Integrated management systems as a basis for sustainable development

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Abstract. The issue of the urgency of the development and implementation of an integrated type of systems into management systems that combine mechanisms of safety management and hygiene of production processes and environmental safety were considered. Considering the purposes of sustainable development that form the priority directions of development of society, economy, industry and nature management, five main blocks that are responsible for the development of such areas as "SOCIETY", "HEALTH", "FINANCE", "LABOR PROTECTION", "ECOLOGY" are identified. All of these directions are cemented and have an extensive spectrum for cooperation and development, thanks for their combination, based on the security aspect. Therefore, among the sustainable development purposes there is one more parameter that influences the achievement of the set purposes, the factor "SAFETY" that integrates all the previously defined directions. An effective security strategy today is a risk-oriented approach based on risk assessment and selected strategies for influencing them. The using of integrated systems of enterprise management that combine the impact on the safety and hygiene of production processes and environmental safety of production, especially in industries with remote environmental impacts and significant health consequences for employees engaged in these industries allows to consider the issues of assessing existing and predicting the emergence of new risks more weighed, more reasonably and with less amount of resources.

The concept of sustainable development is aimed at the harmonious development of the three components - economic growth, environmental well-being and social equality. Today 17 sustainable development purposes (SDP) and 168 indicators of their achievement have been substantiated [1].

Among 17 SPD 4 – directly related with the state of health of nation and specifically a person – SPD 2, 3, 6 and 11; 6 – connected with the safety of production processes and professional activities – SPD 3, 5, 8, 9, 11 and 12; 7 – show interest in environmental improving – SPD 6, 7, 11-15 and 14 – focused on social inequality overcoming– SPD 1-12, 16, 17 (Figure 1).

A graphical interpretation of the SPD by the directions of influence of «HEALTH», «LABOR PROTECTION», «ENVIRONMENTAL SAFETY» and «SOCIETY», is shown in Figure 1 and presentation of these data is in the form of a table (Table 1), taking into account the «FINANCES» component and identify purposes that integrate three, four or all five directions and create an impact on economic stability to maximize their value by separating them as a component of "SAFETY" in the issue of achievement of sustainable development.
**Figure 1.** Orientation of sustainable Development Goals: "HEALTH", "LABOR PROTECTION", "ECOLOGY", "SOCIETY", «FINANCES» and "SECURITY"

**Table 1.** Purposes of sustainable development and their impact

| No | SPD | Purposes | Health (H) | Labour Protection (LP) | Ecosystems (E) | Society (S) | Finance (F) | Safety (St) |
|----|-----|----------|------------|------------------------|----------------|-------------|-------------|------------|
| 1. | Poverty overcoming. | | + | + | | | | |
| 2. | Hunger overcoming, achieving food safety, improving nutrition, promotion of sustainable development of agriculture. | | + | + | | | | |
| 3. | Good health, a healthy lifestyle, well-being for all. | | + | + | + | + | | |
| 4. | Comprehensive, quality education during the whole life. | | | | + | | + | |
| 5. | Gender equality, women's empowerment. | | | | | + | + | |
| 6. | Availability and rational using of water resources, proper sanitation. | | + | + | + | + | | |
| 7. | Inexpensive, reliable, sustainable, clean, modern energy sources. | | | | + | + | + | |
| 8. | Decent work, full and productive employment, economic growth. | | + | + | + | + | | |
| 9. | Industrialization, innovations, infrastructure development. | | | | + | + | + | |
| 10. | Reducing inequalities within and between countries. | | | | | + | | |
| 11. | Openness, safety, sustainability and environmental sustainability of cities and communities. | | + | + | + | + | + | |
| 12. | Rational responsible consumption and production. | | + | + | + | + | + | |
| 13. | Overcoming the effects of climate change and struggling with factors that provoke it. | | | | | | + | |
| 14. | Preservation of marine resources. | | | | | | | + |
| 15. | Protection and recovery of land ecosystems. | | | | | | + | |
| 16. | Peace, fairness, justice. | | | | | | | + |
| 17. | Global partnership for SD. | | | | | | | + |

*Note.* Table 1 uses the following abbreviations: H - "HEALTH", LP - "LABOR PROTECTION", E - "ECOLOGY", S - "SOCIETY", F - "FINANCE", St - "SAFETY".
The issue of professional selection, medical accompaniment (periodic medical checkups and medical conclusion before employment), implementation of health-saving methods at work and in life [2], using of effective physiologically sound modes of work and rest, eco-friendly materials and environmentally friendly production processes is connected with the improvement of safety of the person and society in general. It will be much easier to achieve the desired effect by using integrated management systems that combine directions of labour protection and ecological safety into a single system for managing ecological and technological safety of production.

The concept of ecological and technological safety of production is based on the integrated perception of ecological and technogenic components of human and environmental hazards within the framework of performing socially actualized production activities at high-risk objects.

In conditions of economic crisis and orientation of all developed countries on achieving of purposes of sustainable development let us consider which role in this process is played by labor protection and environmental safety. Among the priorities of the state is the operation of a development strategy, the creation of a legislative base, control and fiscal bodies, government programs to support businesses and certain sectors of the economy, the development of progressive sectors of the economy and financial institutions. In developed countries, the development of state-level sustainable development strategies began in the 1990s, Sweden, the United Kingdom, Switzerland and Ireland became the flagships of this process, and have been reviewed since then [3]. In EU countries, the principle of sustainable development is enshrined in the founding Amsterdam treaty of the EU in 1997 and recognized as key to all politics of EU countries. Therefore, any sectoral or regional development strategies in these countries are subordinated to the achievement of the global sustainable development purposes.

In 2015 Ukraine on the way of the euro integration process also adopted a declarative document Sustainable strategy «Ukraine 2020»[4], the main purpose of which was the introduction of European standards in life and achievement leading positions in the world. Achieving this purpose should be based on the implementation of four main vectors:

- the vector of development - the ensuring sustainable development of the state, carrying out structural reforms and, as a consequence, raising living standards;
- the security vector - the providing guarantees for the security of the state, business and citizens, protection of investments and private property, where particular attention should be paid to the safety of life and human health;
- the vector of responsibility – providing guarantees that every citizen, regardless of race, color, political, religious and other beliefs, gender, ethnic and social background, property status, place of residence, linguistic or other characteristics, will have access to a high-quality education, health care system public and private sector services and other services;
- the vector of pride – the ensuring of mutual respect and tolerance in society, pride for own state, its history, culture, science, sport.

This document had a scientific basis for the formation and was widely discussed at the stage of adoption and further implementation [5-8] in the scientific community and at the public level, which created the preconditions for the development of the project of the law of Ukraine about the Strategy of sustainable development of Ukraine until 2030 [9], adoption which will enable the implementation of sustainable development principles in all spheres of human life and integrate the programs of development of economic sectors and regions.

In the social sphere, the creation of preconditions for the formation and development of labor potential is one of the priority tasks. Akulov M.G. in his work [10] provides the following definition of labor potential - it is the total social capacity for work, the potential capacity of society, its resources of labor. Not only able-bodied people employed in the industry but also those who are just educated and those who have already completed their professional activities and retired are included into labor potential. The main factors that affect the quality of labor potential are shown in Figure 2.
Among the main factors that depend on the state the attention should be paid to the creation of powerful medical, social, educational and safety components, and for the person the question of personality formation and comprehensive realization in society is always relevant.

Employers also need to be involved in shaping their work potential and utilizing it, modernizing production and requesting professionals with specific levels of education, skills, competencies, health, and more. Effective and rational use of the labor potential of the state is not possible without the creation of safe working conditions and measures for restoration of working capacity, as well as the preservation of biological diversity and cleanliness of ecological space.

If in the context of production, safety and social issues of labor relations are not taken into account or updated from time to time, then the results of such neglect are accompanied by social and economic consequences in the form of occupational diseases, injuries, deaths of employees or other people, disruption of the stability of the enterprise. Each of the areas of formation, realization, and post-realization of labor potential requires financing and constant updating, modernization and control, but without this activity, it is impossible to achieve stability and sustainable development, therefore the issues of occupational safety and environmental safety are important in the field of health protection. nations are integral levers of achieving sustainable development (Figure 3).
Figure 3. The role of labor protection and environmental safety in the concept of sustainable development

Consideration should also be given to the behavior of the personality in the public space and aspects of the propensity for danger or deviant behavior. A number of bad habits of a person, which represent the danger of a social nature can be attributed to deviant behavior [11].

Social hazards can be classified according to certain characteristics. By nature, the following groups of hazards can be identified:
- a) dangers associated with mental impact on a person (blackmail, fraud, theft, mobbing, etc.);
- b) dangers of physical violence (robbery, banditry, terror);
- c) dangers associated with the using of substances that destroy the human body (drug addiction, alcoholism, smoking);
- d) disease risks (AIDS, sexually transmitted diseases, hepatitis, tuberculosis, viral diseases, etc.);
- e) suicide risk.

By the scale of events, social hazards can be divided into: local; regional; global. By gender and age, the social hazards that characterize children, youth, women, men, and elderly people are distinguished. By their organization, social hazards can be accidental and intentional. The basis of the definition of social dangers that are caused by a low spiritual level is based on the values and components of society and human. There are two value components, the relationship between which characterizes the state of social life.

The first value component is the value of the culture of society. The second value component is the value orientation of the individual. The connection between these two extreme components of culture is the most important cementing and stimulating beginning of all social life. Conversely, breaking this link defines a deep spiritual crisis. On the background of changing landmarks, society suffers from the social dangers that have caused the change and loss of common values and orientations of a large population. Certain social hazards form "risk groups" in the human environment, which affect the state of society by increasing the number of criminal offenses, pulling in all the ranks new members of a healthy part of society, influencing the health of the people around them, worsening the gene pool of the nation. The above-mentioned negative phenomena in society create a negative circle, the causes of which, in most cases, are connected.
Escalation of circumstances also causes poor conditions of working, living and mode of life. The whole complex of circumstances increases the degree of social tension. Social tension deepens the development and spread of bad habits. Bad habits disorganize a person, make his will weak, reduce working capacity, make health worse and make life expectancy shorter. The earlier they are formed, the more detrimental they are and the more difficult it is to get rid of them. These habits bring a lot of troubles and suffering, causing great economic, social and moral harm to society. As social problems, they also affect the financial sphere of the state. In such circumstances, the forms and sizes of social deviations (crime, suicide, alcoholism, drug addiction, etc.) increase sharply. These and many other forms of perverted behavior in conditions of social control system can be threatening to society.

Many people, facing material problems, can not overcome them, and this is not due to the weakness of their character, the lack of willpower, and the lack of the necessary conditions to help overcome these problems. It causes disinterest, indifferent attitude to the results of work, deterioration of the material and psychological state of the staff, causes indiscriminate behavior, which leads to serious consequences on production and does not contribute to the awareness of environmental behavior.

Risks are always formed as a result of human activity or inactivity, and the highest levels of their manifestation are characteristic of the combination of the homosphere (space in which human is located) and the noxosphere (the space in which dangers are formed) and the greater the interpenetration of the two components, the higher the probability of danger and the degree of influence. To reduce the risk of adverse events that have a negative impact on humans, the ideal situation would be when the two components do not intersect or where security measures are used, adequate to the level of the threat, and they are proactive.

The technogenic, environmental, social impacts are so closely intertwined and must always be considered in the light of the economic context that it is time to combine multi-vector efforts to address problems in a particular direction to achieve stability. The main factor and driving force for achieving this purpose is the creation of integrated management systems. Economic challenges, demographic situation, the disappearance of sustainable markets and the appearance of new forms of employment are shaping new principles of doing business: «the production of quality products/services with minimal environmental impact and maximum protection for the consumer and the employee who makes it according to needs and interest of present and future».

Conclusions

Employers are interested in using management strategies that allow them to generate sustainable profits and to increase them. Today, markets are oversaturated with goods and the struggle for the consumer is not in the plane of increasing the quantity of goods and services, but on the plane of improving their quality, accessibility and safety for the consumer, society or the environment. New tendencies in the development of the labor market determine the using of new strategies for the selection and training of staff and professional growth, taking into account economic and social transformations and adjustments in different areas of influence.

The using of integrated management systems allows us to solve problems of formation and development of risks more fundamentally and economically more expedient, with rational using of the resource both human and material. It also gives the opportunity to analyze the existing and future risks and strategies for their impact, taking into account scientific and technical developments and best practices that were previously used individually and did not always lead to a synergistic effect. Important is the fact that such systems allow to make effective decisions in the context of limited response time and insufficient funding for environmental, occupational and man-made safety measures.

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