The sustainable development principles in the transport company management

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Abstract. Transport is the main source of environmental pollution. The ecology of transport determines the extent of the negative impact on nature and the environment. The authors present a block diagram of the interaction between the interests of public security and the economic entity. The mechanism of interaction between public and commercial interests of a transport enterprise is considered from the standpoint of payment for nature management. The article proposes a scheme for ensuring the quality and efficiency of the railway transport enterprise. The influence of external and internal factors on the quality and efficiency of the transport enterprise is described.

1 Introduction

Along with the advantage that a developed transport network provides to society, its progress is accompanied by negative consequences, which include the problem of assessing the damage caused by railway transport enterprises to nature and the environment. The presence of such a problem at railway transport enterprises indicates large-scale problems of environmental safety, which, in turn, has a negative impact on almost all spheres of society due to the scale of activity. Thus, under the "environmental impact" is the social sphere, the economic sphere of the regions, the country as a whole. Consequently, cardinal changes are needed not only in the methodology for assessing the damage caused by transport enterprises in the direction of increasing the amount of environmental payments, but also a change in the entire paradigm of nature management.

2 Materials and methods

The “polluter pays” principle does not reflect social interests in any way – the safety of the environment is under threat. The presence of excess emissions and their growth or slight decrease indicate the extreme inefficiency of the approach to managing a transport enterprise. Environmental payments that the enterprise-nature user pays from its own profit, or,

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including them in the cost of production, as in the case of calculations of permissible emissions and pollution according to environmental passports, reduce the economic performance of the transport enterprise, contribute to an increase in financial risks, in addition, have an unfavorable impact on the attractiveness of railway transport, including investment.

A significant socio-environmental problem is the types of pollution for which nature users are not responsible, even financially. The Russian legislation does not reflect such types of pollution as noise, vibration, radiation, electromagnetic. However, based on the work of environmental scientists, biologists and psychologists, it can be confidently stated that these types of pollution have a significant impact on human life and health, increase fatigue, weaken the immune system, and contribute to the occurrence of mental illness [1-4]. Therefore, the problem of control, accounting and reduction of these types of pollution is an open environmental and economic problem.

Based on the studied works of various authors, mainly the studies of E.L. Kuzina, the definition of the system of environmental management in railway transport was formulated from the standpoint of a systematic approach [5]. The system of environmental management in railway transport is understood as a system, the main purpose of which is to increase the environmental and economic efficiency of railway transport, which consists of interconnected production processes of railway transport and their elements, environmental components and social components that are affected in the process of environmental management. The production processes of railway transport and their elements are associated with the economic activities of transport enterprises. Environment components include a set of ecosystem elements that are affected: air, water resources, soil, flora and fauna. The ecological components of the system have an impact on its social components, that is, those that are directly related to a human: human life, human health, living conditions for people, the attractiveness of the territory. The impact of the production activities of transport enterprises on the environment leads to an impact on social components: the incidence of the population increases, the number of environmentally safe zones for humans decreases, and the ecological and economic attractiveness of the territory decreases [6]. Thus, the dyad "production activity - components of the environment" turns into a triad "production activity - components of the environment - social components of the impact", which completes this E. L. Kuzina definition of the system of environmental management in railway transport.

The economic situation that has developed in the modern world economy is constantly forcing transport enterprises that are active in business to look for new ways to organize the management process in order to reduce costs and risks, increase profitability and income. In the presence of environmental problems, planning as the most important management function is designed to help reduce operational risks, external and internal uncertainty, and reduce unproductive losses of transport enterprises. In the process of production and economic activity of transport enterprises, the transport needs of society are met and at the same time human rights to a safe environment are violated. Despite the fact that there is state regulation of the system "enterprise - ecological environment", the efficiency and quality of the transport enterprise, as well as the quality of the environment and environmental safety often leave much to be desired. Figure 1 shows a block diagram of the interaction between the interests of public security and an economic entity.

The policy of transport enterprises in the field of environmental management today is simple: “the polluter pays”. There are rates of payment for the negative impact on the environment: for permissible and excess pollution. At the same time, the existence of excess emissions in itself speaks of environmental problems [7].
Fig. 1. Structural diagram of the interaction between the interests of public security and an economic entity.

Figure 1 reflects the mechanism of interaction between public and commercial interests from the point of view of payment for nature use.

Thus, Figure 2 shows that the development of nature management, improvement of the quality of the environment reflects the interests of transport enterprises, as it allows resolving the current contradiction between commercial and public interests.

Fig. 2. The mechanism of interaction between public and commercial interests of the transport enterprise from the position of payment for nature use.

So, the quality and efficiency of the transport enterprise must be considered in conjunction with environmental management. This will ensure the environmental and economic efficiency of the process of nature management, protection of human health and
life. Improving the management process and its functions is a way to improve the quality and environmental and economic efficiency of transport enterprises.

Figure 3 shows the scheme for ensuring the quality and environmental and economic efficiency of the transport enterprise.

![Scheme for ensuring the quality and efficiency of the transport enterprise](image)

**Fig. 3.** Scheme for ensuring the quality and efficiency of the transport enterprise.

Today, the above-mentioned principles of quality and efficiency management of the company fit into the scheme of ensuring corporate social responsibility of transport enterprises. The practice of introducing corporate social responsibility programs assumes that the transport company takes responsibility for its impact on society, is ready to account for its actions, and keep records of them. Devyatovsky D.N. and Pozdnyakova M.O. believe that “the presence of corporate social responsibility (or social responsibility of business) as a social phenomenon indicates an increase in the level of human development” [8]. Kivarina M.V. believes that the development and strengthening of Russian business “will depend on how timely and adequately it perceives the basic principles of corporate social responsibility. Only in this case, it will be able to become an engine of positive changes in socially significant areas of society, create and maintain decent working conditions for the personnel employed at its enterprises” [9].

Thus, the environmental and economic efficiency of the production and economic activities of a transport enterprise and the quality of its work are ensured by a systematic approach, that is, unity and consideration of social, economic and environmental elements. Planning, as the most important management function, makes it possible to improve the socio-environmental safety and economic efficiency of companies, which means improving the quality of work.

In the process of planning the quality and efficiency of the transport enterprise, an important point is compliance with the legislation in the field of environmental management. In the Russian Federation, such legislation is represented by Federal Law No. 7-FZ “On Environmental Protection”, the Constitution of the Russian Federation, which establishes the right of everyone to a favorable environment, reliable information about its condition and compensation for damage caused to health or property by an environmental offense. The Russian Federation, in addition to domestic laws, is a party to a number of international conventions in the field of environmental protection, such as the Convention on Biological Diversity, the Convention on Persistent Organic Pollutants, the Convention on Long-range Transboundary Air Pollution, etc. Compliance with international environmental legislation
is related to environmental management and is one of the sides of the pentagon of improving the quality and efficiency of the transport enterprise, shown in Figure 4.

Planning as one of the management functions, based on the process and system approach, is aimed at ensuring the economic efficiency of the transport enterprise [10].

Fig. 4. The impact of external and internal factors of the transport enterprise on the quality and efficiency of its work.

3 Conclusions

Thus, improving the quality and efficiency of the transport enterprise is associated with changes in the management process, in particular, with its functions. Measures of factors of external and internal factors of the work of the transport enterprise will help to ensure compliance with standards in the field of quality management, environmental management, increase corporate social responsibility and reduce unproductive losses.

References

5. E. L. Kuzina, Inzhenerny Vestnik Dona 3 (2011)
8. D. N. Devyatlovsky, M.O. Pozdnyakova, Problems of the modern economy 50 (2014)