

Preface

One of the most challenging issues of contemporary society is water. Particularly, the water management specifics prevail, when considering sustainable development of any country, in a market economy.

Considering this aspect, it is necessary to acknowledge that in a society which is in the process of transition to more complete forms of governing, knowledge, cultural values, natural resources, such as water, play a defining role. That being the case of the Republic of Moldova, in its course toward a knowledgeable society, European integration, regional, and sustainable development.

One of the paramount premises of a knowledge-based society is the study of nature, an infinite source of knowledge. Thus, human pursuit of knowledge and its necessity represents one of the cornerstones of human nature. It is due to this pursuit that researchers and scholars strive to learn about the environment, natural resources, create energy generation technologies, invent new materials and means of their processing, and study the solar system and the depths of the world's oceans. The paradigm of a knowledge society is applicable today and is the defining element for any state. Research and innovation must take upon the role of creation and generation of a new knowledge and challenge society toward real and meaningful change.

The aforementioned is viable for water and water management issues as well. In this context, research and innovation in the field of water management must address certain fundamental aspects. These aspects include: access to water, water quality, water treatment, transboundary effect of water, etc.

While trying to address these particular aspects of water management in Moldova, it was necessary to consolidate a critical mass of researchers, practitioners, experts, businessmen, policy makers, and civil society representatives, in order to perform a comprehensive analysis of the issue at hand. Striving to improve effectiveness of work as well as to ensure a complex and comprehensive answer to the proposed task, a platform was proposed, aimed at bringing together people from different areas relating to water. This platform was created in 2009, taking the form of a national research program, entitled "Research and Management of Water Quality." The main goal of the research program was to create and improve the legal, scientific and methodological, technological, and cadastral bases for the capitalization and sustainable development of water, and implementation of modern technologies in water supply, treatment, and reuse.

Other priorities include: expansion of access to water sources; improvement of environmental protection, especially water protection against pollution and depletion, efficient water use; establishing effective monitoring systems for disaster prevention. The national research program consists of 11 projects grouped into five clusters: research of water structure and quality; surface water; ground-water; water treatment; and irrigation technologies.

Moldova is a small landlocked country in the Southeastern part of Europe between Ukraine and Romania. Its population is estimated at 3.5 million people. Moldova's water resources are composed of 3,621 rivers and streams with a general length of 16,000 km; around 4,117 natural lakes and artificial reservoirs; around 7,000 artesian wells and around 166,000 wells. The main water sources are the largest rivers Dniester (83.6 %) and Prut (1 %) and 15.2 % groundwater.

Water pollution provoked by industrialization remains one of the main environmental problems of our time. The quality of surface and groundwater in Moldova, in most cases, does not meet European and international standards. The main sources of surface water pollution have an anthropogenic origin.

Natural water bodies are extensively polluted by industrial, specifically, agricultural wastes. Existing treatment facilities are mainly in poor condition and do not meet the modern standards. Cumulatively, due to inefficient use of wastewater treatment plants, the numbers of pollutants are higher than prescribed by national regulations. This leads to an increase in morbidity and mortality.

The intensive land use as well as improper utilization of water resources during the last decades, along with the large-scale livestock activity, provoked a threatening situation in regard to freshwater in Moldova.

In solving the water-related issues, one must ask himself to what extent he is committed to the cause and what the outcome of such endeavor might be. Moreover, on a country scale, when considering involvement in such activities, it is of utmost importance to analyze and envision societal demand as well as the regional dimension. The latter, can determine the outcome of future efforts.

It is common knowledge that the whole spectrum of water issues can only be considered and resolved based on the solid scientific approach, including the fundamental and applied aspects. The research on water makes it possible to reveal the water structure, to ensure innovation development in water treatment, intensive technology of water use and reuse, and to draft coherent water policies. The outcomes of these activities are focused on societal needs, which supply information for government, empower people to participate in decision-making, giving them access to new and improved rights and liberties, while ensuring their basic need for water of improved quality.

Management of Water Quality in Moldova

Duca, G. (Ed.)

2014, VIII, 241 p. 151 illus., 67 illus. in color., Hardcover

ISBN: 978-3-319-02707-4