) that can be integrated with other management requirements and help organizations achieve environmental and economic goals. These standards, like other International Standards, are not intended to be used to create non-tariff trade barriers or to increase or change an organization's legal obligations. The overall aim of this International Standard is to support environmental protection and prevention of pollution in balance with socio-economic needs. It should be noted that many of the requirements can be addressed concurrently or revisited at any time.

Interest from stakeholders in organizations' environmental performance is continually increasing. It is simply no longer possible for organizations to operate without taking into account the environmental consequences of their actions. Organizations that seek to take a proactive approach to environmental challenges need to make constant improvements. The EU Eco-Management and Audit Scheme (EMAS) is the perfect tool to achieve this. EMAS is a management instrument developed by the European Commission for companies and other organizations to evaluate, report, and improve their environmental performance. EMAS is open to every type of organization eager to improve its environmental performance. It spans all economic and service sectors and is applicable worldwide. The new elements of the scheme lead to enhanced performance, credibility and transparency of registered organizations. EMAS is based on an environmental management system pursuant to ISO 14001 standard [12]. 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. 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 organizations in a Community eco-management and audit scheme (EMAS II) later amended EC Regulation 1836/1993 (EMAS I). The latest revision of EMAS, Regulation (EC) No 1221/2009 (EMAS III), came into force on 11 January 2010. It repeals Regulation (EC) No 761/2001 (EMAS II).

3.4. 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 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 there started a research centered 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, there is also important the consumers attitude which is really deciding on 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 consumers personal experience, awareness and consciousness. A separate chapter that contributes to environmentally oriented marks diversity is 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, communication through some word or hand signals. The safety and health marking used at work-place, its positioning and utility form have to fulfill 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 to 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 forming 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 needed also to raise the efficiency and implementation in praxis by the presenting of clear, complete and understandable information on etiquette. It has to be found a 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 there 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.

4. 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 labeling 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 sectoral ones) there had arisen contemporary status of considerable diversity in the sphere of environmental and safety marking.

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