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ENVIRONMENTAL MANAGEMENT SYSTEMS, INSTRUMENTS TO ACHIEVE SUSTAINABLE DEVELOPMENT GOALS

SISTEMELE DE MANAGEMENT DE MEDIU, INSTRUMENTE PENTRU REALIZAREA OBIECTIVELOR DEZVOLTĂRII DURABILE

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Abstract: We are witnessing an intensification of efforts to align states to "Transforming our world," imposed by the need to maintain the balance between the environment, society, and the economy. The article signals the emergence of *National Sustainable Development Strategy 2030* and its main objectives. The management systems required by an organization to manage environmental aspects are presented in a comparative manner: The Community Environmental Management and Audit Scheme (EMAS) and ISO 14001: 2015 Standard - "Environmental Management Systems. Requirements with user guide ". The authors appreciate that at the level of organizations, experience in the field of ISO certification: 9001 and 14001 has to be capitalized to meet sustainable development goals. It is highlighted the fact that certification of any environmental management system (EMAS and / or ISO guidelines) brings benefits for sustainable development through better use of raw materials and resources. Proposals are made on continuous training with new concepts, collaboration between certification bodies and authorities.

Key-words: *environmental management systems, sustainable development, organization, corrective actions*
Cuvinte cheie: *sisteme de management de mediu, dezvoltare durabilă, organizație, acțiuni corective*

I. INTRODUCTION. SHORT RETROSPECTIVE

The environment is an entity, a common heritage of present and future generation, and thus the initiation of protection methods is necessary. Long-term planning, coordination and integration of efforts can eliminate the occurrence of harmful effects that cause irreversible changes over time for the geographic environment.

In September 2015, the United Nations General Assembly adopted "2030 Agenda for Sustainable Development - Transforming our World", a set of 17 sustainable development goals (SDGs) based on 3 pillars, goals which are to be implemented by each country between 2016 and 2030.

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The Council of the European Union, on 20 June 2017, through the document "A Sustainable Future of Europe: the EU's Response to 2030 Agenda for Sustainable Development", defined the main lines of action of the member states to implement the 2030 Agenda.

Romania has undertaken measures to implement the 2030 Agenda for Sustainable Development, through Government decision no. 877/2018 for the approval of the *2030 National Strategy for Sustainable Development of Romania*, issued within the Government, about one year after the establishment of the *Department for Sustainable Development.* The department is responsible for coordinating the implementation activities of the 17 SDGs of the 2030 Agenda and for connecting the National Strategy for Sustainable Development of Romania to the sustainable development goals set at the level of the European Union and the United Nations.

II. CONCEPTUAL CLARIFICATIONS

2.1. Sustainable development

According to the 2030 National Strategy for Sustainable Development of Romania, this "represents a paradigm based on ethics and education and aims at developing competences that help individuals to reflect on their own actions, taking into account their current and future social, cultural, economic impacts and the environment".

The concept is built around the citizen, identified as a key tool in achieving the goals. Also, Goal no. 4 of the National Strategy highlights the importance of quality education that the individual receives, considered to be essential to acquiring the thinking framework necessary for the proper functioning of a sustainable society.

Education in the spirit of sustainable development is considered an integral part of the quality of education, inherent in the concept of lifelong learning. It is necessary to prepare the young generation for the challenges of the future by encouraging innovation, critical thinking and emancipation.

To the first three pillars of sustainable development (René Passet, 1979) (Fig. 1) a fourth cross-cultural dimension has been attached.

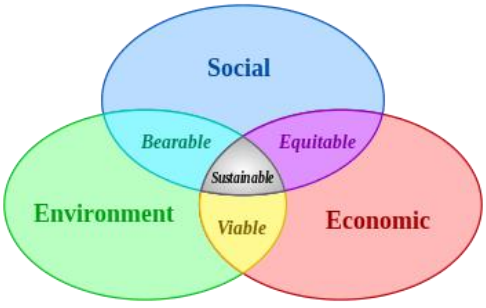

Fig. 1. Pillars of sustainable development
(Source: https://en.wikipedia.org)

2.2. Environmental Management Systems (EMS)

EMS is part of an organization's *Management System*, used to manage environmental issues, meet compliance obligations, and address risks and opportunities. For the implementation and operation of EMS, it is necessary to understand and apply the PDCA cycle (Fig. 2) both at the system level and in relation to each of the elements of the system, which leads to the deliberate achievement of the EMS (goals).

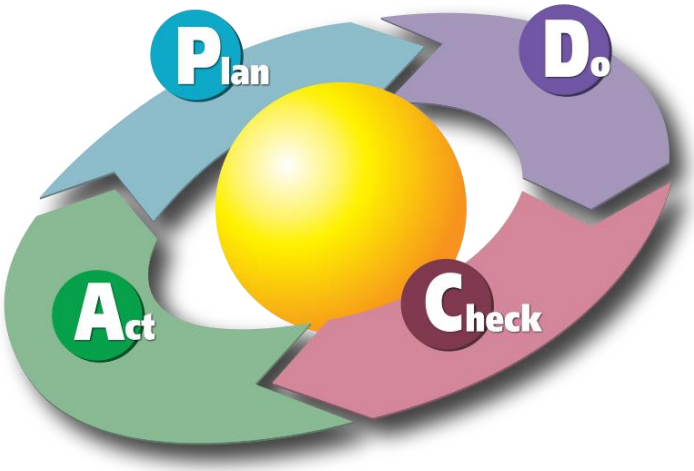

Fig. 2. PDCA Cycle - Diagram of Karn G. Bulsuk
(Source: http://www.bulsuk.com)

Any organization implementing an EMS goes through stages such as:

- defining *Environmental Policy*;
- establishing the *Plan* through which this policy materializes;
- *implementation of the Plan* with SMART goals (specific, measurable, achievable, with responsibilities and deadlines);
- *measuring, monitoring and evaluating* environmental performance;
- *EMS evaluation / verification* at defined time intervals (internal and external environmental audit) and corrective actions if necessary
- *management's analysis* to ensure the continuous improvement process to achieve the proposed environmental performance

The Community Eco-Management and Audit Scheme (EMAS) is a management tool for organizations carrying out activities with an environmental impact. The purpose of EMAS certification is to constantly improve environmental performance.

The system has been available to companies since 1993 and has been revised twice. First, in 2001 by Regulation (EC) No. 761/2001 (EMAS II), which opened up the participation of all economic sectors, public and private services, then in

2009 (EMAS III), when it also became available to organizations with activities impacting on the environment, within the European Community or outside it.

Sustainable Development Goal No.12 of the 2030 National Strategy mentions EMAS as a tool "designed to support organizations in continually improving environmental performance, integrating sustainable development concept into a model that leads to optimization of production processes, reducing environmental impact, and efficient use of resources. "

The competent body responsible for organizational registration in EMAS is the Ministry of Environment and Climate Change.

SR EN ISO 14001: 2015 - "Environmental Management Systems. Requirements with user guide" provides organizations a framework to protect the environment and respond to changes in environmental conditions in balance with socio-economic needs. This standard is at its 3rd edition. Previous editions were translated into Romanian in 1997 and 2005.

The standard sets out the requirements for an environmental management system that an organization can implement to increase its environmental performance by helping to manage environmental responsibilities in a systematic and compatible manner with other management systems, such as ISO 9001 – Quality Management or ISO 45001 – Occupational Health and Safety.

The implementation of an EMS according to ISO 14001 requires the involvement of the entire staff of the organization, whatever the hierarchical level and functions involved, and especially the engagement of a dynamic and cyclical process of continuous improvement and self-assessment of environmental impacts. (Neagu&Neagu, 2015)

The ISO certificate is granted by the Steering Committee of the Certification Body, accredited by RENAR (National Accreditation Register of Romania).

2.3. Certification according to ISO 14001 versus EMAS - Eco-Management and Audit Scheme. Similarities and differences.

ISO: 14001 shares a common background with EMAS, for example, they have as a common goal the promotion of an effective environmental management, Environmental Policy, usually published in writing as *Environmental Policy Statement*. This expresses the general manager's commitment to comply with environmental legislation and to pursue the continuous improvement of environmental performance.

The European Commission has recognized that the European Standard for Environmental Management Systems ISO 14001, can provide a basis for EMAS.

Unlike ISO 14001, EMAS requires the certified organization to publish an annual *Environmental Performance Report*. These reports will outline how the EMS goals and targets have been achieved and how the organization has overcome its nonconformities. The organization should also communicate any future plan with significant environmental impact. For example, the initial environmental analysis is part of the assessment.

The organization will have to possess the situation with all the entries and exits in its area. This includes present, past and future activities. Therefore, if an organization had a contamination problem in the past, then the EMS introduced should usually take this into account.

ISO: 14001 maintains the emphasis on current processes. Both systems are voluntary environmental management tools based on a harmonized EU scheme.

In October 2018, 10 EMAS organizations were registered, compared to just one in 2008. There are thousands of organizations across Romania that have ISO 14001 certifications. In most cases, certification is a requirement in the procurement specification for public acquisition.

The EMAS situation at European level shows good participation for Germany, Spain and Austria (Fig. 3).

-Official statistics of the European EMAS Helpdesk-
Organisations and Sites per Country (October 2018)

Country	*Organisations*	*Sites*	*Country*	*Organisations*	*Sites*
Austria	288	1211	Italy	992	5820
Belgium	75	755	Lithuania	4	7
Bulgaria	10	23	Luxembourg	4	7
Croatia	0	0	Latvia	0	0
Cyprus	94	94	Malta	1	1
Czech Republic	21	47	Netherlands	1	1
Germany	1213	2211	Norway	5	14
Denmark	24	193	Poland	68	367
Estonia	5	32	Portugal	52	90
Spain	815	1035	Romania	10	18
Finland	4	22	Sweden	15	15
France	26	37	Slovenia	11	17
Greece	36	1,333	Slovak Republic	5	20
Hungary	27	49	United Kingdom	14	15
Ireland	2	2			

Total: 3822 organisations & 12104 sites

Source: Official responses from national Competent Bodies

Fig. 3. Official Statistics of the European Helpdesk – Organisations and Sites per Country
(Source: http://ec.europa.eu)

We consider that there is potential for improvement in our country through better cooperation between Certification Bodies, Environmental Authorities and Consultancy Firms to identify organizations with potential, mainly in human resources, and to prepare them to meet the EMAS requirements.

Preparing an Annual Report on Environmental Performance and conducting an additional audit should not discourage an organization whose interest is to increase its reputation.

A similar situation also occurs in the field of Quality Management System Certification (ISO 9001), where firms have just begun to be interested in gaining recognition by obtaining the European Quality Award (EFQM).

Certification of any environmental management system (ISO: 14001 or EMAS) brings benefits to sustainable development through better use of raw materials and resources. It also ensures compliance with environmental legislation and enhances environmental performance, improves public image for investors and customers and competitiveness on the European market. These result in lowering operating costs and optimizing existing processes. Therefore, certification of environmental management systems supports sustainable development on all three pillars.

Certification of Environmental Management Systems provides sustainable practices in organizations. These practices are encouraged by Goal No. 12 of the 2030 National Strategy for Sustainable Development of Romania which encourages companies, "especially large and transnational companies, to adopt sustainable practices and integrate sustainability information into the reporting cycle." It is a 2020 Goal to promote tools to improve environmental performance through information and awareness campaigns on how to obtain the "EU Eco label" for products and services, as well as to obtain registration in EMAS by public and private organizations.

III. HARMONIZATION OF ENVIRONMENTAL GOALS AND SUSTAINABLE DEVELOPMENT AT THE COUNTY, NATIONAL, EUROPEAN LEVEL

3.1. Objectives proposed at the level of Dolj County

A summary of the subject is derived from *The Dolj County's Sustainable Development Strategy*. The paper is based on the financing plans approved in the analyzed period at the level of Dolj County and the questionnaires made to the stakeholders.

Dolj County's sustainable development vision for the 2020 horizon covers six main pillars, including:

- modern, safe and fast transport infrastructure;
- quality educational, social and cultural services;
- higher living standards and removing development disparities from other areas of the country
- diversified and competitive economy, based on supporting the business environment, innovation and generating a dynamic SME sector;
- natural and built heritage well preserved, environmentally friendly and oriented towards sustainable management and the resources it has;
- proactive, transparent and accessible administration, citizen-oriented and efficient in attracting development resources, working with the private and civil society and supporting international and cross-border cooperation.

The Strategic Goal No. 2 concerns the Sustainable Development of Dolj County, having as Operational Goal - Environmental Protection and Sustainable Management. The measure to achieve this goal is implementing the integrated management system.

3.2. Sustainable development objectives in Romania

After reading the *2030 National Strategy for Sustainable Development for Romania* and the *Economic and Social Development Strategy of Dolj County 2014 to 2020*, it is noticed that the goals pursued at the country level are mirrored at the county level, as follows:

- The Dolj County vision of achieving a modern and diversified transport is in line with the Strategic Goal No. 3: Health and Welfare - Infrastructure.
- Improvement of educational services responds to the Strategic Goal No. 4: Quality Education.
- Achieving a diversified and competitive economy in a national context mirrors the 8, 9 and 12 Strategic Goals, aimed at economic growth, the transition to circular economy, the European Eco-label, the EMAS and integrated waste management.
- Conservation of natural heritage and sustainable resource management is in line with the Strategic Goal No. 15, which targets land life.
- Proactive and citizen-centered administration reflects the Strategic Goal N0. 17, which encourages partnerships in order to achieve the established goals.

Starting from the idea that global issues require transversal global solutions, it is understandable that the shared vision of the UN General Assembly (2015), which resulted in the *2030 Agenda for Sustainable Development*, to be further found in the *Sustainable Future of Europe* (2017) and later in the *2030 National Strategy for Sustainable Development of Romania* (2018).

The National Strategy considers that the transition from the current economic model based on production and consumption to the circular economy will be brought by changing mentality through education, changing consumer behavior and developing financial mechanisms to support the transition period and defines it as the 2020 Target.

Romania's Governance Program presents two chapters on environmental and energy policy, as well as the measures to be taken in that direction. For example, the sustainable development of forests and the development of a forestry strategy which is to be implemented over the period 2018-2027 and the increase of energy efficiency.

It is appreciated that stakeholders should act to introduce a sustainability code that allows a comprehensive reporting of companies' attitudes towards the application of sustainable development principles.

3.3. Model for addressing sustainable development goals in UK

Starting from the delay signaled by the National Strategy on Integrated Waste Management (a project not completed in 2013, currently underway through the Large Infrastructure Operational Program) and consulting the EMAS webpage, we have found the example of good practice in Ecotricity.

The title and subtitle of the document are relevant: *" Ecotricity`s 2030 Vision for a Green Britain. Where we shoud be, and how we get there "*. From the document we have extracted a chart on the decarbonisation target in UK . (Fig. 4) It shows the clear targets they propose from year to year to fit into national environmental policies. Their way of thinking, based on clear indicators, is a good example, which can be applied in all areas in order to ease the transition to the new economic model required by the adoption of sustainable development policies.

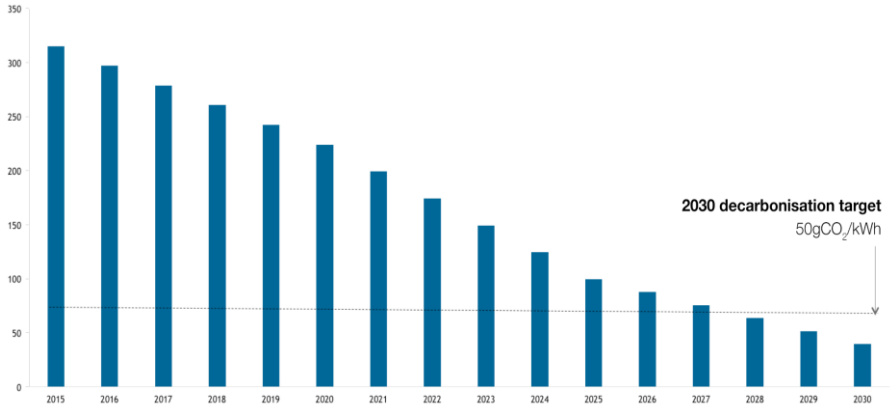

Fig. 4. Plan to reduce CO2 emissions from the energy sector in the UK (gCO2 / kWh), 5 May 2015

(Source: https://www.ecotricity.co.uk)

IV. CONCLUSIONS

It is essential to achieve equilibrium between environment, society and economy in order to meet present needs without compromising the ability of future generations to meet their own needs.

Society's expectations regarding sustainable development, transparency and legal accountability have developed in parallel with ever-stricter legislation and increasing environmental pressure due to pollution, inefficient use of resources, improper waste management, climate change, ecosystem degradation and declining biodiversity. This has led organizations to adopt a systematic approach to environmental management.

Environmental Management Systems (global ISO and EMAS mechanisms) are models for organizations to optimize production processes, reduce environmental impact, and efficiently use resources. From the perspective of Sustainable Consumption and Production, of the Sustainable Industrial Policy Action Plan, these are necessary directions to follow.

Adherence to European strategies and their transfer to national and county strategies is positive, but it is an "alignment".

The management of the institutions involved is dominated by bureaucracy, which does not sufficiently encourage innovation and cooperation to achieve the objectives assumed by Romania.

Only through education, continuous training, monitoring the performance of authorities with environmental responsibilities, as well as their cooperation with certification bodies can create a friendly environment for the continuous improvement of environmental management systems.

BIBLIOGRAPHY

ASRO, SR EN ISO 14001 (2015), *Environmental Management Systems. User Guide Requirements*

CRIŞU T. (2008), *Quality - Environment Audit, Theoretical Elements and Applications*, AGIR Publishing House, Bucharest

Dolj County Council (2015), *The Dolj County Economic and Social Development Strategy 2014 to 2020*

Governmental Decision No. 877/2018 on the adoption of the *2030 National Strategy for Sustainable Development of Romania*, Bucharest

LUPAN E. (2001), *Environmental Law*, Lumina Lex Publishing House, Bucharest

NEAGU C., NEAGU A. (2015), *Stages to Implement an Environmental Management System in an Organization*, Romanian Journal of Statistics - Supplement no. 10/2015

ŢUŢUIANU O. (2006), *Environmental indicators*, AGIR Publishing House, Bucharest

VĂDINEANU A. (1998), *Sustainable Development. Theory and Practice*, vol. 1, University Publishing House, Bucharest

The Engineering Universe Magazine (2018), no. 23/2018

*** (2002), A European Union Strategy for Sustainable Development, European Comission

*** (2002), World Summit on Sustainable Development in Johannesburg, South Africa, 2-4 September, 2002

https://sustainabledevelopment.un.org

http://www.dezvoltaredurabila.gov.ro

http://www.un.org.

http://www.cjdolj.ro

http://ec.europa.eu

http://www.anpm.ro

http://www.ddd.gov.ro

https://www.en.wikipedia.org

https://www.ecotricity.co.uk

http://www.societal.ro