Republic of Macedonia
Ministry of Environment and Physical Planning

Republic of Macedonia
Ministry of Local Self-Government

strategic concept

The role of spatial and urban planning for BETTER CLIMATE CHANGE GOVERNANCE

The Ministry of Environment and Physical Planning and the Ministry of the Local Self-Government express their gratitude to the Office of the United Nations Development Programme (UNDP) in Skopje and the UNDP Oslo Governance Center for the technical and financial support provided during the preparation of this study.

STRATEGIC CONCEPT - THE ROLE OF SPATIAL AND URBAN PLANNING **FOR BETTER CLIMATE CHANGE MANAGEMENT**

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november, 2013

CONTENT

I. Introduction

Spatial and urban planning aim at contributing to the sustainable development of local communities. Carefully prepared planning documents for spatial development and landscaping can help increase the sustainability of spatial development at local level, addressing important aspects of climate change adaptation and mitigation.

Many of the activities of municipalities have negative effects on the environment, exacerbating climate change and ozone depletion. At the same time, it is the municipalities that are affected most directly by the consequences of climate change.

Municipalities can be affected by climate change in various ways. In municipalities located along the coastlines of lakes and along the banks of rivers, for example, there is increasing vulnerability to the effects of climate change on water, with detrimental consequences for people's health, the local economy and urban infrastructure.

Municipalities have a triple role in coping with climate change. The first consists in identifying the risks they are faced with at a local level as a consequence of climate change. The second consists in developing strategies for adapting to climate change at macro- and micro-level, while the third consists in undertaking concrete local actions to reduce the risks of climate change.

Spatial and urban planning can serve to regulate key aspects of coping with climate change. This objective is achieved through planning mechanisms regulated by law on the utilisation of land, the spatial distribution of business and non-business facilities, the network of settlements, the distribution of traffic and other infrastructure in the area, strategic assessment of impacts on the environment, measures to protect the environment and nature, guidelines and measures for development, measures for protection from natural and technological disasters and calamities, and the parameters for implementing plans.

The urgent need to integrate risk-reduction measures within improved spatial and urban planning has been highlighted by the occurrence of a significant number of extreme natural events in recent years, especially in the Southeast Planning Region, which have had a dramatic negative impact on urban infrastructure, economic activity and public health in those areas vulnerable to risk.

Spatial and urban planning have the potential to reduce the vulnerability of the effects of climate change such as floods and landslides, enabling flexibility in the development and use of land when coping with climate change effects.

To address these needs, this document responds to the following two questions:

- How can spatial and urban planning contribute more to mitigating climate change and adaptation?
- How can the process of spatial and urban planning in the Republic of Macedonia be improved so as to ensure better climate change governance at central and local levels?

The *Assessment Report on Climate Change Governance* (UNDP, December 2012) emphasises the important role that spatial and urban planning can play in mitigating and adapting to climate change. The way in which a settlement is planned, for example, will greatly influence the scale of the environmental footprint of that settlement and the amount of greenhouse gas emissions produced, as well as the resilience of the settlement to the effects of climate change. However, the Report also states that there are no legal provisions in current domestic law that impose obligations on the municipalities or other stakeholders to take into consideration the issues arising from climate change when drafting spatial planning and urban designs. The Report concludes that there is insufficient integration of spatial-urban designs with the plans of other key sectors such as water, waste and energy. **This constitutes a legal and institutional gap.**

This Strategic Concept document aims to assess the capacity of the municipalities in two planning regions (Vardar and Southeast) for climate change management applying mechanisms and tools of the spatial and urban plans. By abstracting conclusions about the process of spatial and urban planning for these planning regions on the basis of measurable indicators, this document aims **to make an applicable assessment at the level of state strategy on spatial and urban development and offers recommendations for advancing the process of creating a system for spatial and urban planning adequate for climate change management.**

Methodological data were collected from the municipalities of both planning regions by means of questionnaires. Specifically, representatives of local self-government units from both planning regions were provided with two questionnaires:

A questionnaire for reviewing the relevant documents (plans, strategies and acts) and competences was used to obtain an overview of the relevant documents and the level of integration of issues related to climate change within spatial and urban planning documents at local level.

A Questionnaire for assessing climate change management at local level was used to assess the practical functioning of local climate change policy.

The questionnaires were based on the *Methodology for Assessing Climate Change Governance* prepared in the first phase of the project in December 2012. This Methodology treats climate change management as a multispectral issue that includes spatial and urban planning as an area relevant to climate change reduction and adaptation efforts. The questions were formulated so as to generate data about the level of effectiveness, equality, participation, transparency and accountability in climate change management.

II. How can spatial and urban planning help cope with the effects of climate change?

The impact of rapid urbanisation on climate change has made it imperative to assess the potential role of spatial and urban planning in mitigating and adapting to climate change.

Landscaping and the functions of settlements may increase or decrease energy demand, as well as the scope of energy production, distribution and consumption.

The mechanisms of spatial and urban planning and landscaping can respond to the factors that have an impact on anthropogenic GHG emissions into the atmosphere (e.g. increase of economic activity, population growth). Reductions in emissions of carbon dioxide (CO_2) from energy consumption are possible with the introduction of regional cooling and heating systems and better utilisation of fossil fuels, the introduction of vertical housing structures and efficient recycling of solid waste.

New and innovative planning practices can help integrate climate change issues in

urban development planning processes. These practices are based on a more integrated approach to spatial planning, including infrastructural development and activities for ensuring economic growth and the adjustment of these activities to the needs of climate change mitigation and adaptation. Adopting an integrated approach also means planning approach equally addressing mitigation and adaptation, to climate change vulnerability and the reduction of GHG emissions into the atmosphere.

At international level there is consensus that a proper approach to spatial and urban planning and urban development models is crucial for climate change mitigation and adaptation, especially at the level of local self-government. For example, the design and functionality of settlements can either increase or reduce energy demand and can influence the ways in which energy is produced, distributed and consumed. Some analyses show that spatial and urban planning measures, such as the introduction of green infrastructure[1] and the organising of human activities in compact communities and localising the process of production[2] can have a significant impact on the amounts of GHG emissions into the atmosphere and the sensitivity and capacity for adaptation of the local community.

1. Spatial and urban planning capacity for climate change adaptation

Spatial and urban planning is relevant for local adaptation[3] to climate change and for assessing and coping with local vulnerability.[4] **Urban infrastructure and**

[1] The green infrastructure is a spatial planning and landscaping decision-making approach that emphasises the significance of maintaining and using natural resources and features to help overcome urban and climate-related challenges. This approach applies the concept of the multi-functionality of space at local level through appropriate planning and management. This includes using natural systems for collecting storm water and for the treatment of polluted waters, adaptation to climate change and heat waves, preserving biodiversity, food production, air quality, the sustainable use of energy, clean water and healthy soil, while improving the quality of people's lives by providing facilities for recreation, shade and shelter in and around cities and settlements. Green infrastructure plays an important role in coping with floods and other negative effects of climate change. For example, valleys in their natural state can help mitigate floods through their natural capacity for absorbing floodwaters and facilitating the gradual withdrawal of such water into rivers. Forests act as natural absorbents of CO_2 and prevent soil erosion. Marshes absorb polluting substances. Hence the use of "free" green infrastructure in mitigating climate change is more effective and cheaper than expensive artificial technological solutions. (For more on this concept, see: Green Infrastructure, European Commission, 2010.)

[2] For instance, the proximity of residential areas to place of work, transit and commercial services; arrangement of the travel patterns between these distances, has a direct impact on the selection of means of transport and the route, i.e. by reducing the number of trips and the distance travelled in vehicles.

[3] Adaptation of natural or human systems as a response to current or expected climate stimuli or their effects in order to reduce damage or to exploit useful opportunities. There are various kinds of adaptation. anticipative or proactive adaptation is carried out before the impact of climate change is felt; autonomous or spontaneous adaptation is not a conscious response to climate stimuli, but is caused by changes in the environment and natural systems, market, and changes in the human wellbeing; and planned adaptation, which is a result of a well-thought out political decision based on the understanding that the conditions have changed and that consequently everything will change and that action is necessary in order to return to, maintain or achieve the desired state. (Glossary, Intergovernmental Panel on Climate Change, 1995.)

[4] Vulnerability is the level to which a system is subject to the negative effects of climate change and with which the system cannot cope, including climate variability and extremes. Vulnerability is a function of the character, size and degree of climate change and the variations to which the system is

residential buildings should be planned with the local impact of climate change in mind (for instance, taking into account the need to adapt locally significant sectors and resources in order to limit the negative effects of climate change).

Since climate change explicitly relates to planning the future vulnerability, the current state of spatial development is taken as the benchmark for measuring vulnerability. The vulnerability in its constant and potential future state should be a decisive factor for adopting a solution to landscaping.

The vulnerability of municipalities to climate change depends on the state of their urban infrastructure, the types of economic activity in the municipality and the way in which public services are delivered. The population's structure and density represent a key precondition for urban infrastructure planning, land utilisation and public transportation policy in combating climate change.

Adaptive capacity as a component of spatial and urban planning should be taken into consideration in order to reduce vulnerability at local level. Adaptation is a local priority because vulnerability to climate change is increasing at local level.

For proper adaptation through spatial planning and urban design at local level, it is necessary for the municipalities in the planning region to develop **maps of "risky and vulnerable areas"** and to envisage adaptation measures. Such maps are tools for presenting information about the threats, vulnerability and risks that exist on the municipality's area or in the broader planning region. At the same time, maps support the process of risk assessment and risk management at national level. They are also useful for identifying and stating priorities when planning the local self-government unit's territory. Mapping risks and vulnerabilities is also useful for planning the use of land, though this also requires the application of contemporary GIS technologies that incorporate social and economic variables within GIS models.[5] The basic data for vulnerability mapping should be adequate for deciding where risk prevention and reduction is required. **The local self-government unit may undertake activities for locating the facilities and population within the local area that are exposed to risk from natural or man-made disasters and thus need vulnerability mapping.** Data about the local territory and demography are relevant for the process of planning and crisis management. For instance, precise data on the distribution of buildings in the settlement makes it possible to identify precisely the amount of potential damage and losses of buildings in residential areas, while information about the number of residents in residential buildings is an indication of the possible number of victims and the scope of disaster in the event of floods. Apart from data about the residential areas, relevant economic and industrial data can also be collected by the municipalities. Hence, local city planners can use urban planning to overlap the zones of floods and the zones of stability along coastlines with built-up maps in order to determine which of the residential buildings are exposed to risks.

These maps would represent an additional instrument in the process of

exposed, its sensitivity and its adaptive capacity. (Glossary, Intergovernmental Panel on Climate Change, 1995.)

[5] According to the Risk Assessment and Mapping Guidelines for Disaster Management, adopted by the European Commission on 21 December 2010 No. SEC (2010) 1626, the European Commission recommends that member states gradually start developing risk maps. As a first step, it proposes mapping that will show the distribution of the greatest expected threats. This needs to be accompanied by maps that show the spatial distribution of all relevant elements that should be protected (population, infrastructure, nature-protected areas) and maps of different protection entities. The third proposed series of maps should show the spatial distribution of vulnerability in regard to the susceptibility to damage of all elements and entities and which are subject to protection. These maps are the basis for risk mapping which should provide an overview of the probability and impact of certain incidents.

local spatial and urban planning aimed at adaptation to climate change.

According to the Law on Crisis Management, local self-government units are obliged, within the framework of their competences established by law, to assess risks and threats at local level, to establish needs and plan resources for the purpose of providing early warning about potential emergencies and greater efficiency in coping with such disasters. Among other things, local governments must provide risk and threat assessments of possible emergencies in their region. Pursuant to the Crisis Management Law and the Decree on the Methodology for Security Threat Assessment of the Republic of Macedonia a National Assessment is adopted on all risks and threats for the entire territory of the Republic of Macedonia. It is adopted for the purpose of planned, timely, comprehensive and coordinated adoption of decisions, guidelines and recommendations for undertaking preventive measures as well as for coping with emergencies in the most effective manner possible.

The interdependency between spatial and urban planning and climate change adaptation measures can be illustrated as follows. **The planning documents for development and landscaping should be adapted to respond to the increased level of watercourses as a result of precipitation, meteorological conditions and the vulnerability of the urban infrastructure associated to the impact of the hydrological changes and the insufficient capacity of infrastructure for water draining, sewage and treatment.** Furthermore, the increase of water levels in combination with the increased frequency of bad weather conditions may cause problems with sanitary protection if the local urban infrastructure is not able to accept the sudden inflow of water. The quality and the safety of drinking water or water used for recreation could deteriorate as a result of the leaking of effluents from the sewage or microbiological or chemical agents and bio-toxins. **The planning documents also need to adapt the area to higher temperatures and more frequent droughts.** Droughts cause an increased risk of fires and planning documents therefore need to plan the surrounding of settlements taking into account the possibility of fires, dry and combustible surfaces with low vegetation, etc. Extreme weather conditions increase the demand of households and industry for water and energy in settlements and decrease the level of accessible resources. **Climate change has an impact on the economic activity on the territory of local self-government units and for that reason the planning documents should adapt the area where the economic activities are carried out. In that context it is necessary through the mechanisms for spatial and urban planning to assess the capacity and vulnerability of the existing infrastructure[6] for better planning so that the existing systems will be able to adapt to the effects of climate change. This information is of key significance also for adopting decisions for proper investment options.**

The new practices require transparency in the process of planning spatial and urban development and entail raising public awareness about potential disasters associated with climate change.

One of the benefits of overall spatial planning is the integration of various aspects which have an impact on climate change. These include the following aspects:

[6] Coastlines, lakes, rivers, canals, forests, marshes, special eco-systems (for example, fish breeding locations), endangered species, eco-sensitive areas, national parks and natural resources, railway stations, roads, motorways, small asphalted roads, macadam roads, dams, draining and control systems, sewages, bridges, ports, airport terminals, water supply systems, source systems for the treatment of waste water, hospital and medical centres, schools, pensioners' facilities, public places, theatres, sport stadiums, recreational areas, farming areas, forests for exploitation, industrial zones, shopping malls, hotels, settlements, fire-fighting stations and rescue services, emergency zones, locations for storing supplies necessary for emergencies, cultural facilities and archaeological locations, public institutions (state or municipal departments).

- **Assessment of capacity to cope with the long-term consequences of** climate change on the environment and on people's health. The capacity is based on the **strategic impact assessment** and it has to be taken into consideration **when working on spatial and urban designs.**[7] This capacity is still relativized with the inability / incapacity of the spatial and urban planning authorities to assess the dynamics and size of extreme. A consistent vulnerability assessment is based on data on the extremes' dynamics and scope used in cooperation with specialised bodies with direct authority for collecting, storing and distributing data on the climate projection.
- **Assessment of the impact of changes in the land use on climate change.** This assessment can be integrated in the strategic assessment of the environment, which is mandatory for all spatial or urban design / documentation. Based on the impact assessment in regard to the changes in climate, spatial and urban planning could introduce flexibility aimed at responding to climate change. Flexibility capacity is in accordance with existing principles of spatial and urban planning and can easily be integrated in the planning process.
- **Capacity to plan spatial development adaptable to climate change** and to avoid solutions that have no adaptable capacity. This is in the focus of future development. However, spatial and urban planning capacity for adapting existing spatial structures (settlements, infrastructure) is problematic, especially in terms of costs. The municipalities can intervene in the reconstruction of facades and roofs of private collective residential buildings, especially for the purpose of energy efficiency, but relocation would incur unreasonable costs.
- **Capacity for adapting the use of land in compliance with the vulnerability level,** to exclude areas that are prone to accidents and disasters and to plan relocation / withdrawal from the affected zones. This capacity is possible but not always effective and financially justified for permanent settlements because it interferes with the property-legal relations regime and it often requires more finances for the relocation of settlements and of vulnerable areas.

[7] The main principles of the national procedure for strategic environmental assessment (SEA) are provisioned in the Law on Environment (Chapter X, Articles 65-75). The SEA is implemented for strategies, plans and programmes (strategic documents) that are drafted by the state institutions and local self-government units, and which could have an impact on the environment and people's lives and health. The criteria on the necessity of drafting the Report on SEA for certain strategic documents are regulated with the following bylaws: *Decree on strategies, plans, programmes, including the amendments to those strategies, plans and programmes, for which the procedure for evaluating their impact on the environment and the life and the health of people is mandatory (Official Gazette 153/2007) and the Decree on the criteria based on which decisions are made whether certain planning documents could have significant impact on the environment and the health of people (Official Gazette 144/2007).* The institution that drafts the strategic document also drafts the report on the strategic assessment of the environment, which is part of the strategic document. Before the report on SEA is drafted, a procedure for establishing the scope of the report needs to be implemented by the institution / authority that drafts the planning document. The content of the report on SEE is regulated with the *Decree on the content of the Report for strategic environmental assessment (Official Gazette 153/2007).* The strategic document, including the report on SEA, is open for comments from the public and from the other state and public institutions.

2. Spatial and urban planning capacity for climate change mitigation – reduction of greenhouse gas emissions into the atmosphere

Sustainable spatial and urban development is based on planning in several basic sectors: transportation, housing, industrial production, energy, economic activities, land transformation and poverty reduction. At the same time, these listed sectors are the main generators of GHG emissions and hence contribute to climate change.

While the international community is negotiating the common goals of nation-states in tackling global warming, cities and municipalities are focused on initiatives for reducing local GHG emissions, especially by limiting energy consumption.

Cities are centres of economic activity, technological, social and institutional innovations and all of these have critical implications for their competitiveness at regional, national and international level. The concentration of population and economic activities help urban environments play an important role in efforts for reducing GHG emissions. Changes in landscaping can influence levels of GHG emissions.

There is current tendency to concentrate industry in cities. The growth and development of cities is integrally linked to energy availability and demand for fossil fuels which emit greenhouse gases. Reducing GHG emissions will help alleviate many local environmental issues that have an impact on the health and wellbeing of the population, like ambient air pollution, acid rains, soil pollution, production and food consumption. **Since there is a clear two-way link between climate change and spatial and urban development, in accordance with the existing distribution of competences, the municipalities have relevant source competences and with an integral approach they can create local strategies and programmes for climate change mitigation even in the absence of a single law on climate change.** One of the ways in which municipalities can have a positive impact is to impose local goals for reducing GHG emissions. Such initiatives often depend on the objectives imposed by central authorities, as well as the possibility of undertaking joint efforts between local self-government units, forming partnerships of local self-governments with local stakeholders, especially with the private sector. Within the framework of their competencies, local governments can have an impact on the application of building standards in the procedure for obtaining building permits, programmes for energy consumption, production and distribution and energy efficiency, public transportation structuring, industrial processes control, waste and water management and land planning and utilisation, renewable resources energy production stimulation, forests and protected areas management, etc.

Spatial and urban planning can introduce measures to stimulate the use of sustainable technologies and practices, climate change education and training, and research into new technologies whose introduction could reduce the level of emissions into the atmosphere.

In order to respond to the challenge of climate change mitigation, a model for spatial and urban development needs to be developed with a capacity:

- to perform comprehensive planning of spatial development taking into account the contribution of anthropogenic emissions into the atmosphere from all relevant sectors;
- to be based on the physical reality of urban spaces, at the same time ensuring a precise description of the consequences of future spatial development;
- to respond to decisions linked to GHG emissions,
- to be designed for supporting the climate change mitigation policy,
- to offer alternative scenarios.

III. Republic of Macedonia – Spatial and urban planning and climate change

1. Legal framework- assessment of the level of good climate change governance through spatial and urban planning

The Law on Spatial and Urban Planning does not address the issue of climate change (at least not in an explicit and direct manner).

The basic spatial planning platform at central level is the Spatial Plan of the Republic of Macedonia, which is adopted by the Assembly of the Republic of Macedonia and which is worked out based on hierarchically lower documents for spatial planning (i.e. the spatial plan of the region and spatial plans for areas of special interest for the Republic). The process is managed by the Ministry of Environment and Physical Planning and the Agency for Spatial Planning.

At local level, the following documents are adopted: the General Urban Plan (GUP) (for the city of Skopje and for cities that are the seats of the municipalities); the Detailed Urban Plan (DUP) (on the planning scope for which a general urban design is adopted); Urban Design for a Village (UPS) (for the area of rural settlements in the municipality); urban designs for the outskirts of settlements (UPVNM) (when required for planning for the areas in municipalities that are not encompassed within the general urban designs and the village urban designs); the Architectural-Urban Project; and the Urban Project (for urban design of construction area that fall outside the scope of urban designs up to a level of feasibility study).

In order to understand the planning possibilities for the area, i.e. drafting urban plans, with exception of detailed urban plans, the plan designer is also obliged to demand conditions for spatial planning. GUPs, UPSs and UPVNMs are adopted based on the requirements for spatial planning issued in compliance with the Spatial Plan of the Republic of Macedonia.

The process of designing the Spatial Plan of the Republic of Macedonia is centralised process. The municipalities do not have discretion to establish local development priorities. However, municipalities can establish these priorities in local plans by ensuring consistency with the objectives of the Spatial Plan of the Republic of Macedonia.

Local urban designs are adopted in two phases: draft and proposed designs. The drafts are subjected to expert revision. The process of adopting local urban designs is governed by the municipalities / the City of Skopje. Pursuant to legislation, the process is financed by the budgets of the municipalities / the City of Skopje.

Local self-government units implement their competences through the authority competent for urban planning based on a programme that establishes the limitations and the content of the planning endeavour. The programme is adopted by the Municipal Council. The funds for the programme's implementation are established in the budget of the local self-government unit.

The legal framework stipulates the publicity principle in the procedure of adopting and implementing the designs. The Ministry of Environment and Physical Planning has responsibility for supervising the implementation of the publicity principle in the work of the local self-government units, especially in terms of informing the public in a regular, timely and comprehensive manner. **In order to ensure professionalism and publicity in the process of spatial and urban planning, the Municipal Council establishes a participative body that transfers the positions, opinions and needs of the citizens and legal entities, and monitors planning by giving initiatives, guidelines and suggestions for planning solutions in the given municipality.** The participative body consists of: councilpersons, a representative from the municipal administration, a renowned expert in urban planning, representatives of civil associations and citizens of the municipality.

No Geographical Information System has yet been established in the planning regions. As a framework for overall development, however, it is planned in the strategic document for establishing the National Spatial Data Infrastructure (NSDI) of the Republic of Macedonia.[8]

2. Questionnaire results – Common characteristics of the Vardar and Southeast Planning Regions

The assessment in this Report has been made on the basis of the replies submitted to the two questionnaires. Answers were delivered to Questionnaires 1 and 2 by 100% of the relevant Local Government Units in the Vardar Planning Region (9 out of 9), and by 80% of Local Government Units in the Southeast Planning Region (8 out of 10). The information provided by the municipalities in the answers given to Questionnaire 1[9] **shows that the plans at local level are not completely harmonised and adopted for the entire planning scope of the municipalities.** The results that follow are based only on information generated from the answers in Part 5 of Questionnaire 2 that refer to spatial and urban planning. The results from other parts of the questionnaires will be presented in the Final Report.

The legal gap in the Law on Spatial and Urban Planning, and the lack of integration of issues related to mitigating and adapting to climate change within spatial and urban planning, together result in failure to address the issue in practice,[10] i.e. only voluntarily addressing the issue depending on the capacity of the municipal administration to introduce climatological data on the impact of city planning documentation.[11] The actual situation shows that there are no explicit references to climate change. In 100% of cases, the municipalities from both planning regions responded negatively to the question as to whether the topic of climate change is directly integrated into the documents of the municipality for spatial and urban planning. **However, certain responses lead to the conclusion that urban designs and other related planning documents contain indications or implicit references to climate change.** Integrated data from the answers to the questionnaires are shown in Chart 1 for the Vardar Planning Region and in Chart 2 for the Southeast Planning Region. The evaluation of the answers was performed using a scale from 0 to 4 for every individual question linked to the role of SUP in climate change management, where 0 is given if the answer is 'No'; 1 if the answer is 'Insufficient'; 2 if the answer is 'partially' / 'good'; 3 if the answer is 'Satisfactory'; and 4 if the answer is 'Yes'.

[8] The Draft Law on the National Spatial Data Infrastructure was submitted for adoption in April 2013, thus transposing Directive 2007/2/EC of the European Parliament and the Council from 14 March 2007 for establishing the infrastructure of spatial data in the European Community (INSPIRE). The aim of establishing the NSDI is to make the access, exchange, use and distribution of standardised spatial data and services easier, as well as more efficient, effective and harmonised. NSDI establishes a technological, legal and administrative framework for inter-institutional cooperation that supports the initiative for e-governance and enables the integration of spatial data from different sources in one network. The organisational structure of NSDI consists of: the NSDI Council, the NSDI Committee and the NSDI working groups.

[9] For more details, see Appendix 1 in this document.

[10] For example, in the municipalities of Bosilovo from the SEPR, and Negotino, Veles, Lozovo and Rosoman from the VPR.

[11] For example, in the municipalities of Bogdanci, Konce and Strumica from SEPR and the municipality of Gradsko from VPR the issue is addressed by sector policies for the energy efficiency of buildings, spatial-urban planning, transportation conditions, waste management, water management, protection and rescue, and energy construction passports; In the municipality of Sveti Nikole, the issue is also addressed by media / environment management, spatial and urban planning, transportation and roads, land management, forestry and crisis management and key priorities are established in the Local Environmental Action Plan of Sveti Nikole municipality.

Chart 1. The integration of climate change concerns in the urban designs of the municipalities in the Vardar Planning Regions – summarised indicators by municipalities

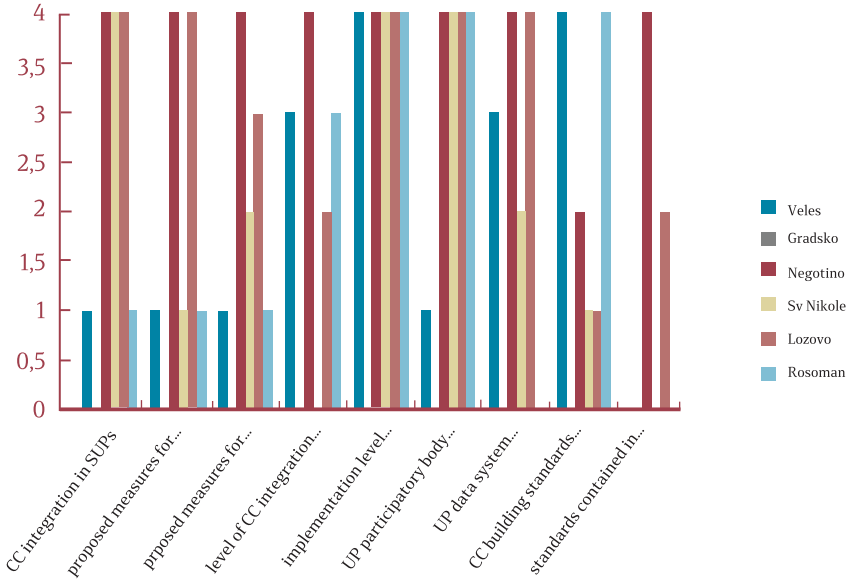
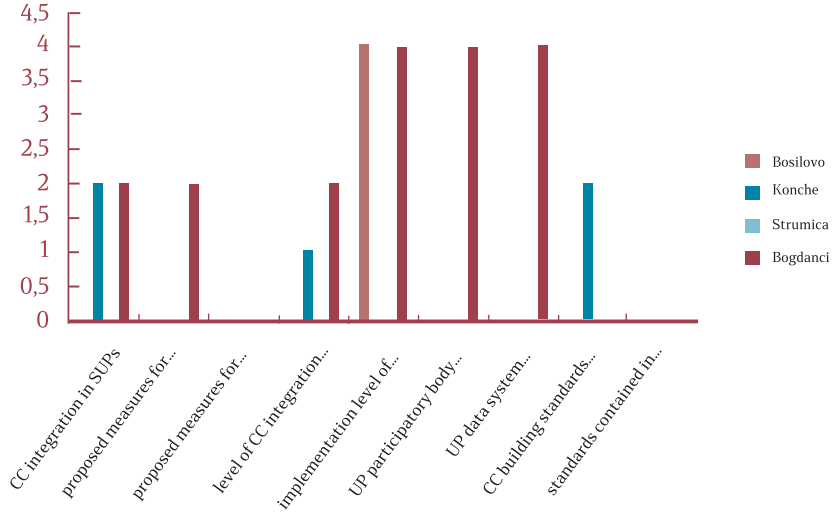


Chart 2. Integration of climate change concerns in the urban designs of the municipalities in the Southeast Planning Regions – summarised indicators by municipalities



The issue of climate change is addressed partially and indirectly in some local urban designs in regard to their environmental sustainability and openness and capacity for coping with disasters.

With regard to the level of integration of urban designs with other municipal sector plans, the majority of answers were negative due to the fact that the designs were not adapted to the existing infrastructure.

In regard to the obstacles faced by municipalities when urban designs are made, the municipalities point out that they have no financial capacities for the expensive and inflexible process of urban planning provisioned for in accordance with the legislative dynamics. As a result, not all designs are adopted covering the entire planning range of the municipalities and some are obsolete[12] and not aligned.[13]

Analysis of the answers suggests that there is a very limited understanding of the link between urban and spatial planning and climate change in local administration. In most cases, climate change is understood as solely an environmental issue and not as an inter-sectoral issue, and thus it is declared that the urban designs passed by the municipality, in the section about the strategic grounds, contain measures for climate change mitigation and adaptation. The answers do not provide a clear indication of how frequently the issue of climate change is present in the process of urban planning in the municipalities. **One of the reasons for this is a prevailing perception of the climate change concept that can be illustrated by the answer "those are general indirect measures", indicating that climate change aspects are of secondary significance in this process and are incorporated into a wider context of issues. If this conclusion is true, then there is a danger that the climate change aspect has not been taken into consideration in the SUP process.**

In only one case[14] was reported that climatologic data and their scenarios were used in spatial and urban planning aimed at mitigating and adapting to climate change through the SEA. The answers do not provide a clear conclusion about the frequency of involvement of climate change issues in the process of urban planning in the municipalities. One of the reasons is the way the CC concept is understood. that could be illustrated through the answer "those are general indirect measures" , This indicates that the CC aspect is of secondary significance in the process and it is incorporated into a wider context of issues. If this conclusion is true, then there is a danger that the CC aspect has not been taken into consideration in the SUP process.

The data about the municipalities are shown in Chart 3 for the Vardar Planning Region and Chart 4 for the Southeast Planning Region.

[12] More details in Appendix 1

[13] Asked to assess the level of integration of urban designs with the other social sector plans (such as those for waters and waste management or energy), the municipalities of Bosilovo, Konce and Strumica from the SEPR, and Gradsko, Sveti Nikole, Demir Kapija, Lozovo declared absence of harmonisation; Bogdanci was well aligned, and Rosoman and Veles declared alignment only of their planning document.

[14] Lozovo.

Chart 3: The integration of climate change concerns in the urban designs of the municipalities in the Vardar Planning Regions – Overview by municipalities

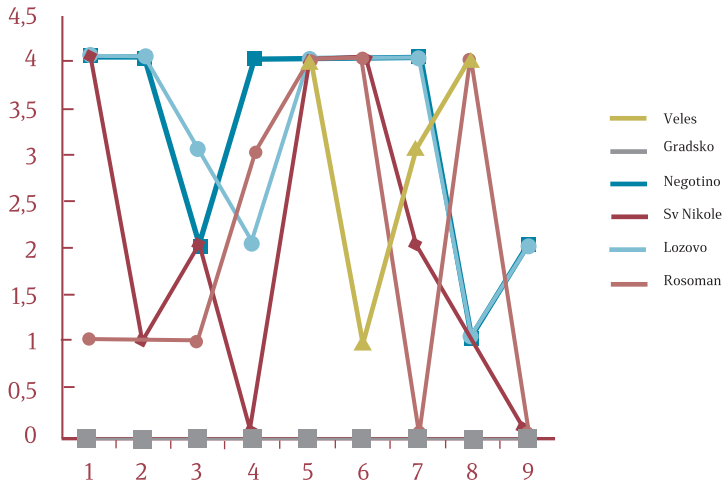
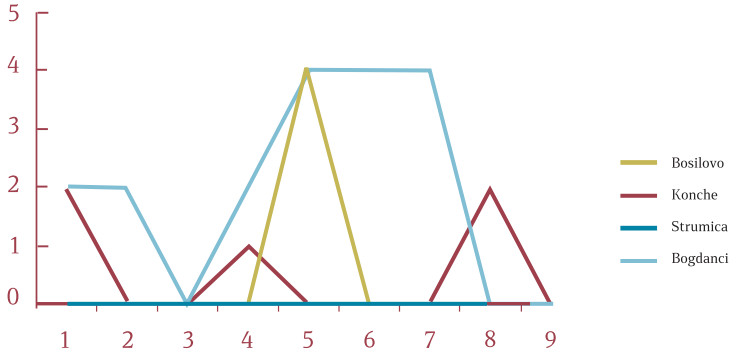


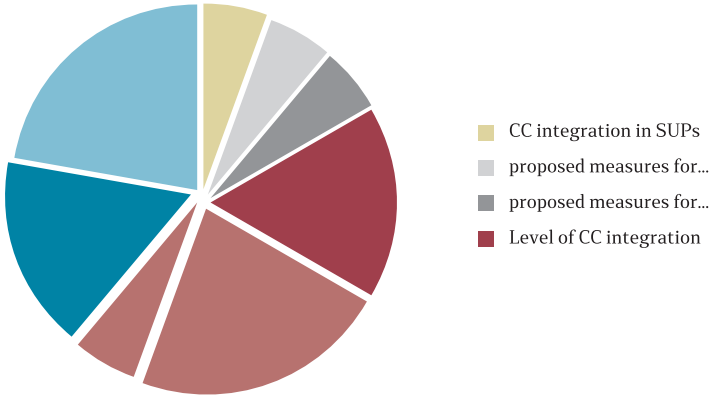
Chart 4: The integration of climate change concerns in the urban designs of the municipalities in the Southeast Planning Regions – Overview by municipalities



The participation of the public is regulated by law, and based on the responses it seems that it is well practiced. Only in a limited number of cases did the municipalities not declare having a participative body in the process of spatial and urban planning.[15] Of all the indicators, the greatest impact on climate change at the level of local self-government in the Vardar Planning Region is that of the implementation of the SUP and the issuance of building permits, to the detriment of other indicators. (See Chart 5).

[15] Veles and Gradsko in the VPR; and Bosilovo, Konce and Strumica in the SEPR.

Chart 5: The integration of climate change concerns in the urban designs of the municipalities in the Vardar Planning Regions – overview by indicators



Unlike the Vardar Planning Region, the situation in the Southeast Region is alarming. Only the level of urban design (UD) implementation is used as a measure for coping with climate change.

When combining the data generated in Part 1 (general, horizontal questions) and Part 5 (SUP sector) of Questionnaire 2, conclusions can be drawn about the obstacles and problems in municipalities when using knowledge about climate change in the process of SUP.[16] **These obstacles can be characterised as technical (lack of data and access), institutional (lack of sufficient staff, lack of know-how) and strategic (lack of explicit / source competences, absence of state policy) obstacles.**

The municipalities mostly state that in general they do not have an authority and staff working on developing policies and actions on climate change or a unit capable of coordinating, monitoring and controlling the activities in so many different sectors involved in preventing climate change. Some municipalities list the following obstacles for *de facto* integration of climate change issues into the SUP: insufficient capacity and expertise of the city planners to implement existing know-how about CC, insufficient knowledge about climate change, insufficient funding, lack of competences about the areas that have an impact on GHG emissions, lack of technical support from the central authorities, as well as lack of human and financial resources for local action in regard to climate change, absence of measures for stimulating local action on climate change, lack of grants and fiscal instruments that could be used for funding local action on climate change, insufficient budget funds in the municipal budget for performing the basic competences of the municipalities and for infrastructural investments. In a few cases, municipalities stated a lack of initiative from the private sector for actions aimed at reducing GHG emissions and climate change adaptation.

The general conclusion is that even if the municipalities have direct competences and capacity for urban planning, this most adequate tool for the current level of municipal development is not sufficiently used due to the abovementioned obstacles.

The manner of performance of spatial and urban development is also the key indicator for climate changes. Simultaneously, climate change makes the urban population vulnerable to the impact of climate change. The dominating

[16] The order does not represent ranking according to the frequency and dynamics of emerging obstacles.

practices of spatial and urban planning in the listed planning regions do not offer sufficient answers to this double challenge.

Based on the questionnaires, one cannot conclude whether, how and when existing knowledge about climate change is used in the process of urban planning. In the next phase it would thus be recommendable to carry out a deeper survey to establish whether, when and how much the municipal administration working on the urban planning knows about climate change and applies that knowledge in the process of urban planning. Such knowledge should be relevant for climate change and knowledge about the climate phenomenon at local and regional levels. A focused analytical study should answer the question as to the level of access of municipalities to climatologic data, their level of know-how and capacity to use knowledge about climate change in spatial and urban planning, establishing which authority within the framework of local self-government could and should use the data on climate change in spatial and urban planning, what the obstacles are that prevent the inflow of information about climate change and their impact within the municipalities, the methods and proceedings/techniques for receiving and using climatologic data for urban planning, establishing the phase in the process of urban planning in which such data will be used, the significance of the data for climate change and their impact on the final decision. This study would enable the identification of obstacles in the flow of climate change information and the need for training on how to use information about climate change in spatial and urban planning.

IV. Recommendations for the strategic concept

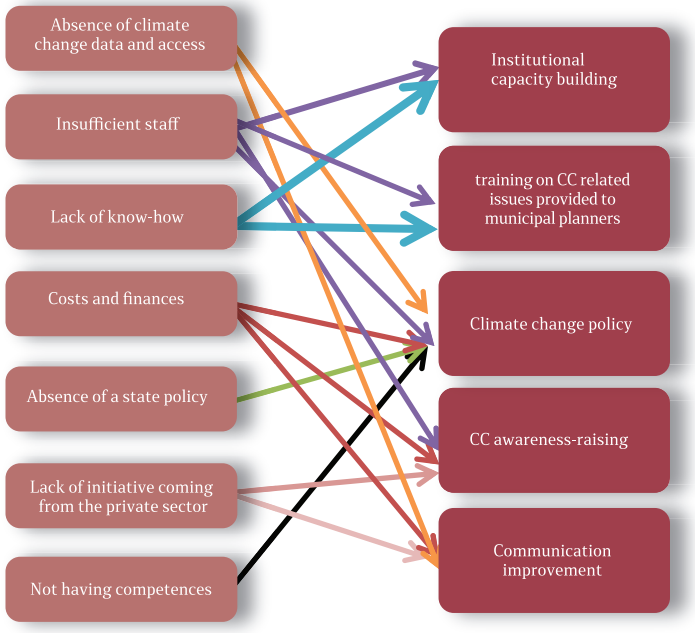
New methods of spatial and urban planning can contribute to mitigating the effects of climate change by promoting public transportation, reducing travelling distances by arranging combined use of vehicles, improving building standards, increasing green spaces and careful use of natural resources. These methods can contribute to adapting to climate change through the relocation of vulnerable settlements and communities, improved infrastructure for water draining and sewage infrastructure, and other measures for the purpose of protection from natural disasters linked to climate change.

In practice, it is evident that climate change is rarely taken into consideration in the Republic of Macedonia when national and local spatial planning policy-makers are planning the development and allocation of resources.

The recommendations that follow are aimed at pointing out possibilities for better spatial and urban planning as a response to climate change and the benefits of developing a new approach to spatial and urban planning.

Spatial planning and urban designs are adequate for addressing the issue of climate change. The results of the questionnaires show, both qualitatively and quantitatively, that the municipalities in the planning regions, compared to their capacity for drafting other planning documents, have the main capacity for spatial planning and landscaping. The proposed solutions for overcoming the identified obstacles are illustrated in Table 1 below.

Chart 1. Problems, proposed solutions



The fundamental recommendation is for municipalities to use local spatial planning and urban designs for determining future local actions to deal with climate change. This fundamental recommendation is due to the actual situation that shows that in the municipalities in the analysed planning regions, the planning documents for spatial and urban development and landscaping are quantitatively listed and at the same time the capacity of the municipalities to draft such planning documents is evident.

In order to ensure local action, *activity at central level* is required. The central authorities should incorporate the issue of coping with climate change in the strategic planning of spatial development and landscaping.

The central authorities should define their own role and goals in climate change policy with legal, administrative and economic measures and especially in the direction of ensuring local action to define the role of local self-government, to envisage stimulating measures for local action on climate change and to find solutions for potential obstacles.

The legal measures should be aimed at creating legal grounds for addressing the issue as a content in spatial planning and urban designs, as well as in defining the methods, conditions and tools for spatial development and planning in a way that will help cope with climate change.

The fundamental institutional approach for stimulating local actions to mitigate and adapt to climate change is to create a central framework that enables local action. The central authorities should find a mechanism for stimulating and helping the municipalities in responding to climate

change by adopting decisions related to spatial and urban planning with long-term implications for the territory of the municipality.

The new practices for urban planning and landscaping should be efficient, meaning the central authorities should find a way to overcome the problem of the limited financial and human resources of local self-government units. This encompasses:

- Developing a state policy and legal/ institutional framework for spatial development and landscaping that incorporates climate change issues and enables central policies and priorities to be transferred and worked out in detail at local level.
- Adopting regulations that are of essential significance for stimulating local actions to mitigate and adapt to climate change, providing a mandate and margin of appreciation to establish local development priorities taking into consideration the local impact of climate change; or by creating a framework in which the municipalities can act because the Municipal Councils adopt the urban designs in accordance with the Law on Spatial and Urban Planning.
- Establishing the competencies needed by municipalities in order to undertake additional measures complementing national measures.
- Developing a programme for institutional and financial support and stimulating the use of mechanisms for spatial and urban planning in local action to mitigate and adapt to climate change.
- Developing a tool for city planners that will help them unify the way of incorporating climate change issues in the processes of spatial and urban planning.
- Establishing how and when climate know-how is used in the process of spatial and urban planning.
- Ensuring the coherence of relevant policies, with coordination in order to resolve the conflict situations related to the established priorities for climate change and for other social, economic and environmental policies.
- Establishing a digitalised spatial information system and system of climatologic data relevant for modelling, projecting and scenarios in the context of climate change, but also for ensuring transparency and services for the interested parties.
- Creating an evaluation mechanism and efficiency indicators of local designs for spatial and urban planning aimed at coping with climate change (adaptation and mitigation).

For the purpose of comprehensively addressing the issues of climate change, the policy for spatial and urban planning should be designed to achieve two main goals: mitigation of and adaptation to the irreversible effects of climate change.

Strategic measures for integrating climate change concerns in the policy of spatial and urban planning should increase the benefits for society in general. The mechanism should ensure that the gains from the adaptation measures are greater than the costs for adaptation i.e. the benefits of adaptation should outweigh the costs that would be incurred if adaptation measures were not implemented.

*

* *

Within those frameworks and in compliance with the mandate they have been given, the municipalities should apply the new practices relevant for climate change adaptation and mitigation. Thus municipalities should work on developing human resources to build capacity for applying new methods of spatial and urban planning as part of the relevant staff's continued professional education.

When drafting local spatial and urban planning documents, the following aspects need to be incorporated:

- landscaping and its impact are evaluated based on locally addressing current climate conditions within the framework of the existing state in the environment;
- the spatial solution should be adapted in order to respond to the changed climate conditions and situation in the environment as a result of climate change projections at local level;
- the use of land and of spatial and urban policies is directed towards dealing with

the negative effects of natural disasters;

- every municipality in the planning region must evaluate its potential risks and consequently perform proper landscaping. Information about climate change needs to be used for a specific development in the local area where it may have an impact.
- the municipalities in the planning region should start cooperating and work on a joint agenda aimed at regional landscaping;
- spatial adaptation at the level of the planning region should take into consideration the possible influence of neighbouring municipalities to which is economically and socially linked;
- the municipalities in the planning region should establish cooperation and joint agendas aimed at joint efforts for minimising anthropogenic GHG emissions into the atmosphere;
- the municipalities in the planning region should ensure greater transparency of spatial planning and urban designs and the process of their adoption, thus increasing local public awareness of the effects of climate change and ensuring their involvement in coping with climate change.

Finally, planning should be based on consistent data and should encompass the integration of available climatologic data in the process of planning so that the implications of climate change can be modelled and understood in the context of spatial and urban planning, providing afterwards with new scenarios for local urban development.

In practice, according to the answers in the questionnaires, relevant data and findings about the local impact of climate change are not available to the municipalities. Consequently, a practice of exchanging information aimed at developing adequate methods and procedures for designing the urban space needs to be established.

APPENDICES

APPENDIX 1. TABLE OVERVIEW OF LONG-TERM, MID-TERM AND SHORT-TERM PLANNING DOCUMENTS IN THE AREA OF CLIMATE CHANGE FOR THE SOUTHEAST AND VARDAR PLANNING REGIONS – EXCERPT FIELD: SPATIAL PLANNING

No.	Planning document	Body competent for			Administration authority	Validity
		adoption	proposal	development and monitoring		
Area/Sector: SPATIAL PLANNING						
1)	Spatial Plan of the Republic of Macedonia	Assembly of the Republic of Macedonia	Government of the Republic of Macedonia	Spatial Planning Agency	Spatial Planning Agency Ministry of Environment and Physical Planning – Spatial Planning Department	2004 -2020
Legal grounds: Articles 8, 9, 22, 26, 28 and 35 of Law on Spatial and Urban Planning ("Official Gazette of RM", No.51/05;U.No.69/06;137/07;151/07; 91/09;124/10; 18/11;53/11;)						
2)	Programme for Implementing the Spatial Plan of the Republic of Macedonia	Government of the Republic of Macedonia	Ministry of Environment and Physical Planning	Ministry of Environment and Physical Planning	Ministry of Environment and Physical Planning – Spatial Planning Sector	2008–2010
Legal grounds: Article 3 of the Law on Implementing the Spatial Plan of the Republic of Macedonia ("Official Gazette of RM" No. 39/04) ▪ There is no regulation determining the procedure for the programme's development						
3)	Programme for adoption of urban designs – Municipality of Veles	Veles Municipal Council	Municipality of Veles	Municipality of Veles	Urban and Communal Infrastructure Department in Municipality of Veles	Annually
4)	General Urban Design of the town of Veles	Veles Municipal Council	Municipality of Veles	Municipality of Veles	Urban and Communal Infrastructure Department in Municipality of Veles	2006-

No.	Planning document	Body competent for			Administration authority	Validity
		adoption	proposal	development and monitoring		
5)	25 Detailed Urban Designs (DUP), Urban Designs for Settlements (UPS); Veles	Veles Municipal Council	Municipality of Veles	Municipality of Veles	Urban and Communal Infrastructure Department in Municipality of Veles	Adopted and in procedure
6)	8 Urban Designs- The settlement's outskirts (UPVNM); Veles	Veles Municipal Council	Municipality of Veles	Municipality of Veles	Urban and Communal Infrastructure Department in Municipality of Veles	Adopted and in procedure
7)	20 Documents for local urban planning; Project for architectural-urban projects - Veles	Veles Municipal Council	Municipality of Veles	Municipality of Veles	Urban and Communal Infrastructure Department in Municipality of Veles	Adopted and in procedure
8)	Negotino Urban Design	Negotino Municipal Council	Mayor of Negotino Urban and Environment Protection Department	Mayor of Negotino Urban and Environment Protection Department	Urban and Environment Protection Department	2011
9)	Negotino DUP	Negotino Municipal Council	Mayor of Negotino Urban and Environment Protection Department	Mayor of Negotino Urban and Environment Protection Department	Urban and Environment Protection Department	2012
10)	Urban designs for three settlements – Negotino	Negotino Municipal Council	Mayor of Negotino Urban and Environment Protection Department	Mayor of Negotino Urban and Environment Protection Department	Urban and Environment Protection Department	Underway for three settlements

No.	Planning document	Body competent for			Administration authority	Validity
		adoption	proposal	development and monitoring		
11)	Urban Design - Settlement's Outskirts (UPVNM);	Negotino Municipal Council	Mayor of Negotino Urban and Environment Protection Department	Mayor of Negotino Urban and Environment Protection Department	Urban and Environment Protection Department	2012
12)	Architectural-Urban Project Negotino	Municipality of Negotino	Mayor of Negotino Urban and Environment Protection Department	Urban and Environment Protection Department	Urban and Environment Protection Department	2012-
13)	GUP Konce 1997–2010	Municipality of Konce	Municipality of Konce	Municipality of Konce	Municipality of Konce	2010
14)	DUP Konce part 2003–2008	Municipality of Konce	Municipality of Konce	Municipality of Konce	Municipality of Konce	2008
15)	Urban Design –Outskirts of the Settlement of Sonceva Ezerska Naselba at lake Mantovo 2008–2018	Municipality of Konce	Municipality of Konce	Municipality of Konce	Municipality of Konce	2018
16)	LUPD for CL 31/1 CA Konce	Municipality of Konce	Municipality of Konce	Municipality of Konce	Municipality of Konce	2011
17)	GUP for the Central Office of the Municipality of Lozovo	Lozovo Municipal Council Ministry of Transport and Communications	Local self-government Lozovo – Urban Department	Local self-government Lozovo – Urban Department LLC for Urban Planning, Architecture and Engineering-ZUAS Skopje	Local self-government Lozovo – Urban Department	Planning period 1999-2009

No.	Planning document	Body competent for			Administration authority	Validity
		adoption	proposal	development and monitoring		
18)	Urban design for part of the village of Lozovo Urban Bloc 1 Housing	Lozovo Municipal Council	LSG Lozovo – Urban Department	-Ministry of Transport and Communications -LSG Lozovo – Urban Department -Company for construction, trade and services STAN ART dooel Kumanovo	LSG Lozovo – Urban Department	Planning period 2008-2018
19)	Urban design for part of the village of Lozovo Urban Block 9 and 10 Industrial Zone	Lozovo Municipal Council	LSG Lozovo – Urban Department	-LSG Lozovo – Urban Department -Ministry of Transport and Communications -Design Centre - Trajce DOOEL-Kavadarci	LSG Lozovo – Urban Department	Planning period 2011-2021
20)	Urban design for part of the village of Saramzalino Urban Bloc 1 Amendments	Lozovo Municipal Council	LSG Lozovo – Urban Department	-Ministry of Transport and Communications -LSG Lozovo – Urban Department	LSG Lozovo – Urban Department	Planning period 2007-2017
21)	Urban design for a gas station with accompanying facilities at M-5	LSG Lozovo	LSG Lozovo	-Ministry of Transport and Communications -LSG Lozovo – Urban Department	LSG Lozovo – Urban Department	2006
22)	General Urban Design Chaska, implemented as an Urban Design for the village of Caska	Caska Municipal Council	Mayor	Municipality of Caska	Municipality of Caska	2000-2010
23)	Urban documents for the settlement of Melnica, implemented as an Urban design for the village of Melnica	Caska Municipal Council	Municipality of Caska	Municipality of Caska	Municipality of Caska	2000- 2010

No.	Planning document	Body competent for			Administration authority	Validity
		adoption	proposal	development and monitoring		
24)	Urban documents for the settlement of Lisice, applied as an Urban Design for the village of Lisice.	Caska Municipal Council	Municipality of Caska	Municipality of Caska	Municipality of Caska	2000-2010
25)	Detailed Urban Design for the tourist site of Gorno Vranovci, Urban Design for the village of G.Vranovci.	Caska Municipal Council	Municipality of Caska	Municipality of Caska	Municipality of Caska	1998
26)	Urban designs for the outskirts of the settlement of Golozinci for a pig farm.	Caska Municipal Council	Municipality of Caska	Municipality of Caska	Municipality of Caska	2007-2017
27)	Urban designs for the settlement's outskirts for the construction of a warehouse and the production facility Zabel at CL 934/1 CA Izvo	Caska Municipal Council	Municipality of Caska	Municipality of Caska	Municipality of Caska	2008-2018
28)	GUP Bosilovo	Municipality of Bosilovo	Municipality of Bosilovo	Municipality of Bosilovo	Municipality of Bosilovo	1999-
29)	DUP Bosilovo	Municipality of Bosilovo	Municipality of Bosilovo	Municipality of Bosilovo	Municipality of Bosilovo	1988
30)	Urban design for the settlement's outskirts	Municipality of Bosilovo	Municipality of Bosilovo	Municipality of Bosilovo	Municipality of Bosilovo	2009
31)	GUP for the town of Sveti Nikole Amendments to GUP for the town of Sveti Nikole (additions and enlargements) GUP for an economic facility, site Stanicki Pat Amendments to GUP for Sveti Nikole, site Mavrovica GUP for an economic facility, site Smknat Breg, Sveti Nikole	Municipal Council	Municipality	Municipality	Municipality	1998-2008 In development 2004-2014 2004-2014 2005-2015

No.	Planning document	Body competent for			Administration authority	Validity
		adoption	proposal	development and monitoring		
32)	UD for the village of Kadrifakovo – amendments (Synthesized plan) UD for the village of Malino UPVNM for an alternative water supply, Sveti Nikole Divjak, CA Knezje UPVNM for an economic facility-workshop for PVC joinery, Mavrovica UPVNM for a small facility-a warehouse, CA Azmibegovo UPVNM for a small facility – a warehouse, Lozov Rasadnik UPVNM for an economic facility-production of food additives and spices, CA Gorobinci UPVNM for the construction of a driving training polygon, Argac, CA Pesirovo UPVNM for the construction of a photo-voltaic system for electricity production, Gorni Livadi, CA Sveti Nikole UPVNM for the construction of a distribution centre for agricultural products, Gorna Jurija, CA Amzabegovo UPVNM for construction of a light and non-polluting industry, Megju Endeci, CA Amzabegovo UPVNM Gorobinci for the construction of small economic facilities, Bes Karac, CA Gorobinci UPVNM for E-infrastructure-facilities for the production of electricity and heating from waste, Gadez, CA Bogoslovec UPVNM Amzabegovo for the construction of a light and non-polluting industry, industrial zone Ovce Pole, CA Amzibegovo	Municipal Council	Municipality	Municipality	Municipality	In development In development 2007-2017 2006-2016 2007-2017 2007-2017 2007-2017 2010-2020 2010-2020 2010-2020 2012-2022 In development

APPENDIX 2. VARDAR PLANNING REGION – RESULTS FROM THE QUESTIONNAIRE 2 PART 5. SPATIAL AND URBAN PLANNING -NARRATIVE

Questions	Veles	Gradsko	Negotino	Sveti Nikole
Assess the aspects of CL (cadastral lot) in spatial planning and urban designs and other documents of the municipality; Do they contain explicit references to (a) environmental sustainability, (b) climate change; and (c) resilience and disaster management capacity	*These are in general indirect measures*	No	*Yes, the construction of broad streets for the purpose of ventilation, green areas, protective belts, stormwater sewerage, flashflood management, access for fire-fighting facilities and ambulance vehicles*	*Yes*
5.2 Assess aspects of CL for all spatial planning and urban designs approved by the municipalities. Do the designs contain mitigation and adaptation measures? List several typical measures.	*These are in general indirect measures*	No	*Protection and rescue measures, measures and means for the protection and overhaul of the environment, measures for protection and rescue from fires, explosions and hazardous materials*	*No (insignificant percentage)*
5.3. How many of the general and detailed designs propose climate change mitigation measures and/or adaptation measures?	*These are in general indirect measures*	No	*Pursuant to regulations*	*Partially (because their development is of earlier date)*
5.4. Assess the integration level of urban designs with other municipal plans by sectors (such as those for water and waste management or energy).	*When adopting new planning documents, the municipal plans and measures that envisage them are taken into account.*	No	*Proper coordination among departments within the municipal administration*	*Integration is planned for the next stage*
5.5. Has the municipality secured professional monitoring of the implementation of the designs and the level of the designs' realisation?	*Professional monitoring of designs and degree of realisation.*	No	*Yes, advisor for development and implementation of urban designs*	*Yes, satisfactory aspect*

Questions	Veles	Gradsko	Negotino	Sveti Nikole
5.6. Has the municipality established a participative body that conveys the positions, opinions and needs of citizens and legal entities; monitors the planning by providing initiatives, guidelines and suggestions on the development of planning solutions for the given municipality?	*These are in general indirect measures*	No	*Yes, there is a participative body that operates pursuant to regulations*	*Yes, there are days when citizens can meet with the mayor and council members*
5.7. Is there a system for developing and submitting data and information in the field of spatial planning at municipal level?	*When adopting new planning documents the municipal plans and measures that envisage them are taken into account.*	No	*Yes, with public presentations and surveys on each new urban design*	*No system exists*
6.1 Are there construction standards that refer to climate change or the use of materials for reducing greenhouse gas emissions, increasing energy efficiency, etc?	*Yes, construction standards are prescribed in national legislation.*	No	*In compliance with construction regulations, energy efficiency, etc*	*Yes, but still not enforced*
6.2 Do the building permits issued by the municipality contain such standards?	*No*	No	*Yes*	*No*

Questions	Lozovo	Rosoman	Demir Kapija
Assess the aspects of CL (cadastral lot) in spatial planning and urban designs and other documents of the municipality; Do they contain explicit references to (a) environmental sustainability, (b) climate change; and (c) resilience and disaster management capacity	The urban designs and other documents of the municipality incorporate environmental sustainability, climate change and disaster management	*These are in general indirect measures*	*Yes*
5.2 Assess aspects of CL for all spatial planning and urban designs approved by the municipalities. Do the designs contain mitigation and adaptation measures? List several typical measures.	Urban designs are approved by the municipality, i.e. the section of strategic grounds contains mitigation and adaptation measures to the CL: Preliminary plan on the filtering station and pipeline-Lozovo, Milino, Dorfulija, Karatmanovo-implemented urban environmental assessment; Urban design for part of the village of Lozovo Block 9 and 10, amendments (industrial zone)-implemented SEA	*These are in general indirect measures*	*No*
5.3. How many of the general and detailed designs propose climate change mitigation measures and/or adaptation measures?	Preliminary plan on the filtering station and pipeline-Lozovo, Milino, Dorfulija, Karatmanovo-implemented urban environmental assessment	*These are in general indirect measures*	
5.4. Assess the integration level of urban designs with other municipal plans by sectors (such as those for water and waste management or energy).	Urban designs are partially integrated with other municipal plans by sectors	*When adopting new planning documents the municipality plans and measures that envisage them are taken into account.*	*None*
5.5. Has the municipality secured professional monitoring of the implementation of the designs and the level of the designs' realisation?	Yes, the municipality has secured professional monitoring of the implementation and level of realization of designs by the Urban Department	*Yes*	*None*
5.6. Has the municipality established a participative body that conveys the positions, opinions and needs of citizens and legal entities; monitors the planning by providing initiatives, guidelines and suggestions on the development of planning solutions for the given municipality?	Yes, the municipality has established a participative body that conveys the positions, opinions and needs of citizens and legal entities	*Yes*	*Yes*

Questions	Lozovo	Rosoman	Demir Kapija
5.7. Is there a system for developing and submitting data and information in the field of spatial planning at municipal level?	Yes, there is a system for developing and submitting information in the field of spatial planning at the Urban Department	*No*	*Yes, network for inclusive development of VPR*
6.1 Are there construction standards that refer to climate change or the use of materials for reducing greenhouse gas emissions, increasing energy efficiency, etc?	Space	*Yes, construction standards are prescribed in the national legislation.*	*Yes*
6.2 Do the building permits issued by the municipality contain such standards?	Yes, in line with regulations	*No*	*No*

APPENDIX 3. SOUTHEAST PLANNING REGION – RESULTS FROM THE QUESTIONNAIRE 2 PART 5. SPATIAL AND URBAN PLANNING-NARRATIVE

Questions	Bosilovo	Konce	Strumica	Bogdanci
Assess the aspects of CL (cadastral lot) in spatial planning and urban designs and other documents of the municipality; Do they contain explicit references to (a) environmental sustainability, (b) climate change; and (c) resilience and disaster management capacity?	No	Sufficient	Do not contain explicit references	Good
5.2 Assess aspects of CL for all spatial planning and urban designs approved by the municipalities. Do the designs contain mitigation and adaptation measures? List several typical measures.	No	None	Do not contain specific measures	Good (the planned use of land is precisely determined, no disruption of the course of the underground waters, measuring air quality)

Questions	Bosilovo	Konce	Strumica	Bogdanci
5.3. How many of the general and detailed designs propose climate change mitigation measures and/or adaptation measures?	Do not propose	None	Do not propose	None (the detailed designs are of earlier date)
5.4. Assess the integration level of urban designs with other municipal plans by sectors (such as those for water and waste management or energy).	Not harmonised with the existing infrastructure	Insufficiently	No such harmonization	Good
5.5. Has the municipality secured professional monitoring of the implementation and realization of designs?	Yes	None	No	Yes, through a participative body
5.6. Has the municipality established a participative body which conveys the positions, opinions and needs of citizens and legal entities and which monitors the planning by providing initiatives, guidelines and suggestions on the development of planning solutions for the given municipality?	No	None	No	Yes
5.7. Is there a system for developing and submitting data and information in the field of spatial planning at municipal level?	No	None	No	Yes
6.1 Are there construction standards that refer to climate change or the use of materials for reducing greenhouse gas emissions, increasing energy efficiency, etc?	No	Partially	No. According to the new regulations, it is the Rulebook on energy features of buildings and energy controls that stipulates such standards.	Don't know
6.2 Do the building permits issued by the municipality contain such standards?	No	No	According to the new Rulebook, such standards will be part of the procedure for obtaining a building permit.	No