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PROPOSAL OF THE NEW NOMENCLATURE IN PLANNING FOR ADAPTATION TO CLIMATE CHANGE AT THE LEVEL OF LOCAL SELF-GOVERNMENT UNITS (LSGU) IN SERBIA

Marina Nenković-Riznić³⁸; Mila Pucar³⁹; Borjan Brankov⁴⁰

Abstract

The impact of climate change on the implementation of various activities in Serbia is evident. The new living conditions impose a change on the existing paradigm of spatial planning and management. In addition to numerous initiatives for the adoption of strategic and legislative acts at the national level, it is necessary to simultaneously define an adequate system of horizontal and vertical planning. It would include the development of action plans for climate change adaptation at the local level, adoption of instructions, guidelines, manuals for the local government and population. Taking into account all national documents in the field of climate change and reduction of CO₂ emissions (already adopted or in the process of adoption), this paper will propose a new nomenclature in planning for adaptation to climate change at the local level in Serbia. This would simplify the procedure for local government units to adequately respond to all risks arising from the growing consequences of climate change and enable an adequate response.

Key words: climate change, planning, new nomenclature, LSGU Serbia

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Introduction

The fight against climate change is one of the priorities of the international community and among the greatest challenges of today. The rising atmospheric concentration of greenhouse gases has led to an increase in global air temperature by 1.1°C since the end of the 19th century [1]. Besides higher air temperatures, human activity led to changes in other components of the climate system, such as ocean warming, snow cover duration and ice loss in Greenland and Antarctica. The expected effects of climate change are complex and far-reaching. The large body of research, analyses and reports [2], [3], [4] which presents the observed and future climate change, reveals its extensive consequences if the global community fails to appropriately respond to this challenge, which is of fundamental importance for the continued development of society. Climate change directly leads to changes in environmental, social and economic indicators, i.e. changes in the overall conditions in which today's society is living. The connection between adaptation to climate change, with all other issues of development, and the necessity to reach a comprehensive solution is another challenge for all planning sectors.

Consequently, new living conditions also impose a change to the current planning and spatial management paradigm. In addition to numerous initiatives for the adoption of national strategic and legislative acts (which are ongoing), it is at the same time necessary to define a suitable system of horizontal and vertical planning, which would entail the development of action plans for adaptation to climate change at the level of local self-government units, along with the drafting and adoption of instructions, guidelines and manuals for the local government and population.

Strategic and legislative framework in Serbia

The Republic of Serbia is a member of the Convention, the Kyoto Protocol and the Paris Agreement. Obligations under these international treaties are defined in laws on ratification/confirmation, which constitute fundamental legislation in the area of climate change. In line with the key EU legislative packages in the area of climate change (the 2020 Climate and Energy Package, 2030 Climate and Energy Framework, and the new European Green Deal) and the obligations to align national legislation with EU regulations, the basic package of national laws relevant to this area contains:

1. Law on Climate Change (Official Gazette of RS, No 26/2021);
2. Energy Law (Official Gazette of RS, No. 145/2014, 95/2018, 40/2021) (which defines the main long-term energy policy objectives);
3. Law on the Efficient Use of Energy (Official Gazette of RS, No. 25/2013, 40/2021), which transposes the provisions of the renewable energy and energy efficiency directive; and
4. Law on the Ratification of the Treaty on Establishing the Energy Community Between the EU and the Republic of Albania, the Republic of Bulgaria, Bosnia and Herzegovina, the Republic of Croatia, the Former Yugoslav Republic of Macedonia, the Republic of Montenegro, Romania, the Republic of Serbia and

the United Nations Interim Administration Mission in Kosovo pursuant to the United Nations Security Council Resolution 1244 (Official Gazette of RS, No 62/2006). According to this Treaty, renewable energy and energy efficiency objectives were defined for 2020, as was the obligation to develop Integrated National Energy and Climate Plans.

From the aspect of policies in this context, significant documents are listed below:

1. *Low Carbon Development Strategy with Action Plan* - Climate strategy - in the adoption stage;
2. *Energy Sector Development Strategy of the Republic of Serbia for the Period by 2025 with Projections by 2030* (Official Gazette of RS, No 101/2015), which is referred to, but is not considered or based on requirements in the area of climate change;
3. *National Action Plan for Renewable Energy Sources* (Official Gazette of RS, No 53/2013), which sets out ways to achieve the mandatory share of energy produced from renewable sources in total consumption of 27% by 2020;
4. *Regulation Establishing the Program for the Implementation of the Energy Sector Development Strategy of the Republic of Serbia for the Period until 2025, with Projections until 2030, for the Period from 2017 to 2023* (Official Gazette of RS, No 101/2015), which defines all measures, activities and projects that need to be implemented in all energy sectors;
5. *Third Action Plan on Energy Efficiency of the Republic of Serbia, for the Period until 2018* (Official Gazette of RS, No 1/2017) - the third AP, applying to the period until 2018, envisages total energy savings amounting to 0.7524 Mtoe, or 9% of the energy consumption in 2008.

According to the Law, climate change policies are: Low Carbon Development Strategy with Action Plan and Concept of the policy for adaptation to changed climate conditions (National Adaptation Plan according to the Paris Agreement). According to the Law, other national strategies, general and sectoral plans and policies related to GHG emissions must be aligned with the Strategy and contain a quantitative assessment of the impact on the change in levels of GHG emissions from sources and their removal through sinks, calculated according to the accepted international methodology.

The Law also prescribes the development of sectoral strategies and other documents in the area of climate change adaptation and mitigation.

Current treatment of climate change in planning documents

The Spatial Plan of the Republic of Serbia (SPRS) of 1996 [5] did not cover the area of climate change. The 2010 Spatial Plan [6] set out the basic directions of the spatial distribution and development of settlements, industrial and infrastructure facilities and linear infrastructure, protection of natural and cultural goods and the environment in line with the estimated impact of climate change. Although the SWOT analysis of the Spatial Plan identified the unutilized potential for reducing GHG emissions as a potential/strength, and the National Centre for Climate Change was established, at the same time a weakness/limitation was underlined: lack of funds to implement a programme of multidisciplinary assessments of the impact of climate

change on certain economic sectors, as well as a lack of revised standards on the application of climate data and information in planning and designing. The problems highlighted in the 2010 SPRS (lack of standard methods and instructions for planning and designing, inadequate support to the implementation of multidisciplinary programmes, lack of legal and strategic guidelines in the area of climate change) still directly affect the assignment of the obligation to implement climate change in the planning of Serbia's spatial development. The majority of the defined objectives and concepts given in the SPRS is implemented to a lesser or greater extent.

The obligations to implement and improve the systems of climate change monitoring, research and projections, and the development of spatial databases on local and regional climate change were carried out in the periods 2011-2015 and 2016-2020, financed from the budget of the Republic of Serbia and European funds. On the other hand, the strengthening of capacities of operational, research, communication and information functions of the National Centre for Climate Change, which performed the functions of the South East European Climate Change Center, and the establishment of the National Climate Forum with the purpose of educating and informing decision-makers and the general public on the causes and consequences of climate change were supposed to be carried out in the SPRS in the period 2016-2020, using the funds from the budget of the Republic of Serbia and European funds.

The area of climate change was incorporated in 4 regional spatial plans in the territory of the Republic of Serbia. These are the Regional Spatial Plan of the Autonomous Province of Vojvodina (RSP APV) [7], Regional Spatial Plan of the Administrative Area of the City of Belgrade (RSP AA Belgrade) [8], Regional Spatial Plan of the Kolubara and Mačva District (RSP KMD) [9], and Regional Spatial Plan of the Zlatibor and Moravica District (RSP ZMD) [10]. All the above plans (and accompanying implementation programmes) were fully aimed at implementing the concepts of spatial development in light of climate change given in the SPRS.

However, despite the strategic guidelines presented at the republic and regional levels, and the legal obligation to draft them, local action plans in the area of climate change response were never actually developed in most municipalities. Climate change is a subject of some local sustainable development strategies.

Most cities and municipalities adopted Local Strategies for Sustainable Development (LSSD) in the period 2012-2016, and some cities and municipalities adopted action plans for those strategies. These strategies addressed climate change to a lesser extent, as a problem or as part of the topic of adaptation measures. Most local strategies for sustainable development mention climate change only as part of the SWOT analysis and list it among environmental protection issues (LSSD of Bački Petrovac [11], LSSD of Subotica [12], LSSD of Sombor [13], LSSD of Sečanj [14], LSSD of Pirot [15], LSSD of Novi Sad [16], LSSD of Kragujevac [17], SPLED Zaječar [18], LSD of Vršac [19]). Some of them also list it among priorities and goals (LSSD of Bački Petrovac [11], LSSD of Kikinda [20]).

However, most sustainable development strategies of municipalities and cities in Serbia were developed for the time horizon until 2020. Therefore, new strategies and action plans for the following ten-year period may incorporate questions pertaining to

climate change adaptation of local self-government units. In addition, the question of climate change mitigation and adaptation should also be an integral part of local environmental action plans of all local self-government units, whose development is expected in the coming period.

The City of Belgrade is one of the few cities in Serbia which has adopted a Climate Change Adaptation Action Plan and Vulnerability Assessment [21]. This plan presents the vulnerability assessment for the City of Belgrade based on extreme weather events in the past, the existing vulnerability to the effects of extreme weather events and the mapping of the existing vulnerability to the effects of extreme weather events within the territory covered by the Master Plan of Belgrade. This plan also envisages a climate change adaptation action plan and provides instructions for implementation monitoring.

In addition to the above plan, in 2021 the City of Belgrade adopted the Sustainable Energy and Climate Action Plan for the City of Belgrade (SECAP), along with a strategic environmental assessment [22].

This Action Plan presents an inventory of baseline emission values of gases from various sectors (economy, industry, construction, etc.), the projection of total greenhouse gas emissions, and the assessment of vulnerabilities and risks. Based on these input data, a set of activities was prepared, which should be implemented for the purpose of climate change adaptation, in the field of energy and energy efficiency, urban planning and mobility, along with a detailed assessment of measures for implementation, and a vulnerability and risk assessment.

Proposal of the new nomenclature in planning for adaptation to climate change at the level of local self-government units

Climate change must necessarily be viewed in the context of its impact on the development sectors elaborated through the spatial plan. Planning in line with climate change necessitates a careful assessment of the levels and sectors (land use, development of the transport, energy, hydrotechnical and communal infrastructure, development of agriculture, forestry and other sectors directly threatened by climate change) that would incorporate expected climate change, so as to reach acceptable alignment with the existing sectoral documents and policies.

The planning practice in Serbia so far has not given sufficient attention to the issues of climate change impact on spatial development. However, with the drafting of the new primary spatial planning document in Serbia – the Spatial Plan of the Republic of Serbia (SRPS) until 2035, objectives have been set out, whose implementation will ensure a reduction in GHG emissions and adaptation to altered climate conditions, while reducing pressure on the quality of life and public health of the population; it also envisages the drafting of local action plans in the area of climate change adaptation. Incorporating climate change in the national spatial plan could have a significant impact on the setting of more objective directions of development for some sectors in the plan, and the prescribing of appropriate measures and tools for the implementation of strategic objectives and concepts of development in light of new

climate conditions. In relation to this, this plan also contains measures for climate change adaptation and mitigation, as well as its integration into sectoral policies of all settlements in the territory of Serbia, in order to realistically view development in sectors vulnerable to climate change.

On the other hand, the impact of climate change on spatial development cannot be effectively considered if its assessment is made only at the national level of planning. Therefore, it is necessary to define and consistently carry out programmes of multidisciplinary studies of climate change at the local level, and of the impact of climate change on agriculture, forestry, water management, energy production, construction, biodiversity and ecosystems, infrastructure and human health, and to encourage the development of sectoral plans and programmes for climate change adaptation and mitigation. The above priority activities should be included in local action plans in the area of climate change adaptation, to whose adoption local self-government units would have to commit, based on the Law on Climate Change and strategies in the area of climate change, low-carbon development, renewable energy resources and energy efficiency.

Local climate change adaptation plans also have to be supported by a climate monitoring system, geospatial databases and information on climate change at the local, regional and national levels, by the monitoring of extreme climate events and disasters, and determination of vulnerability of certain areas for their use in the planning of spatial development of local self-government units.

Planning of climate change adaptation must also include the development of local maps of natural disaster risk in relation to observed and projected climate change, for the purpose of integration of climate change into local plans for the protection of the population, property, the environment and natural resources, and determination of zones of climate change threat so as to structure adaptation measures and protection measures. It must also contain the revision of local sectoral strategies (in the area of human health, natural resources and environmental protection – local environmental action plans) to incorporate climate change as an important factor of sustainable development in sectors vulnerable to climate change.

Introducing the obligation to develop local climate change adaptation plans also necessitates the implementation of financial measures, which entail the performance of an economic analysis of climate change effects, as well as incentives and financial support for the adoption and implementation of economically justified climate change adaptation and mitigation measures.

Creating local action plans would simplify to local self-government units the procedure of an appropriate response to all risks occurring due to the growing consequences of climate change and enable a timely reaction.

Conclusion

Climate change directly leads to changes in environmental, social and economic indicators, i.e. changes in overall conditions in which today's society is living. The link between adaptation to climate change, with all other issues of development, and the

necessity to reach a comprehensive solution is another challenge for all planning sectors. Consequently, the practice in Serbia must, in addition to elaborating on this problem at the national level, also actively involve local self-government units through the adoption of local action plans in the area of adaptation, which must be a reflection of not only national strategic guidelines, but also of local conditions and needs. This would enable an appropriate and timely reaction of all institutions at the level of local self-government units and reduce/mitigate or neutralise the negative effects which climate change can have at the local level.

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