

Environmental Assessment of the Territories in the Region of Activity the Oil and Gas Complex for Sustainable Development: Mapping and GIS Approach

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Abstract: The given paper considers the methodological aspects of the Atlas mapping for the purposes of Sustainable Development (SD) in the regions of Russia. The Republic of Tatarstan viewed as a model territory where a large-scale oil-gas complex "Tatneft" PLC works. Methods for to the structure and requirements for the Atlas's content were outlined. The approaches to mapping of "an ecological dominant" of SD conceptually substantiated following the pattern of a large region of Russia.

Key words: Sustainable Development • GIS • Mapping • Atlas • Environmental assessment • Oil-gas complex

INTRODUCTION

During the first half of the XX century, the negative effect on economic activity on biosphere was smooth out by the natural process of homeostasis occurring in it. In the next ten-year period, a large-scale society's activity has led biosphere on the brink of the pre-crisis state of the environment. Moreover, the forces of resistance and compensative reactions of the abiotic environment sometimes appear to be insufficient to withstand the determination and to weaken the negative factors of an external influence. At present, the ecological capacity of the environmental in many regions of the earth exceeds the standards, especially where the ecological growth is determines by involving into the economic activity of a human the influx of natural raw resources and their profound processing. Thereby, the purpose to assure an ecologically safe SD of the world's community favoring to meet the essential needs of people in conjunction with the environment protection and its reproduction, assumes ever-greater importance. The UNO Conference on the Environment and Development at which the conception of SD formulated (Rio de Janeiro, 1992) took a decisive step to approve a new transnational paradigm. The ecological aspect of the paradigm of SD is the leading one when defining the strategy of the development of the world's community economics. Whereas, it requires the elaboration of appropriate programs that could be adapted to definite regions.

For Russia and its regions, the problem of the SD stipulate by such factors as the territory's and diversity of natural and social-economical conditions. In accordance with the principles of SD as far back as 1996 in Russia there was approved "The Concepts of Transition of the Russian Federation to the Sustainable Development". This concept assumes the recognition of three components: the balanced application of ecosystems, the effective economics and the social welfare (a fair society) that gain to meet the needs of present and future generations. This approach supposes a through regard of ecological factors that determine the parameters and the rate of a human's economic activity, which directly or indirectly exert anthropogenic influence of one other force on the environment [1-4].

The realization of the SD concept requires to solve not only political-legal decisions, but also to provide the obtained decisions with multi-aspect, objective and properly spreading information. In addition, all existing interactions in the supersystem "community-economy-ecology" formed into definite groups. These groups from the point of flows structuring information while developing the concept of the SD can be determined to the resources consumption, pollution and waste products escape, ecosystems application and the influence on a human's health.