УДК 331.1:502
JEL O44, L15, Q56, M59
DOI 10.18524/2413-9998.2023.3(55).302841

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THE IMPACT OF ENTERPRISE'S EMS ON ECOSYSTEM SUSTAINABILITY: FROM ISO 14001 REQUIREMENTS TO OPEN ENVIRONMENTAL POLICY AND SUSTAINABLE ENVIRONMENTAL BEHAVIOR

The article deals with the socio-ecological aspect of the environmental protection by an enterprise. The main goal of this article is the formation of a theoretical and methodological basis for a qualitative study of the impact of the company's environmental policy, namely ISO 14001, on the values and behaviour of its employees in the context of ensuring the sustainable development of the ecosystem in which the company is located. This study is the exploratory literature review based on a multidisciplinary approach.

The role and main features of the open environmental policy of the enterprise in the local socio-ecosystem are formulated in the article. The role of individual environmental behaviour of the company's employees in applying the company's open environmental policy to ensure the sustainability of the local ecosystem is formulated.

The main inconsistencies between ISO 14001 and the challenges of socio-ecosystems were revealed. The gaps in ISO 14001 were identified in the context of the formation of a sustainable model of environmental behaviour of employees. The sustainability of the model of individual environmental behaviour of the company's employees is considered as the ability to transfer environmental values from the workplace to private life. The stages of formation of a sustainable model of individual environmental behaviour of the company's employees are formulated.

As a result, the theoretical and methodological blocks of issues for analysing the enterprise's open environmental policy impact on the environmental values and behaviour of employees were developed. The formation of the questionnaires and the conduction of the survey should become the further stage of the research.

Keywords: environmental policy, enterprise, ecosystem, sustainability, EMS, ISO 14001, individual's ecological behavior model

Introduction. The enterprises are important elements of every local ecosystem, which have a powerful influence on its condition and

development. The implementation of the imperatives of sustainable development requires, among other things, that the processes of enterprise functioning ensure a positive impact on the state of the ecosystem, which, in turn, requires the establishment of an environmental management system (EMS), the creation and implementation of environmental policy standards. In modern conditions, the existence of a formed environmental policy of the enterprise is considered as an important component of systemic quality management.

The main factor in the effective implementation of environmental policy is human capital as a bearer of the necessary knowledge and skills, and the most famous tool for organizing environmental management is ISO 14001.

Recently, ISO 14001 has been criticized for the fact that its requirements lag behind the dynamic development and challenges of the external environment of the enterprises. At the same time, the requirements of ISO 14001 leave a large field for the company's initiative around environmental protection and mitigation of the negative effects of climate change. Therefore, the actual goal of the environmental management system based on ISO 14001 is to comply with measures to protect the environment and prevent its pollution while maintaining a balance with corporate goals. This means that the organization ensures the achievement of an external environmental effect through ecologically oriented management of internal business processes. Even if enterprises go beyond their own internal business processes to create and implement environmental innovations, such activities are linked to enterprise business processes through supply chains. In contrast to research on issues of green sustainable supply chains, this research is aimed at identifying opportunities for increasing the positive impact of enterprises on the environment (ecosystem) in the regional context.

The formation of a sustainable model of environmental behaviour of employees is investigated as a potential way to ensure the sustainable development of the city's ecosystem (or other local ecosystem) by the enterprise, provided that this model is scaled within the ecosystem. The sustainability of the model of individual environmental behaviour of the company's employees is considered as the ability to transfer environmental values from the workplace to private life. We assume that enterprises that conduct an open environmental policy into the socio-ecosystem where they are located form a more sustainable model of environmental behaviour of employees.

Literature overview. The concept of ecosystem was formulated by

ecologists but was then embraced by managers and the public community in general (Pickett & Cadenasso, 2002). Now, the concept of ecosystem is interdisciplinary, but most studies of the ecosystem are purely ecological in nature.

Until now, there are exogenous and endogenous approaches to determining a human's place in relation to the ecosystem. The question "Are people and their influence part of the ecosystem?" it was actively studied in the 90s of the 20th century, during the period of formation of environmental management as an independent scientific field. By the exogenous approach, the ecosystem is considered as the basis of human well-being, which consists mainly of "plants, animals, microorganisms, water, air, which interact with each other" (Mader et al., 2011). People and the organizations they form are presented as a social system that interacts with the ecosystem to form a social-ecological mechanism (Boons, 2013).

From the standpoint of the endogenous approach, "man is an element of the ecosystem and as its integral part cannot function outside of it" (Bąk, 2021). This approach was continued in the architectural direction of "biophilic design" (Ryan et al., 2023; Söderlund & Newman, 2015).

Oliver A. Houck (Houck, 1998) suggests using both approaches. "After examining several perspectives on the human role in the environment and legal regimes based on those perspectives, [he] proposes a perspective and a legal regime that bifurcates the question. While ecosystems contain humans, human actions are not their measure – or there is no measure. The best available measures of ecosystems are representative species that indicate their natural conditions. This measure taken, the role of human being is to manage ecosystems, and themselves, toward this goal."

From the systemic approach, the ecological and social systems should be considered as subsystems of the general socio-ecological system of a higher order. Du Plessis (Du Plessis, 2008) proposes that «cities should be understood as (1) complex, adaptive systems that are (2) integrated across spheres of matter, life and human social and cultural phenomena (or mind), (3) are structured as nested systems that allows interaction across scales and levels of organisation, and (4) that what differentiates cities (and social-ecological systems) from other types of ecosystems is the introduction of abstract thought and symbolic construction that allows for considered novelty, communication of ideas across time and space, and therefore learning, and reflexive thinking».

«The social production of ecosystems services can be related to resilience

and social–ecological systems, i.e. integrated complex systems in which humans are seen as part» (Berkes et al., 2008). R. V. Norgaard proposes "to use the term coevolutionary development for coevolution between society and nature that is valued as beneficial by humans". Coevolving two systems «have a causal influence on each other's evolution» (Kallis & Norgaard, 2010, p.691). He also draws attention to the fact that the coevolution of the social system and nature is not harmonious, that «coevolutionary relationships can be […] competitive parasitic, predatory or dominative». That is, we can talk about the socio-ecological system of the city, where the key issue is the interaction of these two subsystems, which are very different in their internal mechanisms.

The social component is important in the complex system of the city, since it generates certain internal conflicts with the environmental component. For example, the rapid development of cities and the associated development of new territories is not always carried out on the basis of rational city planning, taking into account environmental characteristics. According to (Botequilha-Leitão & Díaz-Varela, 2020) «urban systems and human settlements have been growing exponentially in size and complexity in the last decades, defying current approaches to sustainable development».

F. Boons described the social and ecosystem interaction as a "feedback loop", where both subsystems are in a dynamic state. The «disturbances in ecosystem dynamics caused by human activities feed back into the social system» (Boons, 2013).

F. Boons considered the consistent reaction of individuals and organizations to which these individuals belong, inside of the social system. But the social subsystem includes both organizations and individuals as separate elements (Fischer & Eastwood, 2016). Therefore, it is logical to consider two feedback loops: a) interaction of individuals with the ecosystem, b) interaction of organizations with the ecosystem. In the latter case (b), the reaction of the organization can occur in two ways: due to the previous reaction of individual employees, in particular top managers, or as a whole system.

ISO 14001 also outlines the organization's relationships with the external environment in two directions. «A systematic approach to environmental management can provide top management with information to build success over the long term and create options for contributing to sustainable development by:

– protecting the environment by preventing or mitigating adverse environmental impacts;
– mitigating the potential adverse effect of environmental conditions on the organization; …» (clause 0.2 Aim of an EMS) (DSTU ISO 14001:2015, 2016; PN-EN ISO 14001:2015-9, 2015).

An organization creating an EMS in accordance with ISO 14001 undertakes «to prevent adverse environmental impacts through prevention of pollution», as well as «to protect the natural environment from harm and degradation arising from the organization's activities, products and services» (clause A.5.2). All commitments together represent the organization's environmental policy. These obligations can apply both to the ecosystem as a whole and to its individual elements, for example, only to atmospheric air. The environment that is the object of the organization's EMS can be local, regional, and global (clause A.6.1.2). At the same time, the EMS organization must take into account different types of environmental impacts: direct, indirect and cumulative.

However, for the purpose of implementing environmental policy, the organization enters into relationships not only with the ecosystem(s), but also with other organizations and individuals that are elements of the social subsystem. Such organizations and individuals include the following:

– state and non-state organizations that carry out environmental management at the scale of the socio-ecological system (city, region, country, etc.),
– organizations and individuals with whom connections are established in supply chains,
– legal entities and persons who are customers and/or consumers of products (services, works),
– other legal entities and individuals interested in the environmental effectiveness of this organization.

All the above-mentioned subjects can be called interested parties with whom the organization enters into relations for the implementation of environmental activities. The organization itself also acts as a stakeholder in the socio-ecological system. It has certain motives for adopting and implementing environmental policy and expects certain benefits from it. The organization benefits from both the ecosystem and its stakeholders.

Stakeholders highly value their role in enterprises' implementation of improved environmental management practices and technologies. However,

their influence can have both positive and negative consequences when we consider the rational response of enterprises to the detailed demands of stakeholders (Simpson & Sroufe, 2014).

The organization should try to build cooperative relations with the interested parties. However, in addition to cooperation, the enterprise can compete with other organizations within the processes of interaction with the ecosystem and the implementation of environmental policy.

Competition of organizations for the best results of interaction with the ecosystem can be manifested a) in the processes of consumption of environmental services and b) in the processes of organizational influence on the ecosystem. The corresponding manifestations have the following form:

a) competition for natural resources,

b) competing for the highest evaluations of environmental performance results from customers and other interested parties.

The availability of environmental services is affected not only by their physical presence, competition, and the innovative and investment capabilities of the organization to ensure the rational use of resources, values, natural processes and the simultaneous preservation of the biodiversity of the ecosystem, but also by the decisions of the environmental management bodies of the socio-ecological system of the city, region, and country.

A significant part of the city's ecosystem, which ensures its development, determines the direction of development, is the management system. During the transition of the city's ecosystem to a sustainable future, it becomes even more important. The management system of the city is a complex socio-ecosystem with a complex structure (Muñoz-Erickson et al., 2016).

Pickett et al. (2013) identified key features of sustainable city management, among which attention should be paid to decentralization of environmental decision-making and public-private partnership.

Management systems in the phase of transition of cities to a sustainable state can use adaptive approaches (Folke et al., 2005), which ensure overcoming the resistance of outdated hierarchical structures, on-power-oriented approaches, and move to more flexible strategies based on broad participation of various stakeholders, which will promote social learning through management networks (van der Brugge & van Raak, 2007). However, it can be assumed that the organization as a stakeholder of the environmental policy of the city (region, region) will critically evaluate the decisions of environmental management bodies in the socio-ecological

system of the appropriate level (scale), because such decisions can stimulate, support, or inhibit its environmental activities.

Scientists point to the dynamic nature of the sustainability of the system. They view sustainability as a process based on the values and vision of several sectors of society (Childers et al., 2014).

The current objectives of the environmental policy of the EU countries and its direct connection with the sustainable development of the area reflect its essence (Fig.1).

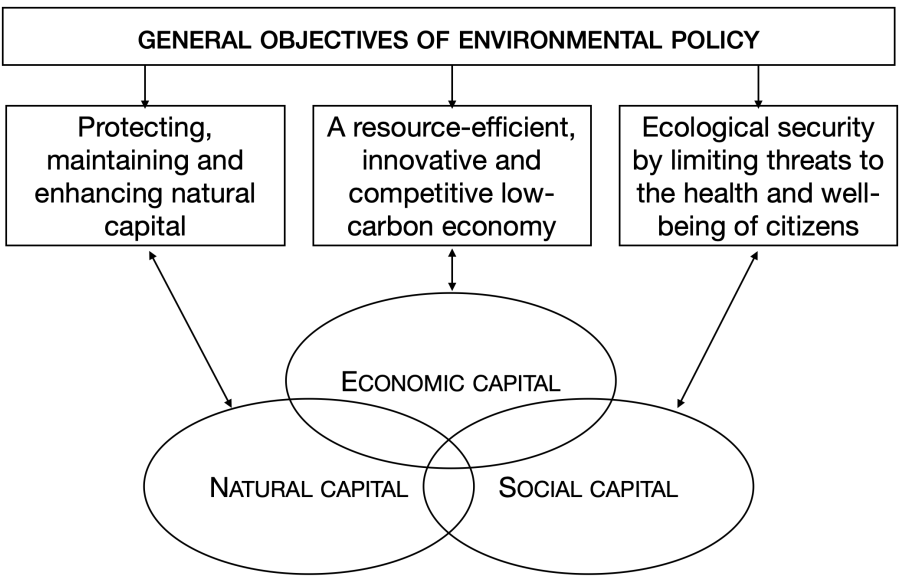

Fig. 1. General objectives of environment policy in EU countries

Source: developed by the author on the basis of (Rzeńca, 2016, p. 92)

Economic and legal actions of the EU in the field of ensuring the sustainable development of the region accelerated the processes of reforming environmental management at both the macro and micro levels. They allowed many enterprises of the EU countries to improve their environmental policy and increase environmental efficiency.

Planning and control of the company's actions aimed at the protection and maintenance of natural capital is facilitated by the Classification of Environmental Protection Activities (CEPA). "The International Standard

Statistical Classification of Environmental Protection Activities and Expenditures (CEPA 2000) is used worldwide as a tool for defining environmental protection and as a reporting tool for research." (Józwicka Renata et al., 2022, p.13). The economic component is usually tied to the environmental component. They are expressed in the complex economic-environmental objectives of the enterprise. Environmental goals related to the social aspect of sustainable development need clarification.

According to the concept of sustainable development of systems, the social aspect of environmental policy of enterprises should be aimed at citizens (Fig. 1). However, it is necessary to pay attention to the fact that citizens act simultaneously in different roles within the socio-ecosystem. Thus, the people of working age can simultaneously be employees of organizations (in the field of work life) and ordinary citizens (in the field of private life). That is, the employees of an enterprise change their role in the socio-ecosystem every day, moving from the work sphere to the sphere of private life and vice versa, and the model of their ecological behaviour can be a factor influencing the sustainability of the local ecosystem both through the activities of the enterprise and individual activities in private life. Based on this, we assume that the environmental policy of the enterprise can affect the sustainability of the model of environmental behaviour of employees, and thanks to this, strengthen the impact on the sustainability of the ecosystem of its location. The sustainability of the model of environmental behaviour of the company's employees is considered as the ability to transfer environmental values from the workplace to private life. In addition, we assume that an enterprise's EMS must have certain characteristics to influence the sustainability of employees' values and behaviour. In our research, we are focused on an EMS built according to the requirements of ISO 14001.

This aspect of the impact of EMS on ecosystem sustainability is very little studied. The study of this aspect requires an interdisciplinary approach.

Aim and scope. The main goal of this article is the formation of a theoretical and methodological basis for a qualitative study of the impact of the company's environmental policy, namely ISO 14001, on the values and behavior of its employees in the context of ensuring the sustainable development of the ecosystem in which the company is located. To achieve the goal, it is necessary to find answers to the following questions:

a) what challenges are relevant for enterprises' EMS?
b) do the requirements of ISO 14001 meet the challenges of the socio-

ecosystem(s)?

c) what stages does the model of environmental behavior of the company's employees go through?

d) what factors influence the formation of a sustainable environmental behavior model of the company's employees?

Methodology. The goals are achieved with a multidisciplinary approach by analysing research. The exploratory literature review covers various areas of management, including environment management, quality management, human resource management, organizational change management, business sustainability management, supply chain management, risk management, as well refers to some issues in the fields of psychology and sociology.

The selection of business sections that meet the objects of the study was based on the following criteria: environmental burden for the ecosystem; and promoting the improvement of the ecological state of the ecosystem. Based on the results of the selection, the following are included in the target sample of the business: Manufacturing (section C), Electricity, gas, steam, and air conditioning supply (section D), Water supply, sewerage, waste management and remediation activities (section E), Construction (section F), Wholesale and retail trade (section G), Transportation and storage (section H), Accommodation and food service activities (section I), Information and communication (section J), Human health and social work activities (section Q) part 'hospitals and other healthcare organizations'.

Research results and discussion.

Open environmental policy and EMS based on ISO 14001 of an enterprise. The conceptual representation of the place of the organization in the socio-ecological system of the city is illustrated in Fig. 2. This scheme is the quintessence of literature review.

The analysis of the literature allows us to conclude that an effective environmental policy of an enterprise in a socio-ecosystem should be open to external interaction, cooperation (Fig. 2) and adaptation to changes. The openness of the environmental policy, in our opinion, is very important for ensuring the sustainability of the system, as it allows the enterprise not only to respond to external pressure and demands, but also to disseminate its environmental values and model of pro-environmental behavior to other participants of the socio-ecosystem. In this manner of regular organization's interaction with the external environment, the sustainable development of the socio-ecosystem and organization should occur simultaneously. One of the

markers of sustainable development of the organization, in our opinion, is a sustainable pro-environmental model of behavior of its management and other employees. They are carriers of values that either stimulate or, on the contrary, inhibit company's efforts aimed at protecting and improving the ecosystem.

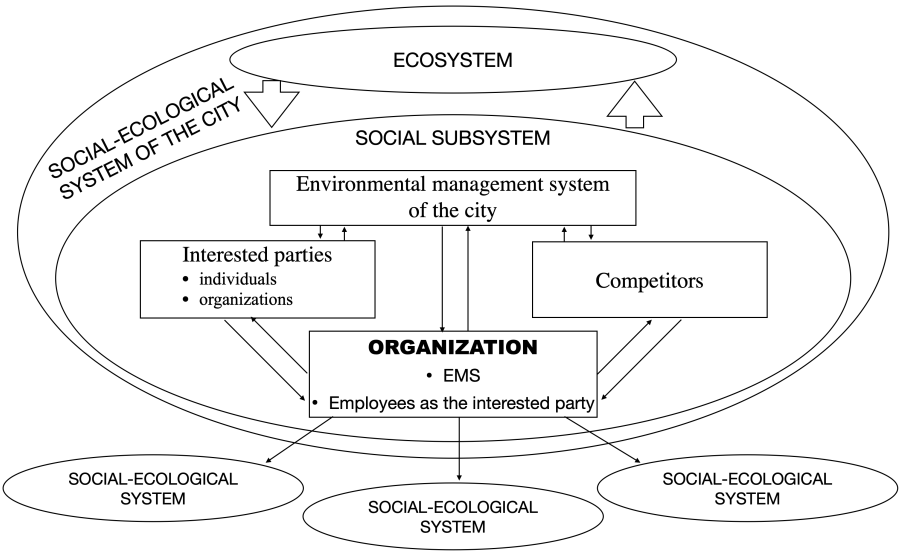

Fig. 2. Conceptual framework for an organization's place in the socio-ecological system of the city.

Source: developed by the author

All multi-vector communication and cooperation of the enterprise in the field of protection and improvement of the environment should be based on sustainable information exchange, accumulation of knowledge, and supported by innovation and investment activities.

Such conclusions allow us to assume that the openness of the environmental policy is expressed, among other things, in the willingness and ability of the enterprise to go beyond its own business processes both in supply chains and within the local socio-ecosystem in which it is located.

The strategic relevance and effectiveness of the implementation of the company's environmental policy depends on its EMS. The most common tool for EMS formation in Europe and the world is ISO 14001.

Some positive changes towards an open environmental strategy are

already taking place at enterprises in European countries. For example, a study (Mosgaard et al., 2022) conducted in Denmark revealed the following trends in the development of environmental goals of enterprises: a) going beyond the scope of own operational processes and expanding the scope of the enterprise's environmental activities into various aspects of logistics chains; b) introduction of new environmental goals without waiting for requests from customers. Some organizations have environmental goals that go beyond their own production processes and operations, such as biodiversity, design, circular economy, life-cycle assessment, supplier, and product requirements.

However, Mosgaard et al. confirmed that the company's environmental goals are focused on internal processes. At most enterprises, the top managers of enterprises set environmental goals solely on the basis of their own perceptions of external needs, without involving customers in the process of environmental policy formation. After the level of maturity of the environmental subsystem of the enterprise reaches almost the highest level, enterprises show difficulties in making decisions about the further development of environmental goals, especially in those areas that are not directly related to their internal processes.

Mosgaard et al. also concluded that changes in environmental perception are occurring at a faster rate than the ISO 14001 update.

ISO 14001 focuses on the life cycle of products. The standard provides the following typical stages of the product (or service) life cycle: "purchase of raw materials, design, manufacture, transportation/delivery, use, end-of-life treatment and final disposal". However, attention is drawn to the fact that for the purposes of environmental management, only those stages that can be controlled by the organization, or on which the organization can influence in a certain way, are important. It is these stages of the product life cycle that are taken into account in the process of determining environmental aspects (clauses 6.1.2, A.6.1.2).

The organization itself decides how many stages of the production (service) life cycle it will cover with environmental management, and also «determines the extent of control it is able to exercise, the environmental aspects it can influence, and the extent to which it chooses to exercise such influence» (art.A.6.1.2). If an organization tries to cover as many stages of the product (service) life cycle as possible, this will increase the complexity of its environmental management system (EMS). The complexity of EMS

will also increase with the increase in the variety of products (services), technologies and resources of the organization, with the increase in the number of suppliers, channels, and sales markets. To a certain extent, the complexity of EMS can be reduced by grouping products (services) with common characteristics to define the environmental aspects that the organization manages. However, this way will only partially solve the problem of EMS complexity. Then, it is logical to assume that a complex organization will try to reduce (limit) the number of life cycle stages of products (services) covered by environmental management on its part.

The stages of the life cycle of products (services), which are covered by the environmental management of the organization, can be contained within the ecosystem of one region, and can take place in the ecosystems of different regions. In the case when the organization carries out environmental management in different regional ecosystems, it can be assumed that these ecosystems have different importance for the environmental management of the organization. That is, the regional ecosystems where the organization carries out environmental management will have a certain rank for its EMS. Accordingly, it should be expected that the intensity of the organization's connections with each regional ecosystem will be different.

The results of the study of the effectiveness of the company's EMS emphasize the importance of the role of the top management of the company in the formation of active pro-environmental behaviour of employees (Kim et al., 2020).

ISO 14001:2015 does contain certain strengthening of the role of top management compared to the previous version, such as «improved top management commitment», «improved internal and external communication» as well as «alignment with business strategy» (Fonseca & Domingues, 2018), we do not found clear confirmations of the requirements of an innovative style of management in the standard, as well as requirements that stimulate the use of a balanced economic and ecological approach to making management decisions[1]. Therefore, the top management's own setting, motivation and management style remain an important factor affecting the effectiveness and development of an organization’s EMS. «Firms valuing the extrinsic rewards of ISO14001 certification more than the potential for

1. As a balanced economic-environmental approach we mean a balanced focus on the financial results and environmental goals of the enterprise on the part of the top management, as required by the concept of sustainable development.

intrinsic benefit will have less innovative environmental management practices» (Simpson & Sroufe, 2014).

ISO 14001 and employee's ecological behaviour model. The analysis of the provisions of ISO 14001 and ISO 14004 (PN-EN ISO 14004:2016-04, 2016) showed that the ISO EMS model use the principle of selectivity (or priority) with the company's personnel. Persons «performing work under the control of an organization who affect or may affect its environmental performance» (including managers) should be involved in environmental activities of the organization (clause 7.2 ISO 14001 and ISO 14004). The boundaries of the EMS can cover the entire organization or its specific structural divisions (clause 4.3 ISO 14001 and ISO 14004). Based on the foregoing, we can make the following assumptions: 1) within the EMS it is possible to identify clusters of employees who are connected or not connected to the EMS, 2) the boundaries (scope) of the EMS are quite conditional.

The main requirement of ISO 14001 for persons involved in EMS is their competence, which is necessary to fulfill environmental goals and objectives and achieve environmental performance by the organization. Competence is formed on the basis of knowledge, understanding, skills or professional qualities. Therefore, ISO 14001 proposes the following concept of «human resources» (as one of the possible) that can be applied by an organization: «specialized skills and knowledge» (clause A.7.1) That is, the expected transformation of the model of environmental behavior of personnel with the introduction and development of EMS according to the requirements of ISO 14001 should occur at the level of knowledge and skills. This, in turn, requires the establishment of a certain information turnover at the enterprise using various methods and forms, in particular through training.

Organizations can hire employees with ready-made competencies. However, even their knowledge and skills must undergo transformation in new conditions for them since each EMS and organization are unique.

Among the organizational and human factors that relate to rational nature use, the most relevant and least researched is environmental training (ET). C. J. Jabbour (2015) investigated the relationship between environmental training of personnel and the maturity of the environmental management system of the enterprise in Brazil. The results of the study confirmed the existence of a link between ET and the maturity of the environmental management system of the enterprise. This confirmed the conclusion of other researchers that increasing the level of environmental

maturity of a company is influenced not only by technical factors, but also by organizational and human factors that are associated with training and motivation of employees of the organization to achieve its environmental goals (Graves et al., 2013).

Studies of the activities of enterprises that in recent years have been actively developing the environmental aspect of their activities have proven the existence of a positive link between the environmental management system and the practice of green HRM (Yue et al., 2023). In addition, studies have shown that EMS and green HRM are positively associated with organizational citizenship behaviour for the environment, and organizational citizenship behaviour for the environment (OCBE) is positively associated with Triple Bottom Line (TBL). It has also been confirmed that environmental HR and OCBE practices have consistently established the relationship between EMS and TBL performance among ISO 14001 certified manufacturing firms.

The content of the information that should be received by all employees involved in the EMS and the information that should be discussed within the EMS is presented in ISO 14001 and ISO 14004 in different clauses, which creates certain difficulties in applying the requirements in enterprises. In addition, the concept of «exchange of information» (clause 7.4) covers information that is transmitted only in one direction, and information that involves a certain discussion and iterative exchange. In fact, these are two different approaches to the organization of information exchange that should be considered as different requirements. The two-way process of information exchange is clearly defined in relation to external exchange between the organization and external stakeholders: «Communication is a two-way process, in and out of the organization» (ISO 14001, clause A.7.4). The standard (ISO 14063:2020, 2020) even provides for the development of a separate environmental communication policy and environmental communication strategy for implementing the organization's environmental communication policy for the implementation of the company's external communication.

The division of EMC information into two groups allows us to conclude that the organizing the discussions is the enterprise's own initiative for most types of mandatory (regulated by the standard) information. Such limitation by the requirements of the standard, on the one hand, opens the space for actions for management of different levels in EMS, on the other hand, it creates grounds for the use of an authoritarian style of management, which

may restrain the development of EMS.

The first important document that is developed by the organization in the process of implementing ISO 14001 and with which all employees involved in the EMS should be familiarized is the environmental policy. The environmental policy is the basis for the development of the EMS objectives, with which all employees of the enterprise involved in the EMS must also be familiarized.

The environmental policy should cover all commitments to the requirements that the organization has accepted as mandatory for compliance. Unfortunately, companies often select only the legal and other requirements that cannot be avoided, which does little to distinguish them from other organizations that do not implement ISO 14001 but adhere to established legal norms regarding environmental aspects (Fortuński, 2008). From our point of view, the level of maturity of EMS with such environmental policies and goals can be taken as basic. B. Fortuński points out that even in this case, organizational training and raising of environmental awareness of personnel takes place at the enterprise implemented ISO 14001. However, such an environmental policy cannot be considered open, since it only reflects on mandatory external requirements, but does not go out into the external environment with its own proposal. For example, an enterprise can independently establish requirements based on studies of the needs of interested parties or formulate them on a contractual basis with other organizations (for example, such organizations that create an association or are part of a cluster) and accept them as mandatory for compliance.

At the basic level of EMS maturity, the nature of the goals does not require creativity from all employees of the enterprise. Most often, at this stage of system development, the enterprise should focus on its own processes, investment and financial issues. Such conclusions allow us to assume that the EMS, which is at the lowest level of maturity, does not contribute to the formation of the environmental component of the organizational culture at the enterprise. Organizations often balance this lack of EMS with HRM functions. M. Wagner believes that ‘green’ HRM «is a subset of sustainable HR management where the latter also comprises corporate social responsibility (CSR) issues» (Wagner, 2013, p. 444). some researchers point to the primary role of environmental culture for the socialization of employees in accordance with the company’s environmental strategy. «Once an environmental corporate culture is formed, individual

behavioural changes are assumed to be most likely» (Muster & Schrader, 2011, p.143). From our point of view, the environmental policy and environmental goals of the organization from the moment of their development should include the task of the formation of environmental behaviour of employees.

Factors of forming the individual ecological behavior models in work and private life. The concept of «human behaviour» is complex and multifaceted. Different aspects of human behaviour are studied by different branches of science. Human behaviour at the general level is defined as external manifestations of certain internal processes that occur as a result of interaction with the external environment at various levels, for example, biochemical, biophysical, informational, psychological.

The principles of systems theory were applied to the study of human behaviour thanks to the interdisciplinary science – social ecology. Social ecology, like economic sciences, is aimed at explaining changes in people's behaviour, in contrast to sociology, which deals with explaining patterns of behaviour that have formed over a long historical period.

From the standpoint of a systems approach, the model of organizational behaviour is considered at the micro, meso-, and macro-levels of the company (Ashkanasy & Dorris, 2017). This means that the EMS should cover all levels of the company with its actions in order to form a model of environmental behaviour of employees. At the micro level, the focus is on the behaviour of the individual, at the meso-level – the behaviour of a group of employees, at the macro level – the behaviour of the organization as a whole system.

ISO 14001, which is the basis of most EMS in European countries, does not contain direct instructions regarding the impact on the behaviour of employees. These tasks are left to the sole discretion of the company's management, namely HRM. However, scrutinizing of the standard allows us to conclude that its requirements, which relate to the impact on employees, have a clear focus on the micro-level, that is, on the individual behaviour of employees, as well as on the meso-level, represented by the structural units of the organization. Regarding the macro level of organizational behaviour, ISO 14001 only contains requirements related to the physical work environment and changes in the EMS.

The behaviour of people in the economy ('homo oeconomicus' model) «is characterized by limited knowledge, which is expanded if found worthwhile. Incentives are produced by preferences and constraints, which are strictly

distinguished. Changes in human behaviour are attributed (as far as possible) to observable and measurable changes in the opportunity set determined by the constraints. Behavioural changes are thus not attributed to non-observable and non-measurable preference changes. This procedure enables us to develop theoretical hypotheses and to test them empirically» (Frey, 2013, p.6).

If you apply this economic approach to the case of creating an EMS at an enterprise, then the organization's decision to create an EMS according to ISO 14001 can be interpreted as a recognition of the feasibility of developing environmental knowledge related to its activities. If we continue to follow the economic approach to organizational behaviour, the enterprise must change certain constraints faced by its employees in such a way that these changes force the employees to change their priorities (preferences) according to the established environmental goals. However, the standard requires first to establish specific roles for each employee covered by EMS actions. Such a role involves the implementation of clearly established rules, norms, duties, functions and powers, and mandatory compliance with the competencies defined for the workplace (position). By its nature, this approach corresponds to the 'homo sociologicus' model, where decisions about the actions of an individual are made by the society in which he is located. Even the employee's creativity and innovation are a regulated norm of the standard because these actions are necessary for the regular improvement of the EMS. The top management of the ISO 14001 enterprise also has its own role – the role of leader, strategist, and controller.

The society in which a person is located has a strong influence on his behaviour, in particular through the patterns of behaviour that a person observes, evaluates and shares or condemns. Research has proven the importance of the pro-ecological behaviour of the organization's management as a factor influencing the pro-ecological behaviour of employees, namely the desire of employees to go beyond the established boundaries of the role at the workplace (Kim et al., 2020). Eco-behaviour of individual employees (active leaders of the company's environmental policy) in the form of eco-initiative, eco-civic engagement, eco-helping (Boiral & Paillé, 2012) can gradually be taken over by colleagues under the condition of favourable support and encouragement of such actions.

A model of behavior where an employee is self-motivated to take the initiative in EMS-related actions is called "organizational citizenship behavior for the environment." This model is economic in nature, where the employee

has a choice and uses it in certain situations. To stimulate the self-motivation of employees towards extra-role voluntary environmental behaviour, an important factor is the expansion of employees' opportunities in making environmental decisions. Ramus and Killmer (2007) found evidence that organizational support is a dominant motivational factor for extra-role behaviour.

Thus, in the process of changing the behaviour model of employees as a result of the implementation of EMS according to ISO 14001, at least two stages can be defined: 1) changes within the framework of the individual role in the organization, which is expressed in new requirements for competencies, duties, functions and powers; the updated role is mandatory; changes occur due to external stimulation and motivation; 2) the presence of an internal need to go beyond the established role; self-motivation to improve environmental performance in one's own workplace and on a wider scale in the organization.

The incentives appear as a result of changing the limitations of employees' capabilities. In the context of EMS, the term 'possibilities constraints' of employees means certain limits of conditions that are created for employees in order to shape their environmental behaviour. Thus, we proceed from the fact that the management of the enterprise sets restrictions in such a way as to encourage the employee to comply with the environmental norms, rules, and procedures adopted by the enterprise. Then, it should be expected that the employee will constantly evaluate the extent to which the obtained opportunities are equivalent to the actions expected from him by the management of the enterprise. The opportunities that the employee receives to perform the actions expected of him should be aimed at certain internal characteristics and feelings of the individual, which will help to form a stable desire to perform environmental actions. Among the universal characteristics that we find in various studies of individual employee behaviour, the following should be noted: the presence of similar experiences, selfishness, survival, aspirations, and a sense of satisfaction (Ashkanasy & Dorris, 2017; Collard, 1981; Costa & McCrae, 2008; Frank, 1988; Frey, 2013).

To answer the question of how stable an employee's environmental behaviour can be within the framework of an EMS in an enterprise, it is important to understand the gap between the employee's emotions that he expresses as part of his professional role and his true feelings. This gap, conveyed by the term 'emotional labour' (Ozcelik, 2013), has an impact on the mental and physical health and well-being of the worker. Furthermore,

discrepancies between true emotions (how the employee actually feels) and displayed emotions or external actions (what the employee is required to emotionally display) are associated with negative organizational consequences, such as increased emotional exhaustion and reduced commitment (Ashkanasy & Dorris, 2017; Groth et al., 2009).

In the literature, in addition to the model of behaviour in the organization, a model of behaviour in private life is distinguished. Several studies have proven the existence of connections between these models of human behaviour, which appear in the form of a complex interaction between human roles (Lambert, 1990). In the context of human environmental behaviour, two models are also considered: in the working and private spheres of life. Based on the system approach and the concept of the social model of human behavior we may resume that an individual will have different behavior models in different systems because he is influenced by different factors in different social systems.

Despite the existence of a connection between models of environmental behaviour of a person at work and in private life, the closeness and specifics of such a connection can be different. Sometimes there is even a gap between these models. For example, a study (Fritz et al., 2010) examined employees' levels of psychological detachment on weekends away from work and how this was related to higher well-being and affect (Ashkanasy & Dorris, 2017).

In other cases, there may be a tendency to converge environmental behaviour at the workplace and in private life. Models can support each other. For example, there is a positive relationship between an employee's personal inclination to protect the environment and his motivation to engage in corporate environmental behaviour (Ramus & Killmer, 2007, p.558). W. A. Khan (1990) pointed out that motivation theory makes it possible to conclude that the more employees can bring their whole individuality to work [that is, their beliefs from their private lives], the more engaged they feel.

Some people are able to transfer their social and environmental beliefs from private life to the workplace on their own initiative and to play an important role in spreading a model of behaviour oriented towards the sustainable development of the organization. Various terms have been introduced in the literature to characterize such employees: 'green employees' (Ciocirlan, 2017), 'talented new staff that lead to EMS implementation' (Wagner, 2013), 'sustchange agents' (Bliesner et al., 2013).

Border theory (Clark, 2000) proves the existence of two-way

connections between patterns of human behaviour in various spheres of life. The notion of Green Work-Life Balance, a relatively recent concept compared to the boundary theory, highlights the presence of reciprocal influence between sustainability-focused values, relationships, and experiences in one's personal life and person's behaviour in the professional setting (Muster & Schrader, 2011, p.148). However, it should be noted that in an organization, a person often does not have the freedom to choose whether to apply his experience from his personal life at the workplace, because there are established rules and boundaries of the work role.

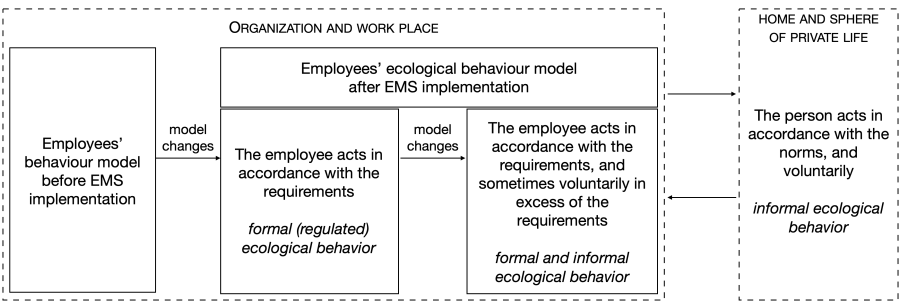

Fig. 3. Interaction between the individual ecological behavior models in work and private life

Source: developed by the author

The commonality of the professional and private spheres of a person's life, which allows us to transfer the features of ecological behaviour from one sphere to another, lies in the process of resource consumption. The influence of the model of ecological behaviour at work on ecological behaviour in private life is manifested in the consumption of (resources, products) in an environmentally friendly way.

We have defined the blocks of questions for employees and top managers to study of the impact of the company's environmental policy on the environmental values and behavior of employees.

The methodology should address employees (without top managers) and should contain the following blocks of research questions:

– characteristics of the environmental role of the employee at the enterprise;
– assessment of the impact of organizational environmental policy on the

model of employee behaviour within the framework of the established environmental role;
- identifying the depth of the gap between the emotional labour of the employee within the framework of the established role and his true feelings regarding the environmental aspects of the activity;
- characteristic of extra-role voluntary environmental behaviour of the employee in the organization;
- revealing the depth of the gap between the environmental behaviour of the employee in the organization and in private life.

The analysis should contain the following blocks addressed to top managers:
- study of motives for implementing ISO 14001 at the enterprise;
- description of the connections between the company's environmental policy and the city's ecosystem;
- characteristics of the company's relations with agents of the social subsystem (the city's ecological management system, interested parties, competitors) of the city's socio-ecological system;
- identification of stimulating and inhibiting factors of deeper integration of enterprises with the ecosystem, taking into account the processes of cooperation and competition.

Conclusions. The provisions of ISO 14001 do not conflict the company's open environmental policy. The ISO 14001 contains requirements for the leadership role of top managers, the organization's interaction with stakeholders, the need to develop competencies and knowledge of the employees. However, the ISO EMS model is reactive rather than proactive. We did not find clear confirmation of the presence of requirements for an innovative management style in the standard, as well as requirements that stimulate the use of a balanced economic and ecological approach to management decision-making. ISO 14001 is focused on the internal business processes of the enterprise. Therefore, enterprises with the highest level of EMS demonstrate difficulties in making decisions about the further development of environmental goals, especially in those areas that are not directly related to their internal processes. The identified shortcomings of ISO 14001 reduce the role of the standard as a universal EMS certification model. However, ISO 14001 remains a reliable tool for building an EMS with the basic level maturity.

ISO 14001 does not contain the notion of a model of individual

environmental behaviour. Although the concepts of "green HRM" and "organizational citizenship behaviour for the environment" exists and is developing in the theory and practice of HRM. Models of individual behaviour in social subsystems, such as the workplace and private life, are studied by psychologists and sociologists.

The requirements of ISO 14001 related to the transformation of knowledge and skills of personnel involved in EMS are bureaucratic, do not provide for the creation of conditions for discussion, do not stimulate the creativity of personnel, have a high degree of personalization with an emphasis on the achievement of appropriate competence by the employee to perform the defined functions and tasks, do not contribute to teamwork. The analysis of ISO 14001 and ISO 14004 provisions showed that the ISO EMS model incorporates the principle of selectivity (or priority) in relation to the company's personnel. This made it possible to assume that within the influence of EMS it is possible to identify both clusters of employees who are connected or not connected with EMS, which can be manifested in the unequal treatment of the company towards employees in the matter of forming their model of environmental behaviour.

We assume that enterprises that conduct an open environmental policy in relation to the socio-ecosystem where they are located form a more sustainable model of environmental behaviour of employees. We used a multidisciplinary approach to conduct the research. As a result, we formulated a theoretical and methodological basis for a qualitative study of the impact of the company's environmental policy, namely ISO 14001, on the values and behaviour of its employees in the context of ensuring the sustainable development of the ecosystem in which the company is located. The further stage of the research should be the formation of questionnaires and conducting a survey.

Acknowledgement. This research was funded by European Economic Area (EEA) Financial Mechanism and the Norwegian Financial Mechanism 2014-2021 under the «Scheme: Support for Ukrainian researchers under Bilateral Fund of 'Applied Research' Programme».

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Стаття надійшла 1.12.2023 р.

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ВПЛИВ СЕУ ПІДПРИЄМСТВА НА СТІЙКІСТЬ ЕКОСИСТЕМИ: ВІД ВИМОГ ISO 14001 ДО ВІДКРИТОЇ ЕКОЛОГІЧНОЇ ПОЛІТИКИ ТА СТІЙКОЇ ЕКОЛОГІЧНОЇ ПОВЕДІНКИ

Стаття присвячена найменш дослідженому соціально-екологічному аспекту діяльності підприємства з захисту довкілля. Це дослідження спрямоване на виявлення можливостей збільшення позитивного впливу підприємств на навколишнє середовище (становище екосистеми) в регіональному контексті на відміну від досліджень питань сталості та екологічності ланцюгів постачання.

Основною метою даної статті є формування теоретико-методичного підґрунтя якісного дослідження впливу екологічної політики підприємства, а саме ISO 14001 на цінності та поведінку своїх працівників в контексті забезпечення сталого розвитку екосистеми, в якій підприємство розташовано.

Поставленні питання вирішуються шляхом аналізу досліджень на основі мультидисциплінарного підходу. Огляд літератури охоплює різні напрямки менеджменту, зокрема екологічне управління, управління якістю, управління людськими ресурсами, управління організаційними змінами, управління стійким розвитком бізнесу, управління ланцюгами поставок, управління ризиками, а також торкається сфер психології та соціології.

Сформульовано роль та основні особливості відкритої екологічної політики підприємства в соціо-екосистемі, в якій підприємство розташовано. Сформульовано роль індивідуальної екологічної поведінки працівників підприємства у використанні відкритої екологічної політики підприємства для забезпечення сталості локальної екосистеми.

Виявлено основні невідповідності ISO 14001 сучасним викликам соціо-екосистем. Виявлено пробіли ISO 14001 у контексті формування сталої моделі екологічної поведінки працівників. Стійкість моделі екологічної поведінки працівників підприємства розглядається як спроможність переносу екологічних цінностей з робочого місця до приватного життя.

Сформульовано етапи формування сталої моделі індивідуальної екологічної поведінки працівників підприємства.

В результаті дослідження сформульовано блоки питань, адресованих працівникам і топ-менеджерам підприємств, які є теоретико-методичним підґрунтям аналізу впливу відкритої екологічної політики підприємства на екологічні цінності та поведінку працівників. Формування анкет і проведення обстеження має стати подальшим етапом дослідження.

Ключові слова: екологічна політика, підприємство, екосистема, стійкість, система екологічного управління (СЕУ), ISO 14001, модель екологічної поведінки індивідуума.

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