OVERVIEW OF EU STANDARDS ON WATER MANAGEMENT LEGISLATION INCORPORATED IN NATIONAL RIVER BASIN MANAGEMENT PLANS FOR ADAPTATION TO CLIMATE CHANGE

Natalia ZAMFIR
PhD, associate professor,
Department of International and European Law,
Law Faculty,Moldova State University.
Chisinau, Republic of Moldova

Abstract: *This article outlines some of the key provisions of EU regulations that are relevant for management of transboundary water resources in the context of climate change impacts.*

The main purpose of the state policy in the field of water resources should be to prevent the degradation of the quality of water resources in the context of climate change, protection and restoration of the aquatic environment, ensuring a sufficient supply of good quality water for sustainable, balanced and equitable water use.

Many regulations on river basin management have significant gaps or failings. Among such problems: considering of long-term changes in water availability and revisit water allocations; the decisions are weak without due regard for the interests and needs of other co-watercourse states, from information sharing, to joint basin management and development. In this case, are less likely to aid parties in responding to the effects of climate change on water resources in a cooperative and sustainable manner.

Periodical revisions of the national river basin management plans in according to EU standards may prove necessary for adapt to climate change in sustaining the resource, protecting ecosystems, and meeting human needs, while maintaining a fair balance between all the states concerned.

Cuvinte cheie: environment, sustainable, water, climate, management.

In the 7th EU Environment Action Programme, "Living well, within the limits of our planet", the EU formulates an engaging vision of the future to 2050: a low carbon society, a green, circular economy and resilient ecosystems, as the basis for citizens well-being.

Quality water largely influences people's well-being. Better quality and free access to water are fundamental to human development and security. Promoting and ensuring access to quality water is one of the most effective mechanisms in the field of health and reducingpoverty.

Access to safe water and sanitation was a priority issue in the UN's Millennium Development Goals and the 2002 World Summit on Sustainable Development. Reports for the Second International Conference on Water and Climate (France, October 2017).

In September 2015, 170 leaders from all over the world gathered at the UN Summit on Sustainable Development in New York for the adoption of the Agenda until 2030. The new agenda includes 17 sustainable development goals (SDGs) and 167 objectives and has become a comprehensive program that will guide global and national development activities in the next 15 years. The SDG is the result of the largest consultations in the history of the United Nations involving a large number of stakeholders, based on international human rights standards; the agenda offers significant opportunities for furthering the realization of human rights for all people around the world without any discrimination. [1]

The concept of sustainable development pursues the goal of preserving and multiplying various forms of capital: economic, ecological and social, which form the basis of public welfare and the development of future generations. Access to safe water is a important component of the 6 SDG- Ensure availability and sustainable management of water and sanitation for all, which is fundamental to the achievement of all 17 Sustainable Development Goals.

The draft Strategy “Moldova 2030” sets out clear priorities for the provision of safe and accessible water, sanitation, minimization of the water pollution from industrial processes, increasing the efficiency of the water use across all economic and social sectors, and enhancement of the protection of the water related ecosystems. They also incorporate aspects related to sustainable management of the water resources, including through adequate international cooperation and involvement of the local and regional communities in the water management. [2]

The National Development Strategy "Moldova 2030" (2018), being the main reference document for the sectoral strategies and the subsequent policy interventions, aims to assume a greater responsibility to stop the degradation of the environment and minimization of the water pollution, taking into account the needs of future generations, as well as commitments undertaken under 2030 Agenda. The policy document "Moldova 2030" declares the principles of the green economy, which will ensure economic resilience and adaptation to the impact of global climate change and will contribute to enhancing its competitiveness at the regional and international levels, and, in the long term, will avoid the huge economic costs due to environmental degradation and climate impact. In the Strategy, people's rights are placed at the center of the development process, which could be accounted for in a sustainable way only by empowering people to participate, to contribute and to benefit from economic, cultural, social and political development based on a common attitude in which all human rights and freedoms are observed.

Moreover, a new National Development Strategy "Moldova 2030" based on association agenda, including the majority of the objectives of the Association Agreement RM-EU. [3] The Association Agreement is accompanied by an implementation Program of Action for European Integration: Freedom, Democracy, Welfare [3], which addresses to human protection and sets the framework for the congruence of Moldovan policies with European ones.

Achieving a “good status” for all of Europe's surface waters and groundwater is a major challenge, as recent assessments estimate that at least 40% of the EU's surface water bodies and groundwater bodies are at risk.[4]

General framework for integrated river basin management in Europe with a view to achieving “good water status” havedefinedin Water Framework Directive (WFD), adopted in 2000.

Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for states action in the field of water policy establishes an innovative approach for water management based on river basins, the natural geographical and hydrological units and sets specific deadlines for Member States to protect aquatic ecosystems. The directive addresses inland surface waters, transitional waters, coastal waters and groundwater. It establishes several innovative principles for water management, including public participation in planning and the integration of economic approaches, including the recovery of the cost of water services.

According to art.3 and art. 24 Member States should to identify the individual river basins lying within their national territory and assign them to individual River Basin Districts (RBDs), and identify competent authorities for take in consideration consider all these factors, from the physical differences – including altitude, geology and size – to the levels of pollution and other pressures. They can focus monitoring activities on problems affecting specific water bodies and tailor measures to improve conditions in the water bodies at risk.

The directive allows too characterize river basin districts in the special register in terms of pressures, impacts and economics of water uses, including protected areas lying within the river basin district.This designate zones will need to meet the “good ecological potential” criterion for ecosystems rather than “good ecological status”. (Article 5, Article 6, Annex II, Annex III).

In conformity art.8 Member States have use during the monitoring of water status the main tool by to classify the status of each water body. The directive sets a five-class scale -

high, good, moderate, poor and bad status – for surface waters and 2 classes – good and poor – for groundwater, and it requires Member States to achieve good status.

The directive specifies three types of monitoring. Long-term surveillance monitoring provides a broad understanding of the health of water bodies and tracks slow changes in trends such as those resulting from climate change. Operational monitoring focuses on water bodies which do not meet good status thus tracks the effectiveness of investments and other measures taken to improve the status of water bodies. Member States also undertake investigative monitoring when they need further information about surface water bodies that cannot be obtained via operational monitoring, including information on accidents. In addition to these three main types of monitoring, Member States need to carry out more detailed analysis in areas that are protected for drinking water or for natural habitats and species.[4]

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The directive's river basin approach to water management – centered on the review of river basin management plans every six years – establishes a mechanism to prepare for and adapt to climate change. Planning for droughts and floods will also be an integral part of this system.

In this regard is the relationship between water resources management and climate change, should to be taken into account, and a policy and legislation support developed to address these adverse effects.

Regulation (EU) 1293/2013 of the European Parliament and of the Council of 11 December 2013 on the establishment of a program for the environment and climate action (LIFE) and repealing Regulation (EC) establish the program with two subprograms (environment and climate action). It also introduces integrated projects, which operate on a large scale, starting at regional or multi-city level. These aim to implement environmental and climate change policy by applying plans and strategies based on EU legislation and integrating these policies further into other policy areas.

Main objective in adaptation to climate change include seven thematic priorities: nature and biodiversity; water, including the marine environment; waste; resource efficiency, including soil and forests and green and circular economy; environment and health, including chemicals and noise; air quality and emissions, including the urban environment; and information and governance.

The process of European harmonization presents a challenge for the water management sector and includes two main action directions: harmonization of national environmental legislation with the EU Acquis in this field and institutional reform, which implies the development of an institutional mechanism capable to enforce the adopted norms. The Environmental Strategy for the years 2014-2023 covers exactly these challenges and aspires to be the key strategic planning document for alignment to the provisions of EU directives and of assuring the country's sustainable development by promoting green economy.

According to the Environmental Strategy for 2014-2023 the main water arteries are the Dniester and Prut, transboundary rivers, with the watercourse length on the territory of the Republic of Moldova of 660 and 695 km respectively, and with a total basin area of 19 070 km.This network of water basins ensures surface flow regularization and discharge, drinking and technical water supply, irrigation, navigation and other uses. The most important water supply sources are surface waters, particularly the Dniester River, which supplies about 83%, the Prut River – 1,8%, and other surface waters – 0,2%. Groundwater sources accessed through artesian wells, common wells and springs supply about 15% of the consumption. The main water arteries are the Dniester and Prut, transboundary rivers, with the watercourse length on the territory of the Republic of Moldova of 660 and 695 km respectively, and with a total basin area of 19 070 km^2. [5. p.32]

The volume of water currently available in Moldova is about 500 m^3per capita per year or even less. Internationally recommended thresholds define a safe level of renewable drinking water availability as 1 700 m^3per capita per year. If the volume of water available is less than 1 000 m^3per capita per year, the resultant water shortage could decrease the economic development and affect the health and living standards of the population.[5. p.32]

There is no well-established water quality goals policy. At present, the only strategy document aimed in ensuring the quality of water is the National Environmental Strategy 2014-2023, which guarantee improving the quality of at least 50% of surface waters by implementing hydrographic basins management system by 2023. In general, the National Development Strategy of the Republic of Moldova and sectoral development strategies of the national economy lack a short and medium-term priorities of the actions and less oriented towards to improve of implementation specific changes in national economies to reduce the water polution, the policy documents do not establish quantifiable targets for ensuring the quality of water.

In Soviet times the water basin was managed as a united system, but from 1991 Moldova and Ukraine have separately regarded their parts, which is not effective for sustainable river management. In 1994 an intergovernmental agreement between these two countries for the boundary waters was signed, but this treaty mostly regulates water use. The biological resources of Dniester as well as ecological systems have no joint management. This has happened because of multiple reasons, but mostly as a result of slow awareness and interest of decision makers in resolution of environmental issues, as well as the existing political tension, related to the Transnistrian conflict. During last period the Dniester environmental problems have become even more acute (like spills of communal wastes dealing with the fact that, in several cases, purification installations of Moldovan towns are situated in Ukraine and Transnister), and seriously destabilized the situation in general. The input of Dniester to organic pollution of the NW Black Sea region is 1730 thousand tons per year, i.e. more than twice that of the larger Dnieper River.[6]

There is no well-established integrated river basin management policy. The National Environmental Strategy 2014-2023doesn't' contain actions related to the integrated system of water management, but several important actions are foreseen in the Action Plan for its implementation:

- identification of river basins and districts and the establishment of administrative arrangements on transboundary rivers, lakes and other bodies of water;
- ensuring the economic analysis of water using, the impact of human activity on water quality and river basin characteristics, river basin management plans of the Nistru, Danube-Prut and the Black Sea. [5]

The main objectives approach of integrated management of water resources under the basin principle water monitoring policy are stipulated in water legislation in Moldova (Law on Water 2011).

Actions aimed at achieving water quality for all water bodies and ecosystems in the basin are available in the District Management Plan for the Dniester river basin was adopted in 2017 by GD no. 814/2017 on approving of the Management Plan for Dniester river basin, and for the Danube-Prut and Black Sea hydrographic basins in 2018 through GD no. 955/2018 on approving of the Management Plan of the Danube-Prut and Black Sea river basin management.

A key component of the plans is the analyze the main issues with an impact on water bodies, which results from identifying specific issues and targeting them, include water care bodies in achieving the environmental health goals.

In the field of surface water quantity and water quality monitoring is regulated by the Law on Water 2013,Law on Environmental Protection 1993, Law on hydrometeorological activity (2003), Law on drinking water (1999), Law on Protection Zones and Strips of water, rivers and reservoirs (1995) and by the GD of the Monitoring Regulation and systematic evidence of surface water status and a groundwater from 29.11.2013.

Water standards are important parts of environmental and water laws, in Moldova is regulated by the Law on public service of water supply and sewer (2013) and GD of the

Monitoring and systematic evidence of surface water status. Physical-chemical parameters, procedures and technical monitor measures (2013) and the GD for the approval of the Regulation on Environmental Quality requirements for surface waters (2013).

Identifying significant anthropogenic loads in Moldova is regulated by theGD on the approval of the Regulation on requirements for the collection, treatment and discharge of wastewater into the sewer system and / or receivers for urban and rural settlements of the Republic of Moldova from November 25, 2013 nr. 950 and the the Law of the Republic of Moldova On Public Service water supply and sewerage from December 13, 2013 nr. 303.

The above mentioned water qualitymanagement has limitations and problems, the most important of which are as following:

- lack of clearly formulated goals and objectives of monitoring system reflecting its relationship with water quality management activity. *Ex. in the WFD it is stipulated that state authority should make all efforts to achieve "good" status for all water resources. However, Law on Water of the Republic of Moldova there is no emphasize that all water plans must include now this common Goal – achieving "good" status. The opportunity to introduce in Moldova of European mechanism to define a "good" status, by using not only the maximum allowable concentrations (MAC), but, first of all, basing on deviation from the reference state, taking into account the impacts on aquatic biota, was also missed. Thus the opportunity to implement the concept of resilience, which is important for understanding of necessity of adaptation to climate change, into Moldovan water policy was lost.*[8]

- unclear distribution of responsibilities between national authorities involved in the monitoring, poor co-ordination among them, resulting in duplication of some functions and loose of the others, for.ex. *in Moldova numerous institutions are involved in environmental management but the quality of their performance is low and so is the co-ordination between these. The environmental authorities are weak and they lack political influence;*

- legislative gaps in transparency and lack of sanctions;

- significant discrepancies between different laws on property rights and the responsibilities of natural resource users;

- quite limited possibility for estimation of special parameters of pollution and detection of emerging issues;

- a lack of modern information technologies and limited possibilities for dissemination, processing and presentation of information;

- water quality assessment based on outdated and inflexible the maximum allowable concentrations system, *For ex., water quality and quantity standards were set for more than 1000 parameters in the 1980s and based on maximum allowable concentrations (MAC) of contaminants established for drinking water supplies, household use, fisheries and other needs of the population. This number of parameters is significantly higher than defined in the Water Directive. Practically water quality monitoring is limited to about 80 parameters, with only about a third of them being similar to those in the Water Directive.*[9]

- inadequate financial and logistics support of the monitoring activity, because the environment is not a top priority for Government of the Republic of Moldova.

The legal framework of Moldova is substantially in line with the requirements of European Union Directives, however it does not set a clear time framework for the implementation of each step of the directives and provided a very general roadmap including multiple stakeholders into the various steps towards the inclusion of Risk Management into the Moldovan CP system. A clear legal reference and a formal system for the evaluation of lesson learned have not been introduced yet.

There is a need to develop secondary legislation in terms of specific, consistent implementing regulations, procedures and guidelines, which could provide user-friendly information. Necessary to draft sub-legislation to clarify which institution will be in charge of coordinating working groups for each hazard.

Also for effective implementation it is recommended to include flood risk management principles in line with Floods Directive into the river basin management plans and to improve the efficiency of the observational network by modernizing, reequipping technically

and technologically, increasing the number of and further developing automated stations engaged in measuring water levels, rainfall etc.

Another recommendation is to develop and adopt in current legislation a methodology for multi-sectoral economic assessment of disaster losses. Furthermore it is recommended to develop and implement capacity building actions for national and local institutions on the use of the methodology.

Many problems in practice regarding climate change adaptation are being addressed within the context of sector-based strategies and implementation programs and plans (including environmental protection, the use of water resources, agriculture, energy, construction, transportation, emergency response and public health).

Moldova has signed and ratified the Paris Agreement, which imposes a number of new international legal obligations on the parties. One of the Paris Agreement's requirements is to prepare and implement a low carbon development strategy until 2050. Agreement specifies that each of its parties is to define and communicate a national target relating to the global response to climate change (expected NDC).

Moldova was approved a Climate Change Adaptation Strategy with Plan Action up to 2020 in 2014 by the GD. A new vision in developing and ensuring the implementation of state climate change policy was approached by the Low-Emission Development Strategy of the Republic of Moldova up to 2030 was approved by the GD of Republic of Moldova.

In fact, these documents are responsible today for the bulk of practical adaptation activities, but many of these programs are not fully funded and these far from all of them explicitly address potential climate change factors.

For example, In Moldova, was approved in 2011 the Program to Develop Water Resource Management and Water Conservation for 2011–2020 as a Conceptual Framework for National Policy in Water Resources for improving the performance of the water resources sector.

Another priority with evaluation of the efforts to tackle climate change, is elaboration the legal framework for national monitoring, detailed reporting and periodic assessment of greenhouse gas emissions.

More attention should be paid to adaptation to the effects of climate change, especially important for Moldova in this regard is the relationship between water resources management and climate change: the probability of a future lack in potable water resulting from climate change needs to be taken into account, and a policy and legislation support developed to address these adverse effects.

Apparently, for the moment, a favorable legal framework has been created for the development of water quality management, but some constraints in sustainable development can be observed:

- the multitude of strategies, programs, activity plans, as well as the lack of a special legal framework conditions the fragmentation of the responsibilities of those responsible in the field, thus determining the lack of an integrated management; the competent authorities do not have sufficient processes and levers to prevent water polution, as well as mechanisms for removing the negative consequences, in this respect, activities and tools are needed in addition to good practices;

- the need to reach the appropriate level of capacity in the field of integrated management depends on the volume of investments needed to implement the measures and technologies that contribute to adaptation process of 2030 Agenda actions to the domestic priorities;

- capacity needs for adaptation of SDGs to integrated are relevant and required to be available in two dimensions: conducting studies and negotiating the issues at the international level, mainly to attract funds to carry out the proposed measures in development policy documents.

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