Republic of Macedonia
Ministry of Environment and Physical Planning

Republic of Macedonia
Ministry of Local Self-Government

Assessment of local action for mitigating and adapting to climate change in

THE VARDAR AND SOUTHEAST PLANNING REGIONS

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.

ASSESSMENT OF LOCAL ACTION FOR MITIGATING AND ADAPTING TO CLIMATE CHANGE IN **THE VARDAR AND SOUTHEAST PLANNING REGIONS**

Author:
Assistant Professor Biljana Puleska, PhD

November, 2013

CONTENTS

I. Introduction **5**

II. Methodology **6**

III. Need and Justification of Local Action for CC Management **7**

IV. Results from the two questionnaires **8**

1. Results of Questionnaire No. 1 8

2. Results of Questionnaire No. 2 11

2.1. Assessment of the General Legal, Strategic and Institutional Framework for Climate Change (CC) at Local and Regional Levels - Formulation of Local Policy on CC, Setting Priorities and Implementation 11

2.2. Assessment of Capacity for Local Action in the Area of Environmental Management 25

2.3. Assessment of Capacity for Local Action in the Area of Energy Efficiency 26

2.4. Assessment of Capacity for Local Action in the Area of Transport 26

2.5. Assessment of Capacity for Local Action in the Area of Crisis Management and Protection 26

2.6 Assessment of Capacity for Local Action in the Area of Physical and Urban Planning - Common Features of the Vardar and Southeast Planning Regions 29

2.7 Assessment of the Level of Good Governance 33

2.7.1. Level of Effectiveness 33

2.7.2. Level of Participation 34

2.7.3. Level of Equality and Non-discrimination 34

2.7.4. Transparency and Accountability 34

V. Results, Conclusions and Recommendations of the Workshops **35**

1. Vardar Planning Region Workshop **35**

2. Southeast Planning Region Workshop **35**

VI. Strategic Concept – The Role of Physical and Urban Planning for Good CC Management **36**

1. Using Both Spatial and Urban Planning to Deal with Climate Change **37**

2. Spatial and Urban Planning Capacity for Adaptation to CC **38**

3. Spatial and Urban Planning Capacity for CC Mitigation - Reduction of Greenhouse Gas Emissions into the Atmosphere **41**

4. Legislative Framework in the Republic of Macedonia - Assessment of the Level of Good CC Management through Physical and Urban Planning **42**

VII. Conclusions and Recommendations **43**

1. Mandate to Plan and Implement CC Policy 43
2. Integration of Climate Change Issues 44
3. Cooperation between Municipalities 45
4. Resources 47
5. Good Governance and Local Action for CC 48
6. Urban Planning 49
7. Collaboration at National and Local Level 52

VIII. Tabular summary: conclusions and priorities, common framework for VPR and SPR **54**

1. General CC policy 54
2. Energy 59
3. Transport 59
4. Waste 60
5. Spatial and urban planning 61
6. Crisis management; protection and rescue 62

IX. Results and Conclusions from the Final Event **63**

I. Introduction

Considering the risks related to climate change (CC) and the challenges of taking effective actions to mitigate and adapt to such change, the Republic of Macedonia has ratified international instruments in the area of CC, i.e. the UN Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. In 2003, the Republic of Macedonia submitted its initial National Communication reporting the level of its implementation of the obligations of the Convention. Macedonia prepared and submitted its Second National Communication in January 2009. The country is currently working on the preparation of the Third National Communication. As a country that is not included in Annex I of the UNFCCC, the Republic of Macedonia has no obligation to reduce its greenhouse gas emissions into the atmosphere. The Republic of Macedonia is also bound by the Copenhagen Treaty. At the end of January 2010, on the basis of the Action Plan drafted as a part of the Second National Communication to the UNFCCC, Macedonia established reduction targets and a preliminary list of mitigation measures (without quantifying the emissions abatement measures).

During the second half of 2012, the UNDP Office in Skopje conducted the first phase of the Project for the Assessment of Good Governance and Local Action for Climate Change. This project was undertaken as part of the regional project 'Think Globally, Develop Locally', jointly managed by the UNDP Office in Skopje, the UNDP Regional Centre in Bratislava and the Network of Associations of Local Authorities of South East Europe (NALAS). The goal of the first phase was to develop a methodology for assessing CC management. The recommendations and guidelines, as well as the list of indicators for the assessment of CC management contained in the Final Report on the Implementation of Phase I of the Project, enabled the performance of a comprehensive assessment of management of local action for CC as Phase II of the Project. Phase II is supported by the UNDP Good Governance Centre located in Oslo as a project activity of the UNDP Office in Skopje within the Project 'Local Action for Inclusive Development - Local Development Programme' and is aimed at the application of the CC Management Methodology in the Vardar and Southeast Planning Regions. The results achieved in accordance with the Methodology described below are contained in this Report. The assessment aims to answer questions about the capacity of municipalities in the Vardar and Southeast Planning Regions to take local action for the management of CC. The assessment is made on the basis of measurable indicators developed within the first phase of the Project.

II. Methodology

The assessment of local capacity for CC management in the two selected Planning Regions has been conducted in order to determine the situation in the municipalities and to make recommendations for the enhancement of local capacity to undertake local CC actions in accordance with CC management practices in the international community and the EU. The terms of reference cover the assessment of the capacity of municipalities in both Planning Regions for CC management and their shared problems. The assessment including the following steps:

1. The establishment of a List and collection of relevant data and documents (acts, policies, plans) at national, regional and local levels concerning issues of CC management in both Planning Regions;
2. The establishment of a List of relevant national, regional and local stakeholders and their relevant responsibilities in the CC management process applicable for the Vardar and Southeast Regions;
3. The performance of a detailed assessment of CC management at local level and possible obstacles, as well as proposed actions to overcome those obstacles.

The Methodology for the implementation of this comprehensive assessment included a review of relevant documents (plans, strategies and acts), visits to municipalities in the two Planning Regions for the purpose of conducting interviews and workshops according within a predetermined timeframe. The assessment data was collected by having municipal representatives fill out questionnaires. Representatives of Local Self-Government Units (LGUs) from both Planning Regions were given two questionnaires, as follows:

- **Questionnaire for Reviewing Relevant Documents** (plans, strategies and acts) **and Responsibilities.** Based on the data collected by this Questionnaire, the first deliverable has been prepared, i.e. the *Inventory of Relevant Documents for Local Climate Change Action* in both Planning Regions. Through a content analysis of the Inventory documents, combined with the answers submitted to Questionnaire 2, the climate change model and policy has been determined, as well as the level of integration of the CC issue in strategic and planning documents at local level in the selected Planning Regions. Data was also obtained on the parties involved in the local CC management process.
- **Questionnaire for Assessing CC Management at Local Level**. This Questionnaire contains general questions about CC and questions with regard to specific sectoral policies relevant to CC management. Using this Questionnaire, an assessment has been performed of the effects of policies related to climate change, and in particular the effects of actions for mitigating and adapting to CC in the Planning Regions and municipalities, including areas suitable for inter-municipal cooperation for the purpose of achieving good CC management.

The Questionnaires are based on the Methodology for Assessing the Management of Local Action for CC prepared in the First Phase of the Project (December 2012) and treat the management of CC as a multi-sectoral issue that covers the areas of environment (industrial pollution, waste management, water management, ambient air quality, nature protection), spatial and urban planning, energy, transport, land use and forestry, protection and rescue and crisis management, health, and the reduction of risk from disasters in efforts to reduce and adapt to CC. According to the definition used in the methodology, good CC management also has to include improved awareness of knowledge-based management, greater political space for

civil society participation and cooperation among all stakeholders. The questions were designed to obtain data on the degree of effectiveness, equality, participation, transparency and accountability in managing climate change. Given that one of the goals is to provide a comparative review of the main features of CC management at local level in the Vardar and Southeast Planning Regions and the municipalities within them, with an emphasis on the content and manner of CC management at local level, an identical Questionnaire was used for both Regions. The questions contained in the Questionnaires were categorized into logical groups (chapters): (1) Review of relevant documents and competencies and legislation; (2) Assessment of CC management regarding mitigation and adaptation at local level. The data contained in the relevant documents and data obtained from the Questionnaire were then analysed.

The assessment in this Report has been made on the basis of replies submitted to the two questionnaires. All of the nine municipalities of the Vardar Planning Region and eight of the ten municipalities of the Southeast Planning Region submitted answers to both questionnaires. The outcomes of the analysis, conclusions and recommendations are contained in this Report on the Assessment of CC Management at Local Level.

The findings of this Report, and the gaps identified herein, will be discussed during two regional workshops to be held in both Planning Regions. These workshops are expected to supply additional data that will help to make a complete assessment of the capacities of municipalities in both Planning Regions to take local action for climate change.

III. Need and Justification of Local Action for CC Management

Municipalities have an important dual role in tackling climate change. The first of these consists of taking measures to reduce local greenhouse gas emissions. These measures are considered to provide a local share in achieving national targets for emission reduction, but are also directly aimed at the reduction of CC risks for the local community. The declared List of Measures for the Reduction of Greenhouse Gas Emissions, which the Republic of Macedonia has submitted as a reflection of national preparedness for association to the Copenhagen Accord, contains many measures under local authority, as follows:

- In the energy sector: increasing the use of renewable energy sources and increasing energy efficiency;
- In the transport sector: rehabilitation and maintenance of road infrastructure and improvement of public and intercity transport by better planning, organization and regulation of transport in urban centres and modernization of the means of transport;
- In the waste sector: establishment of a system for efficient capturing of methane and raising public awareness of the restriction on uncontrolled burning of waste and the reduction of methane emissions by enhancing the system for waste-water treatment;
- In the agriculture and forestry sector: preparation of projects using the Clean Development Mechanism in agriculture, implementation of national strategic documents in the forestry sector, afforestation, measures for the prevention of fires, the prevention of illegal forest logging, etc.

The second role of municipalities in managing climate change consists of determining the specific local CC-related risks they

face (e.g., municipalities located in coastal areas and near water-flows are more vulnerable to the negative effects of climate change on water—effects that pose a great risk to the population's life and health, property, economic activity and well-being and the status of the urban infrastructure in the area).

Local action is aimed primarily at reducing the local risks of CC. This is because the effects of climate change are manifested at local level and because vulnerability and adaptive capacity are determined in local conditions. Moreover, the likelihood of adaptation measures being implemented is highest at local level.

Taking measures at local and Planning Region levels can be justified from several aspects. First, **many of the measures envisaged and taken to mitigate and adapt to climate change fall within the original competencies of Local Government Units**. These competencies include urban and rural physical planning; the issuance of permits for the construction of buildings of local importance; spatial and land development; measures for environmental protection; local economic development planning; the identification of development and structural priorities; utilities; the preparation and implementation of measures for the protection and rescue of people and property from natural disasters and other accidents; fire protection, etc.

Through their local development and urban planning policies, LGUs can increase the resilience of the urban and rural population and infrastructure to climate change. Furthermore, municipalities have a number of competencies delegated to them by special laws for providing relevant CC mitigation and adaptation measures. Thus the municipalities appear as the implementers of central policies, for example in the area of energy consumption and energy efficiency.

As an option for dealing with CC that directly affects their areas, LGUs have a legal mechanism available for the establishment of inter-municipal cooperation for achieving more efficient and cost-effective performance of their municipal responsibilities as established by law and for the accomplishment of their common interests and goals.

IV. Results from the two questionnaires

This Chapter deals with the assessment of the capacities of municipalities in the Vardar and Southeast Planning Regions to manage climate change (CC). The assessment of municipal capacity to deal with CC in these Planning Regions applies analogously to the capacity of all municipalities. Therefore, the conclusions and recommendations in this Report can be adequately replicated in each LGU in the Republic of Macedonia. However, the implementation of recommendations in other Planning Regions that are not subject to the current assessment will need to take into account the characteristics of the particular Planning Region pertinent to for local CC management.

Integrated data from the responses to both questionnaires from the Vardar and Southeast Planning Regions is presented in diagrams. Evaluation of the responses was performed using a scale from 0 to 4 for each individual question related to dealing with CC, as follows: 0 if the answer is "no", 1 if the response is "insufficient", 2 to denote "partial"/ "good", 3 to denote "satisfactory", and 4 to denote "yes".

1. Results of Questionnaire No. 1

One of the notable results emerging from the answers to Questionnaire No. 1 is the *Inventory of Relevant Local Strategic and Planning Documents* for planning and taking local action in individual sectoral policies relating to for mitigating and adapting to climate change. There are a total of 130 local planning and programming documents related to CC concerning municipalities in the Vardar and Southeast Planning Regions. These documents relate to the

following areas of sustainable development: Local Environmental Action Plans; water management, especially in terms of protective measures; ambient air quality; nature protection; waste management; spatial and urban planning; healthcare; land use and management; forestry and protected areas; risks and disasters; transport; energy.

A relevant document on local action for climate change regarding the entire territory of the Republic of Macedonia is the 2012–2015 Action Plan for the Development of New Policies and the Promotion of Local Initiatives in Dealing with Climate Change. The Action Plan is a result of cooperation between ZELS and NALAS based on the Programme of the UNDP Regional Centre in Bratislava and the Project 'Think Globally, Develop Locally'. This paper presents a framework which, in accordance with LGUs' powers, defines the solutions and activities that ZELS and municipalities in the Republic of Macedonia will have to undertake by 2015 in order to increase their capacity to cope with the risks and impacts of climate change and to enhance their capacity for energy management. The Action Plan addresses only those issues that are assigned to the Local Government Units as responsibilities, including energy management capacity at local level, the energy efficiency of buildings, the management of ecosystems and the planning of land use.

It is evident that the municipalities in both Planning Regions are not at the same level of planning. The conclusion is that urban centres have a greater planning capacity. In both Planning Regions, the most numerous planning documents in all municipalities are the Local Environmental Action Plans (LEAPs), city plans and documentation and programmes for increasing energy efficiency. Most LEAPs are of recent date and are prepared in accordance with the Methodology for Preparation of the LEAP, which outlines the procedure and method of plan preparation. The same applies to energy efficiency programmes. In the majority of municipalities, urban plans and documentation are older or expired. In those municipalities on whose territory installations are located which are subject to a B integrated environmental permit, the municipalities have issued the B integrated environmental permit under the statutory timeframe.

This indicates that municipalities in both Planning Regions have several key instruments available to take local action for climate change mitigation through the control of greenhouse gas emissions in the atmosphere and adaptation to the adverse effects of CC. These instruments include:

- Urban plans and other documentation for local urban planning;
- LEAPs;
- B integrated environmental permits;
- Energy efficiency programmes; and
- Strategic environmental assessment.

Based on the responses to Questionnaire 1, a *List of Stakeholders Relevant to the CC Management in the Southeast and Vardar Planning Regions* has been drafted. At national level, the relevant stakeholders in climate change policy-making and guiding local action for climate change are as follows:

1. The National Climate Change Committee
2. The Ministry of Environment and Physical Planning
   - State Councillor / UNFCCC Focal Point
   - Department of Sustainable Development and Investments
   - Department of Physical Planning
   - Environmental Administration
   - Macedonian Environment Information Centre
   - Public Relations Office
3. The Spatial Planning Agency
4. The Ministry of Agriculture, Forestry and Water Economy
   - Council for Agriculture and Rural Development
   - National Hydrometeorological Service
   - Phytosanitary Administration

- Water Directorate
- Department of Forestry and Hunting
- Department of Agriculture
- Department of Rural Development
- Department for Registration and Management of Agricultural Land
- PE "Macedonian Forests" (regional subsidiaries in the Vardar and Southeast Planning Regions)
- Water Supply and Aquatic Communities in the Vardar and Southeast Planning Regions
- Forest Holding 'Babuna'

5. The Ministry of Economy
   - Department of Energy
   - Department of Industry
   - Department of Transport
   - Energy Regulatory Commission
   - Energy Agency
   - Operators: ELEM / MEPSO
6. The Ministry of Transport and Communications
   - Fund for National and Regional Roads
   - PE "Macedonia Road"
7. The Ministry of Health
   - Institute for Public Health
   - National Public Health Institute
   - Municipal Institute of Public Health
8. The Ministry of Local Self-Government
   - Regional Development Bureau
9. The Ministry of Finance
10. The Ministry of Foreign Affairs
11. The Directorate for Protection and Rescue (and regional offices in the Vardar and Southeast Planning Regions)
12. The Centre for Crisis Management (and regional centres in the Vardar and Southeast Planning Regions), Spatial Crises Headquarters - Sveti Nikole
13. The State Statistical Office

At regional and local levels (in both selected Planning Regions), the stakeholders in policy-making on climate change and in guiding local action for climate change are as follows:

14. The Vardar Planning Region Council
15. The Vardar Region Development Centre
16. The 9 Municipalities in the Vardar Planning Region:
    - Sveti Nikole Municipality
    - Lozovo Municipality
    - Veles Municipality
    - Chashka Municipality
    - Gradsko Municipality
    - Rosoman Municipality
    - Kavadarci Municipality
    - Negotino Municipality
    - Demir Kapija Municipality
17. The Southeast Planning Region Council
18. The Southeast Planning Region Development Centre
19. The 10 Municipalities in the Southeast Planning Region:
    - Radovish Municipality
    - Konche Municipality
    - Strumica Municipality
    - Vasilevo Municipality
    - Bosilovo Municipality
    - Novo Selo Municipality
    - Valandovo Municipality
    - Bogdanci Municipality
    - Dojran Municipality
    - Gevgelija Municipality
20. Regional Branches of Chambers of Commerce
21. Public utility companies
    - PUC "Derven"- Veles
    - PE "Komunalec" - Kavadarci
    - PUCH Komunalec Strumica
    - PEW - Veles
    - Hydrosystem Lisiche - Veles
    - PUCH Topolka - Chashka
    - Public Utility Company - Negotino
    - PUCH "Ogražden" Bosilovo

- PE Plavaja - Radovish

22. Local business associations and representatives of the private sector in the Vardar and Southeast Planning Regions:
    - Industry (A and B installations)
    - Agriculture
    - Licensed companies for physical and urban planning
    - Economic operators dealing in passenger transport

The relevant educational institutions at national and local (regional) levels are as follows:

23. ICEIM-Macedonian Academy of Sciences and Arts
24. The Institute of Agriculture

The relevant civil society organisations are as follows:

25. ZELS
26. NALAS
27. The National Architects' Association of Macedonia
28. Coordinating Body of NGOs for climate change
29. CELOR (Radovish)
30. "Villa Zora" - Veles
31. PUCH "Ogražden" - Bosilovo
32. Ecological Society "Izgrev (Sunrise)" Sveti Nikole

2. Results of Questionnaire No. 2

2.1. Assessment of the General Legal, Strategic and Institutional Framework for Climate Change (CC) at Local and Regional Levels - Formulation of Local Policy on CC, Setting Priorities and Implementation

The first group of questions of Questionnaire 2 were designed to assess the legal, strategic and institutional framework that enables local action to tackle climate change. As stated in the Report drafted in the first phase of the Project, Macedonia is among the group of countries that have no law on CC, i.e. CC provisions are not codified in a single legal document. Responsibility for dealing with CC at local or regional levels is not foreseen in the Law on Environment, nor is it provided by the Law on Local Self-Government. The authority which prepares the National Plan for CC is only entitled to give a mandate to municipalities for the implementation of measures and actions adopted at central level, but not for local policy-making on CC. In conclusion, the positive legislation of the Republic of Macedonia imposes no obligation on municipalities (or forms of inter-municipal cooperation) to adopt a local / regional planning document that refers solely to CC. This lack of mandate has been confirmed by the answers to the Questionnaire. No local legal and strategic framework that applies directly to climate change has been registered in any of the municipalities of the two Planning Regions.[1] Consequently, the key priorities of sectoral policy on CC at local level have not been defined. Nevertheless, municipalities did cite the presence of key elements for dealing with climate change in sectoral policies, as follows: the management of environment media / areas, spatial and urban planning, local transport and roads, energy and en-

[1] Negative answers were given to question 2.1. by all the municipalities surveyed.

ergy efficiency, land management, forestry and crisis management. This suggests that the sectoral legal framework directly assigns specific tasks (including tasks associated with CC) to local governments, such as urban planning, local transport, waste management, utilities, and the protection and rescue of people and goods).[2] Only one municipality of the VPR stated that the elements of CC management are not regulated even in partial sectoral policies.[3]

Norms associated with CC are included in several sectoral laws that focus on various aspects related to mitigation or adaptation. These laws assign specific tasks or responsibilities to Local Government Units that are interconnected, but do not explicitly integrate the context of CC. For example, the legal gap in the Law on Urban Planning and the non-integration of the issue of mitigation and adaptation to CC as an aspect of spatial and urban planning result in a lack of addressing the issue in practice,[4] i.e. addressing the issue on a voluntary basis, depending on the capacity of the municipal administration to introduce the impact-related climatology data into the urban planning documentation.[5] The *de facto* situation shows that explicit references to climate change are lacking. In 100% of cases, the municipalities of both Planning Regions responded negatively to the questions about whether the topic of climate change is directly integrated in the spatial and urban planning documents of the Municipality. The same applies to other planning and programming documents in other areas (Local Environmental Action Plans, energy use and energy efficiency, local transport, waste management, water management, and the protection and rescue of people and goods). Therefore, it may be concluded that certain issues are addressed, but not in a way that ensures a uniform and immediate response to CC. However, certain responses lead to the conclusion that urban plans and related planning documents contain an indication or implied reference to CC as measures of mitigation and adaptation to CC.

Regarding the question as to whether municipalities had established a strategic framework and priorities that included all stakeholders in the Municipality, and how this inclusion had been achieved, only four municipalities[6] stated that there was no practice of public participation in decision-making. The others specified mechanisms of public debates, forums, participation in Council meetings, participation in the bodies of municipal authorities, etc. This practice is crucial for assessing the vulnerability of the municipalities and the Regions as a whole if the planning document refers to regional level. To the question of whether there is a separate body or institutional cooperation in the determination of local sectoral strategies, all except three municipalities[7] answered that no such body or cooperation exists, though they also recognized the need for its introduction.

2 Some declared that such strategic priorities are set out in the LEAP, the LED Strategy, the Green Agenda, and the Municipality's Crisis Management Plan.

3 Kavadarci Municipality.

4 For example, in the municipalities of Bosilovo and Radovish in the Southeast Planning Region, and in the municipalities of Negotino, Veles, Lozovo and Rosoman in the Vardar Planning Region.

5 For example, in the municipalities of Bogdanci, Konche and Strumica of the SPR and in the Municipality of Gradsko of the VPR, the issue is addressed by sectoral policies on the energy efficiency of buildings, spatial and urban planning, transport conditions, waste management, water management, protection and rescue; by energy passports for buildings; In Sveti Nikole Municipality, by the management of environment media / areas, spatial and urban planning, transport and roads, land management, forestry and crisis management and the key priorities identified in the Local Environmental Action Plan of Sveti Nikole; in the Municipality of Novo Selo, through measures for reducing the impact on human health, measures for reducing the impact on ambient air, measures for reducing increased noise, measures for the reduction of impacts on soil, waste management and the impacts on the quality of surface and ground waters.

6 Bosilovo, Vasilevo, Kavadarci and Chashka.

7 Novo Selo, Rosoman, Sveti Nikole, and Veles.

Characteristic of municipalities in both Planning Regions is that there is no single approach to determine local priorities in sectoral policies under local authority. (This does not apply to the prioritizing process in the LEAPs, since the methodology for identifying priorities in LEAPs is uniform and regulated with a bylaw.) Some of the municipalities did not answer the question as to how they determined their priorities, and some answered that they did not determine any priorities.[8] Some municipalities[9] stated that their strategic priorities were determined by the Municipal Council or referred to the priorities set forth in the Law on Local Self-Government. Some said that their priorities arise from both horizontal and vertical cooperation with state institutions and donors.[10] The rest stated that they identified their priorities through public forums, participation in Council meetings, participation in the bodies of municipal authorities, intermunicipal cooperation, etc., implying that public participation in the decision-making process is the main mechanism for determining the priorities of Local Government. As a result of this practice, most measures are chosen on an *ad hoc* basis according to their adequacy for achieving results visible in the short term, rather than applying clear criteria for setting priority measures to achieve effective results.

Systemically, the process of priority identification in sectoral policies, and consequently the setting of priorities for local action on climate change, is led at national level as a centralized process. This framework implies the creation of a national policy that will be implemented or taken into consideration by the authorities of Local Government Units in their decision-making. In this model, the central government makes different sectoral policies and identifies national priorities that are imposed on LGUs, but also leaves them some room to develop their local or regional policies and priorities appropriate to their specific local or regional context. Analysis of the responses to the Questionnaires suggests several basic problems: there are no local targets set for reducing emissions at local or regional level; there is no inventory of emissions and sinks of greenhouse gases; the plans do not take sufficient account of CC and it cannot be argued with certainty that the measures are set out in this direction, nor that a method for implementing such measures has already been adopted in this direction. Finally, the financial capacity of municipalities and their deficit of capacity to implement local measures on climate change emerge as primary obstacles. Most municipalities[11] declared they faced specific barriers that may impede their efforts to mitigate and adapt to climate impacts. These barriers can be summarized as follows:

- Non-alignment of the sectoral priorities of local administration. There is a lack of any management structure with the capacity to coordinate, monitor and control the implementation of measures to be implemented cross-sectorally both in terms of mitigation issues and adaptation issues. The different sectors of local administration have different interests and priorities.
- Insufficient capacity and expertise. Lack of capacity and technical expertise for managing CC is the main obstacle to the creation, integration and implementation of climate change policy in the VPR.12 The municipalities responded negatively to the question of whether local governments have departments or staff dedicated to policy-making or action on CC, saying that the issue is taken care of by other municipal administration organizational units. CC is most often an issue that is addressed within the Local Economic Development Department and the Department of Urban Planning and

[8] Kavadarci, Gradsko, Negotino, Chashka, Bosilovo and Vasilevo.

[9] Strumica and Konche.

[10] Radovish Municipality.

[11] With the exception of Bogdanci Municipality. Kavadarci stated that there are no grounds impeding CC efforts.

[12] With the exception of Kavadarci Municipality, which declared that it has departments and staff dedicated directly to CC.

Environment Protection. (See Table 1 for the Vardar Planning Region and Table 2 for the Southeast Planning Region);

- Lack of support from central government. This often hinders the effectiveness of municipalities in implementing measures for climate change. Local action is highly conditioned by the (non) existence of national programmes, legislative, regulatory and policy frameworks and the level of support from the central government to implement local initiatives. The existence of national policies and measures in terms of planning (e.g. improving the energy efficiency standards of performance of buildings) is important in order to provide guidance and facilitate local action among local actors. Lack of proper regulation in key areas is considered a major obstacle.

Other serious obstacles identified include:

- Lack of adequate funding is a key obstacle to the implementation of policies for CC. (See Table 3 and 4); and
- Lack of initiatives from NGOs and civil society.

The answers gathered from the two questionnaires show that municipalities do not have sufficient capacity to implement CC policy. The capacity of municipalities to implement CC policies and action plans is closely related to the regulatory model management. In accordance with the regulations and the responses to the Questionnaires, all municipalities indicated that they have considerable autonomy to make decisions about the use of renewable energy sources and energy efficiency programmes, transportation planning, and the adoption of strategies for local and regional development. According to the responses from the Questionnaires, the municipalities of both Planning Regions can implement CC-related sectoral policies by:

- Performing their municipal responsibilities (EE in public buildings and building units);
- Forming public-private partnerships for infrastructure and services; and
- Providing direct services (water supply and drainage and water treatment).

Through their influence on infrastructure development and the provision of utilities, municipalities can influence the usage and disposal of waste, which is directly related to CC measures. All municipalities said they were unable to assume the role of regulators, i.e. LGUs do not have the authority to adopt regulations for the reduction of CO_2 emissions regarding issues under their direct jurisdiction, i.e. space and land use, transport and waste management. However, the key issue for the implementation of CC policy, whether or not municipalities have the autonomy to create a local strategy, is the issue of the institutionalization of CC policy within the local administration and its integration with other sectoral plans. The answers to the Questionnaires show that the institutional mechanisms of LGUs to implement local action for climate change consist of the concentration of powers in either the Department of Environment Protection or the Department for Urban Development and Construction or another department / unit of local administration. Regarding the municipalities that concentrate their authority in the Department of Environment Protection, the problem of implementation is more intense because it concerns a new department that lacks human capacity, appropriate political influence and an adequate budget for the implementation of priorities and measures.

Table 1. CC capacity and expertise in the local administration of the VPR

Veles	Gradsko	Negotino	Sveti Nikole
No staff for CC	One person	No staff for CC	No staff for CC
LED Department and Environmental Protection Department		Department of Urban Planning and Environment Protection and Department of Utilities	Department of Urban Planning and Environment Protection

Lozovo	Rosoman	Demir Kapija	Chashka	Kavadarci
No staff for CC		Insufficient number of staff	No staff for CC	YES
	LED Department	Joint VPR Department of Energy Efficiency in Negotino		/

Table 2. CC capacity and expertise in the local administration of the SPR

Bosilovo	Novo Selo	Vasilevo
No staff for CC	No staff for CC	No staff for CC
/	No, through the LED Department, Department of Utilities and Department of Urban and Physical Planning and Environment Protection	Through other organizational units

Konche	Strumica	Bogdanci	Radovish
No staff for CC	There is CC staff	A person in charge of matters relating to the environment, a utility inspector and a person responsible for protection and rescue	There is CC staff
Department of Urban Planning and Environment Protection	LED Department - Environment Protection Unit	LED Department, Urban Planning Unit	Through the Urban Planning Department, there is a person in charge of environment and an LED Unit

Table 3. Barriers to the implementation of CC policy in the SPR

Questions	Bosilovo	Konche	Vasilevo	Novo Selo
What are the most frequent problems for the Municipality in the implementation of each sectoral policy?	Lack of adequate funding, lack of capacity and expertise	Insufficient capacity and expertise and lack of finance	/	Insufficient capacity and expertise, lack of adequate funding, lack of jurisdiction over matters which affect the level of greenhouse gases in the atmosphere
Does central government give priority (technical support, human and financial resources) to action for CC at the local level?	Yes	Partially	Central government provides full support for action on climate change at local level	Insufficiently
Does the central government provide incentives, grants etc. to local governments and / or public enterprises for action on CC or other infrastructure ventures that are aimed at preventing the effects of CC?	No	Insufficiently	No data	Yes
Does the central government provide special resources to implement plans and strategies related to CC (environment management, energy, waste management, ambient air quality, and other strategic and planning documents)?	No	Insufficiently	/	Yes
Please assess the existing fiscal instruments that can be used to fund local action for CC including forms of cooperation (public-private partnership, outsourcing).	/	Insufficient	/	The existing fiscal instruments are underused

Questions	Bosilovo	Konche	Vasilevo	Novo Selo
Are municipal revenues sufficient to ensure infrastructure investments so that basic municipal functions that influence CC can be performed?	No	No	/	No
Is the municipal administration in your community, especially the local policymakers, aware of the responsibilities of the Municipality in dealing with CC, and to what extent?	Partially	Insufficiently	/	Insufficiently
Are there any initiatives of various stakeholders (local authorities, service providers, private business sector, individual citizens / groups) to reduce emissions of greenhouse gases in the Municipality?	No	No	/	Yes

Questions	Strumica	Bogdanci	Radovish
What are the most frequent problems for the Municipality in the implementation of each sectoral policy?	Lack of authority regarding these issues and lack of support from central government	There is a absence of inter-departmental cooperation within the local administration and lack of adequate funding	Absence of interdepartmental cooperation within local administrations, lack of structure that could coordinate, monitor and control the activities of so many different sectors involved in dealing with climate change, insufficient capacity and expertise, lack of adequate funding, lack of jurisdiction over matters which affect the level of greenhouse gases in the atmosphere
Does central government give priority (technical support, human and financial resources) to action for CC at the local level?	No	Yes, by strengthening local capacities to fulfil legal obligations, strengthening programming, managerial and financial capacities of LGUs, establishing and supporting local initiatives and actions in dealing with CC, and enhancing municipal cooperation. It initiates cooperation and coordination with municipalities to build mechanisms for management, monitoring and control	Yes
Does the central government provide incentives, grants etc. to local governments and / or public enterprises for action on CC or other infrastructure ventures that are aimed at preventing the effects of CC?	So far we have not used such mechanisms	Provides grants through borrowing from the World Bank and other institutions and Funds for this purpose	Yes

Questions	Strumica	Bogdanci	Radovish
Does the central government provide special resources to implement plans and strategies related to CC (environment management, energy, waste management, ambient air quality, and other strategic and planning documents)?	No	It does, through the programmes for financing activities in this area by the relevant ministries	Partially
Please assess the existing fiscal instruments that can be used to fund local action for CC including forms of cooperation (public-private partnership, outsourcing).	The Municipality has the option of signing a Public-Private Partnership only for activities under the Municipality's public jurisdiction	Municipal budget (obstacle in giving priority to projects in this area); Budget of RM - support from central level; Grants; Domestic and foreign donors (donor funds); Public Private Partnership (PPP); Loans	Budgets of LGUs, PPP, donations, grants from the central government budget, social responsibility of local companies
Are municipal revenues sufficient to ensure infrastructure investments so that basic municipal functions that influence CC can be performed?	Partially	The low Municipality Budget complicates the planning and implementation of measures in this area. It is difficult to find external funds. It is difficult to meet the requirements for taking out commercial loans. High interest rates (10% -15%) are hampering investment.	No
Is the municipal administration in your community, especially the local policymakers, aware of the responsibilities of the Municipality in dealing with CC, and to what extent?	Additional education is necessary	They are pretty well acquainted with the municipal authorities in dealing with CC	Insufficiently
Are there any initiatives of various stakeholders (local authorities, service providers, private business sector, individual citizens / groups) to reduce emissions of greenhouse gases in the Municipality?	Insufficiently	For the time being, the initiatives come only from the local government due to the low awareness of environment protection among the private sector and individual citizens and groups	Yes, the private business sector, individual citizens and civic associations.

Table 4. Barriers to the implementation of CC policy in the VPR

Questions	Veles	Gradsko	Negotino	Sveti Nikole	Lozovo
What are the most frequent problems for the Municipality in the implementation of each sectoral policy?	Insufficient capacity and expertise; lack of adequate funding; low awareness of the importance and significance of CC at local level; the CC office at the line Ministry has almost no activities with the local government in terms of coordination, communication, know-how, etc.	No funds	Organizational, staffing, financial barriers	Lack of adequate funding, lack of expertise, lack of available funds and poor information about them	Lack of adequate funding, no competence over matters which affect the level of greenhouse gases in the atmosphere
Does the central government provide special resources to implement plans and strategies related to CC (environment management, energy, waste management, ambient air quality, and other strategic and planning documents)?	No	Yes	Yes, as necessary	It starts to give priority, but so far, we have not had any technical support, human and financial resources.	Yes, in part, in terms of technical support and human resources
Does the central government provide incentives, grants etc. to local governments and / or public enterprises for action on CC or other infrastructure ventures that are aimed at preventing the effects of CC?	No	Yes	Yes, as necessary	Yes, but insufficiently	No, so far the central government has not provided any grants and the other to local governments and / or public enterprises for action on CC

Questions	Veles	Gradsko	Negotino	Sveti Nikole	Lozovo
Does the central government provide special resources to implement plans and strategies related to CC (environment management, energy, waste management, ambient air quality, and other strategic and planning documents)?	We have no information	Yes	Yes, through the MEPP, Energy Agency, MTC	No, not at a satisfactory level.	In part, through the adopted Strategic Local Level Urban Development Plans by the Ministry of Environment and Physical Planning
Please assess the existing fiscal instruments that can be used to fund local action for CC including forms of cooperation (public-private partnership, outsourcing).	Legal possibilities exist, but are still underutilized.	Poor	Currently, they do not exist	Taxes, PPP, concessions, donations, loans, etc. The Municipality of Sveti Nikole is open to any kind of financial cooperation regarding CC.	In part, through the adopted Strategic Local Level Urban Development Plans by the Ministry of Environment and Physical Planning, Annual Energy Efficiency Programme
Are municipal revenues sufficient to ensure infrastructure investments so that basic municipal functions that influence CC can be performed?	No	No	They are not sufficient	No	The existing fiscal instruments do not meet the funding needs of local action for CC, including forms of cooperation through Public-Private Partnership, outsourcing, etc. Municipal revenues are not sufficient to ensure infrastructure investments for performing basic municipal functions that influence CC.

Questions	Veles	Gradsko	Negotino	Sveti Nikole	Lozovo
Is the municipal administration in your community, especially the local policymakers, aware of the responsibilities of the Municipality in dealing with CC, and to what extent?	Municipal budgets for addressing environmental issues are extremely low. The number of people dealing with this issue is limited in municipalities. In general, there are one to two officers who cover environmental issues. There are no CC specialists.	No	They are familiarized under legal regulations	They are partially aware.	Yes, they are partially aware of the responsibilities of the Municipality in dealing with CC.
Are there any initiatives of various stakeholders (local authorities, service providers, private business sector, individual citizens / groups) to reduce emissions of greenhouse gases in the Municipality?	No, all participants need to be aware of the importance and possibility of implementing initiatives and of the benefits from them.	No	Yes, through demands for strict observance of laws	Primarily, they are initiatives of local authorities and NGOs, and also the private sector, primarily in energy efficiency.	There are no initiatives of various stakeholders to reduce emissions of greenhouse gases

Questions	Rosoman	Demir Kapija	Chashka	Kavadarci
What are the most frequent problems for the Municipality in the implementation of each sectoral policy?	Insufficient capacity and expertise; lack of adequate funding; low awareness of the importance and significance of CC at local level.	Lack of structures to coordinate, monitor and control the activities of so many different sectors involved in dealing with CC, insufficient capacity and expertise, lack of adequate funding	Insufficient capacity and expertise, lack of adequate funding	Lack of municipal bodies and cross-sectoral cooperation, lack of financing sources
Does the central government provide special resources to implement plans and strategies related to CC (environment management, energy, waste management, ambient air quality, and other strategic and planning documents)?	/	No	We deem it is not sufficient	No
Does the central government provide incentives, grants etc. to local governments and / or public enterprises for action on CC or other infrastructure ventures that are aimed at preventing the effects of CC?	No	No, or very little.	We are not aware.	/
Does the central government provide special resources to implement plans and strategies related to CC (environment management, energy, waste management, ambient air quality, and other strategic and planning documents)?	We have no information.	No	They are not provided.	/
Please assess the existing fiscal instruments that can be used to fund local action for CC including forms of cooperation (public-private partnership, outsourcing).	Legal possibilities exist, but are still underutilized.	By a PPP Contract to change the street lights using LED technology and the application of energy efficiency in buildings in municipality possession	No answer	/

Questions	Rosoman	Demir Kapija	Chashka	Kavadarci
Are municipal revenues sufficient to ensure infrastructure investments so that basic municipal functions that influence CC can be performed?	No	No, additional funds have to be provided from donors and grants	No	No
Is the municipal administration in your community, especially the local policymakers, aware of the responsibilities of the Municipality in dealing with CC, and to what extent?	Municipal budgets for addressing environmental issues are extremely low. The number of people dealing with this issue is limited in municipalities.		Do not know	No
Are there any initiatives of various stakeholders (local authorities, service providers, private business sector, individual citizens / groups) to reduce emissions of greenhouse gases in the Municipality?	No, all participants need to be aware of the importance and possibility of implementing initiatives and of the benefits from them.	Very few	No	No

2.2. Assessment of Capacity for Local Action in the Area of Environmental Management

Most of the municipalities in both Planning Regions have LEAPs.[13] Through this planning document they can determine their municipal goals for local action in the area of environment, describe and assess local problems and risks, set priorities for solving the most essential issues of management of various environmental media and areas and environmental goals, and establish indicators and criteria for the evaluation of local environmental management policies. The LEAP includes a description of primary stakeholders and actors responsible for the implementation of local priority measures, as well as the timeframe and budget of such measures. During the preparation of LEAPs, municipalities must comply with the NEAP and other regulations and legal priorities. In the Southeast Planning Region, the municipalities[14] with LEAPs estimated that the Local Environmental Action Plan for the Municipality covers aspects of mitigation and adaptation to CC (air quality management, drinking water and wastewater management, waste management, soil protection, forest protection). In the Vardar Planning Region, most municipalities stated that their LEAPs are lacking or outdated.[15] From the contents of these LEAPs, it is evident that scientifically-based climate scenarios and risks of CC are not taken into account in the development of LEAPs and in the setting of priorities and measures. In several cases, municipalities identified the relevant regional and local papers on which Reports for Strategic Environment Assessment had been prepared, but none of them evaluated the aspects of mitigation and adaptation to CC or whether climate scenarios and risks of CC had been taken into account in their elaboration of the Strategic Environment Assessment Report.

With the exception of the municipalities of Veles and Gevgelija,[16] the municipalities in both Planning Regions declared that they have no data on environment monitoring because no local system for monitoring the environment has been set up for any environmental medium or area. The only data that municipalities have available and make use of is data on:

- Environmental emissions from installations that are subjects to B Integrated Environmental Permits, which can be used in the preparation of a local, regional or national Inventory of greenhouse gas emissions from B industrial installations.
- Data on the type and volume of waste generated in the Municipality, which is collected by Public Utility Companies.

This data is submitted to the Municipality, and the Municipality then submits it to the Ministry of Environment. This data on environment media and areas, together with the data possessed by municipalities in the field of energy (records of energy consumption in public buildings and public lighting in the Municipality) and transport (records of the number of vehicles in the

[13] LEAPs – Municipality of Veles; Municipality of Negotino; Municipality of Chaska; Municipality of Bosilovo; Novo Selo Municipality; Strumica Municipality; Sveti Nikole Municipality; Kavadarci Municipality; Gevgelija Municipality; Radovish Municipality.

[14] Bosilovo Municipality; Novo Selo Municipality; Strumica Municipality; Gevgelija Municipality; Radovish Municipality.

[15] The Municipality of Veles specifies Local Agenda 21 as a relevant document for action in the field of environment.

[16] In the Municipality of Veles, there is a developed local and national monitoring network. The local network is run by the Centre for Public Health - Veles. The national monitoring network is run by the Ministry of Environment and Physical Planning. All monthly monitoring data arrives at the Municipality, whereupon the Municipality publishes it on its website and enables public accessibility and also performs an analysis thereof and proposes measures to tackle pollution. In Kavadarci, there is a National Monitoring Network managed by MEPP. Gevgelija Municipality, in its response to Questionnaire 1, stated that it has an established local Monitoring and Information System regarding the environmental situation.

Municipality) can significantly contribute to the establishment of a comprehensive Inventory of greenhouse gas emissions at national level and to the greater accuracy of national projections.

Municipalities cited the problems they faced as a result of CC (lack of drinking water, floods, droughts) and assessed that the plans for water supply (drinking water, irrigation) and drainage, and the plans for collection, drainage and treatment of wastewater, as well as plans for handling the adverse effects of waters, address certain aspects of CC. They also stated that the level of CC awareness among utility service providers is low.

2.3. Assessment of Capacity for Local Action in the Area of Energy Efficiency

Municipalities that have a three-year Plan for EE are almost unanimous in their assessment that the CC aspects in the Municipal Three-year Plan for Energy Efficiency are significant. As the Plan relates to the aspects of CC mitigation, i.e. the reduction of greenhouse gas emissions in the atmosphere, it would be logical for the model to be replicated in the regulatory model and for this model to be applied to other sectors where measures for the reduction of greenhouse gas emissions should be taken at local level.

2.4. Assessment of Capacity for Local Action in the Area of Transport

Most municipalities in both Planning Regions have no documents relating to transport and its impact on CC, but the issue is addressed in the framework of other strategic documents[17] of municipalities in this area.

[17] Urban plans and LEAPs. Kavadarci Municipality assessed that CC aspects in its transport planning documents are at a high level.

2.5. Assessment of Capacity for Local Action in the Area of Crisis Management and Protection

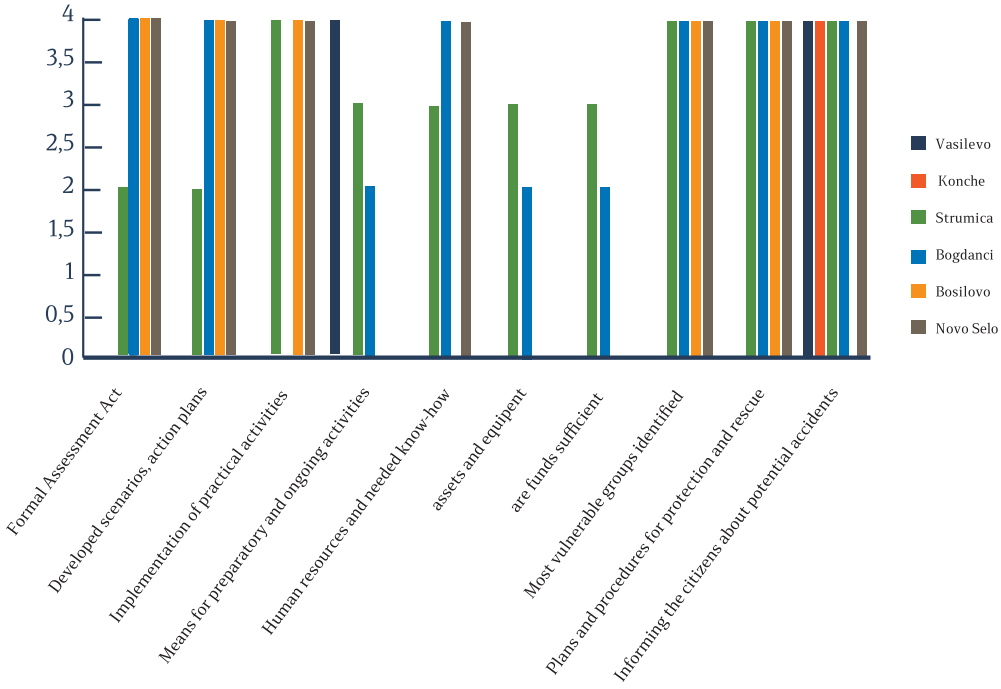
More than 60% of the municipalities in the Southeast Planning Region that replied to Questionnaire 2 have Acts for Assessing Hazards and Risks.[18] These documents contain developed scenarios, action plans and standard operating procedures for dealing with risks and hazards, including annual plans for priority actions, strategies and annual reports. Only two municipalities (Bosilovo and Novo Selo) conducted practical activities for the prevention and management of disasters and accidents. In these municipalities, response teams are formed by a Decision of the Mayor, i.e. under the control of the State Inspectorate for Protection and Rescue at the Directorate for Protection and Rescue. Municipalities in the Southeast Planning Region identified the most frequent problems they faced in the prevention and management of disasters and accidents as being their lack of material and technical resources and financial resources, and also the lack of coordination with the central government in terms of their competencies over prevention, alarm systems, cleaning of drains, etc.

Municipal budgets are a source of funds for preparatory and ongoing activities in response to disasters and accidents, but all municipalities stated that such funds are not sufficient for this purpose. Another issue faced by municipalities in the Southeast Planning Region in their obligation to meet this responsibility is their lack of human resources and necessary knowledge and skills to prevent and deal with disasters and accidents. Also, most municipalities have buildings, but not enough vehicles, material and technical resources and equipment needed to deal with disasters and accidents. Most municipalities have identified certain groups of citizens in their communities as most vulnerable in cases of disasters or accidents, and have plans

[18] Novo Selo, Bosilovo, Strumica (in a preparation stage), Radovish and Bogdanci.

and procedures for response in the event of a disaster or accident. Municipalities in this Region have developed a system for informing citizens about measures for the prevention of disasters, accidents and catastrophes (using the media).

Municipalities in the Southeastern Planning Region stated that there is good cooperation between the entities in the crisis management system (the municipality with its entities, the Directorate for Protection and Rescue, the State Inspectorate for Protection and Rescue at the Directorate for Protection and Rescue, the Centre for Crisis Management and PE "Macedonian Forests"). They also emphasise the need for greater coordination with the central government in order to intensify such cooperation. Control in terms of the prevention and management of disasters and accidents in municipalities is organized through cooperation among these authorities, local response teams, the local population and PE "Macedonian Forests".



The situation in the Vardar Planning Region is similar. These municipalities have developed scenarios, action plans or standard operating procedures for dealing with risks and hazards, including annual plans for priority actions, strategies and annual reports. In some cases, practical activities have also been carried out for the prevention and management of disasters and accidents.

Response teams are formed by a Decision of the Municipal Council. Here, also, the most common problems are the lack of material and technical resources and funding; lack of human resources and necessary knowledge and skills to prevent and deal with disasters and accidents. Municipal budgets are a source of funds for preparatory and ongoing activities in response to

disasters and accidents, but all municipalities stated that such funds are not sufficient for this purpose. Most municipalities have identified certain groups of citizens in their communities as being most vulnerable in cases of disasters or accidents, and have plans and procedures for response in the event of a disaster or accident. Municipalities in the Vardar Planning Region have developed a system for informing citizens about measures for the prevention of disasters, accidents and catastrophes (through their municipal bodies, municipal newsletters and regular reports). Municipalities describe the cooperation between the entities in the crisis management system as good, (the municipality with its entities, the Directorate for Protection and Rescue, the State Inspectorate for Protection and Rescue at the Directorate for Protection and Rescue, the Centre for Crisis Management and PE "Macedonian Forests") and they point out the need for greater coordination with the central government in order to intensify this cooperation. Control in terms of the prevention and management of disasters and accidents in municipalities is organized through cooperation among competent state administration bodies, municipal authorities, PE "Macedonian Forests", the Ministry of Interior and the local population.

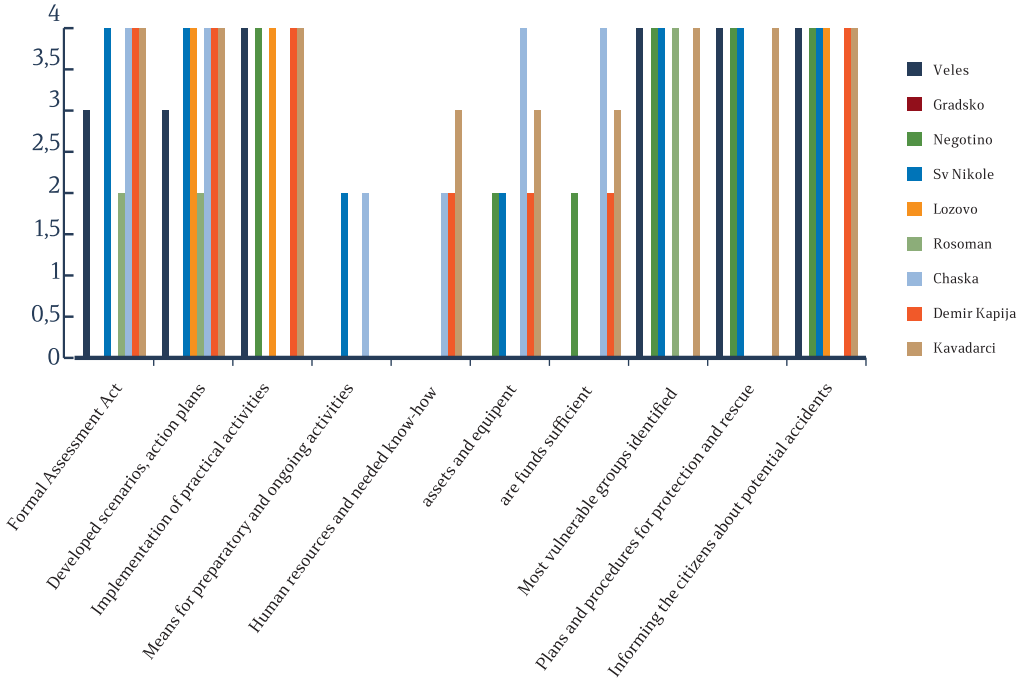
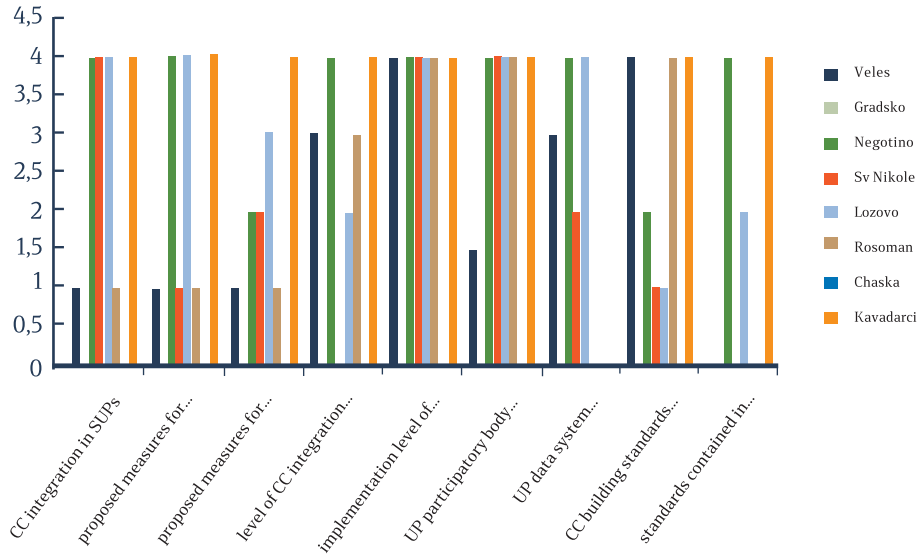


Diagram 1. Integration of CC in urban plans of Vardar Planning Region Municipalities - aggregated indicators per Municipality



2.6 Assessment of Capacity for Local Action in the Area of Physical and Urban Planning - Common Features of the Vardar and Southeast Planning Regions

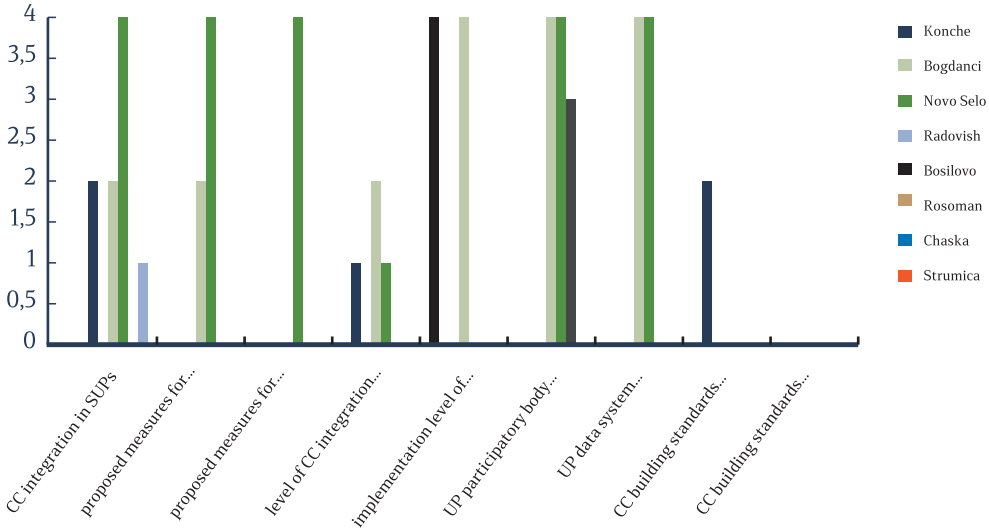
From the responses submitted by municipalities to Questionnaire 1,[19] it is evident that plans at local level are not fully harmonized and adopted for the entire planning coverage of municipalities. The legal gap in the Law on Physical and Urban Planning and the non-integration of the issue of CC mitigation and adaptation as an aspect of spatial and urban planning results in not addressing the issue in practice,[20] i.e. only addressing the issue on a voluntary basis, depending on the municipal administration's capacity to incorporate climatology impact data in its urban planning documentation.[21] The actual situation shows that there are no explicit references to CC. In 100% of cases, the municipalities of both Planning Regions responded negatively to questions as to whether the topic of climate change is directly integrated in the spatial and urban planning documents of the Municipality.

[19] For more details, see the Inventory of Planning Regions' documents.

[20] For example, in the Municipality of Bosilovo in the SPR, Negotino, Veles, Lozovo and Rosoman in the VPR; exceptions are Kavadarci and Novo Selo.

[21] For example, in the Municipalities of Bogdanci, Konche and Strumica in the SPR and the Municipality of Gradsko in the VPR, the issue is addressed through sectoral policies on the energy efficiency of buildings, spatial and urban planning, transport conditions, waste management, water management, protection and rescue; through energy passports for buildings; in Sveti Nikole Municipality, by managing media / areas of the environment, spatial and urban planning, transport and roads, land management, forestry, and crisis management, and by the key priorities set out in the Local Environmental Action Plan of Sveti Nikole.

Diagram 2. Integration of CC in the urban plans of the municipalities of the Southeast Planning Region - aggregated indicators per Municipality



The issue of CC is partly and indirectly addressed in some local urban plans through environmental sustainability and resilience and capacity to cope with disasters. In terms of the level of integration of urban plans with other municipal sectoral plans, the majority of responses were negative due to the non-alignment of plans with the existing infrastructure.

In view of the obstacles they face in the development of urban plans, municipalities say they have no financial capacity for the expensive and inflexible urban planning process provided under existing legal dynamics. As a result, not all plans are adopted regarding the entire planning coverage of municipalities, and some of them are outdated[22] and not aligned.[23]

Analysis of the responses suggests there is very limited understanding of the linkages between urban and spatial planning and CC among local administrations. In most cases, CC is understood as an environmental rather than a crosscutting issue, thus it is declared that urban plans approved by the Municipality contain CC mitigation and adaptation measures in terms of a Strategic Plan. From the answers, one cannot draw a clear conclusion about the frequency with which CC issues are involved in the process of urban planning in municipalities. One reason for this is the prevailing perception of the CC concept, which can be illustrated by the response “those are generally indirect measures”, indicating that the CC aspect is of secondary importance in the process and is incorporated into the broader context of issues. If this conclusion is true, then there is a danger that the CC aspect is not taken into account in the spatial and urban planning process. Only in

[22] Details in Appendix 1.

[23] When asked to assess the degree of integration of urban planning with other municipal sector plans (such as those for water and waste management or energy), Bosilovo, Konche and Strumica from SPR, and Gradsko, Sveti Nikole, Demir Kapija and Lozovo from VPR declared non-alignment; Bogdanci said they were well aligned and Rosoman and Veles stated that only the new planning documents were in compliance.

a limited number of cases[24] are climatology data and its scenarios used in spatial and urban planning in the direction of mitigation and adaptation to climate change through the SEA measure.[25]

Data for the municipalities in both Regions is shown in Diagram 3 regarding the Vardar Planning Region and Diagram 4 regarding the Southeast Planning Region, below.

Diagram 3. Integration of CC in the urban plans of municipalities in the Vardar Planning Region, shown by municipalities

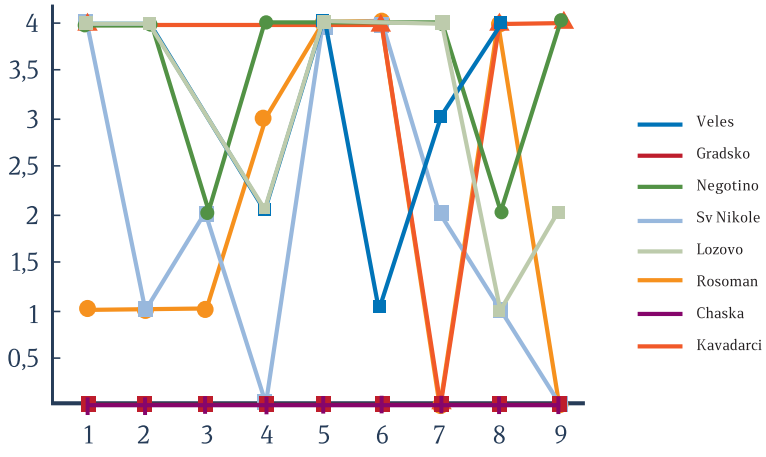
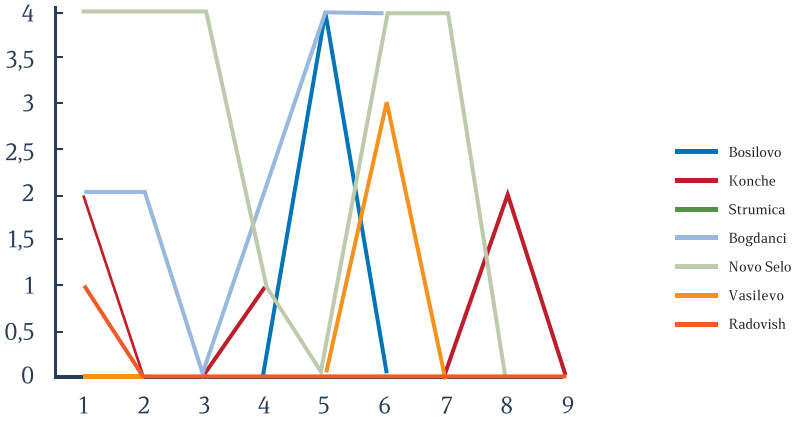


Diagram 4. Integration of CC in the urban plans of municipalities in the Southeast Planning Region, shown by Municipalities



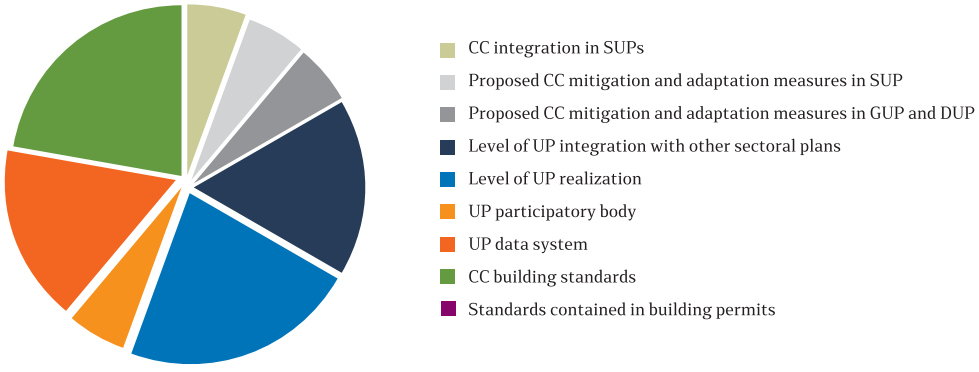
[24] Lozovo.

[25] For example, the Report on the Strategic Evaluation of the Study for Determination of VPR Potential to Use Renewable Energy Sources.

Public participation is regulated by law, and the answers show that it is practiced well. Only in a limited number of cases did municipalities not declare the existence of a participatory body in their physical and urban planning process.[26]

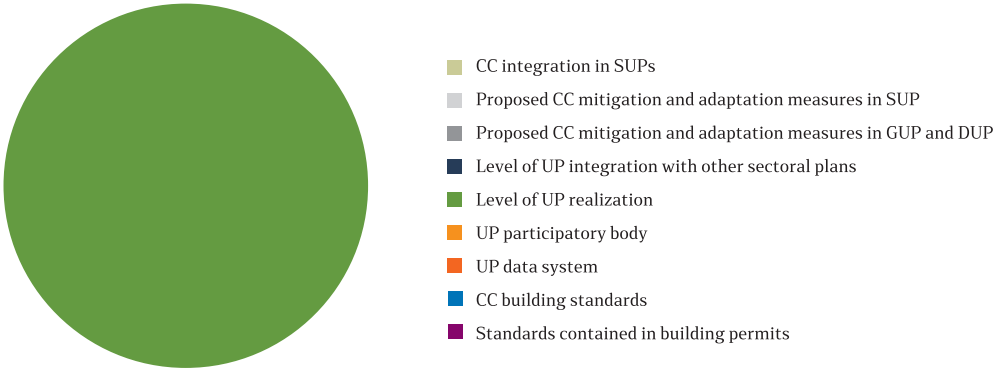
Of the indicators, the greatest impact on CC at LGU level in the Vardar Planning Region is effectuated by the implementation of the urban planning process and the issuance of building permits, at the expense of other indicators. (See Diagram 5.)

Diagram 5. Integration of CC in the urban plans of the municipalities of the Vardar Planning Region, shown by indicators



Unlike the Vardar Planning Region, the situation in the Southeast Planning Region is alarming. Only the degree of UP realization is used as a measure for dealing with CC. (See Diagram 6)

Diagram 6. Integration of CC in the urban plans of municipalities in the Southeast Planning Region, shown by indicators



[26] Veles and Gradsko in the VPR, and Bosilovo, Konche and Strumica in the SPR.

By combining the data obtained from Section 1 (general, horizontal issues) and Section 5 (Physical and Urban Planning Department) of Questionnaire 2, conclusions can be reached about the obstacles and problems faced by municipalities in applying CC knowledge in their physical and urban planning process.[27] Obstacles may be characterized as those of a technical nature (lack of data and access), institutional obstacles (lack of staff, lack of knowledge) and strategic obstacles (no jurisdiction, lack of state policy). In most cases, municipalities say they have no separate organizational unit responsible for the development and implementation of CC policies. Municipalities responded that they lack staff with the capacity to coordinate, monitor and control the activities of so many different sectors involved in dealing with CC. Most municipalities cite the following obstacles to the integration of the CC issue in their physical and urban planning process:

- Insufficient capacity and expertise amongst urban planners for the application of knowledge about CC;
- Insufficient knowledge of CC;
- Lack of adequate funding;
- Lack of jurisdiction over matters which affect the level of greenhouse gas emissions in the atmosphere;
- Lack of support from central government in the form of technical support, human and financial resources for local action on CC;
- Lack of incentives to support local action for CC;
- Lack of fiscal instruments to finance local action for CC;
- Insufficient budgetary funds in the Municipal Budget to perform basic municipal functions and infrastructure investments.

In several cases, the obstacle cited was the lack of initiatives by the private sector for action to reduce greenhouse gas emissions and adapt to CC. The general conclusion is that, although municipalities have direct responsibility and capacity for urban planning, still, this most suitable tool for the current level of municipal development is not sufficiently used due to the above obstacles. The method of spatial and urban development is also a key indicator of CC. At the same time, CC makes urban populations vulnerable to the effects of CC. The dominant spatial and urban planning practices in these Planning Regions do not offer sufficient solutions to this dual challenge.

2.7 Assessment of the Level of Good Governance

2.7.1. Level of Effectiveness

One of the indicators of the Methodology for Assessment of Local Action for CC is whether municipalities have the capacity and resources for proper planning and implementation of policies and forms of horizontal and vertical coordination. The municipalities of the Southeast Planning Region declared ineffectiveness in their planning and implementation of CC policies. This is due to their unclear responsibilities for CC, the insufficient capacity and education of their staff, the absence of interdepartmental cooperation within local administration, poor coordination with the central government authorities, and limited human and financial resources.

Coordination with public companies on matters related to this area is at a satisfactory level. The same applies to inter-municipal coordination. In the Vardar Planning Region, the capacity and resources for proper planning and implementation of policies are at a low level. Among the reasons cited are the lack of equipment and information on CC, insufficient vertical coordination at both local and regional levels, lack of human resources qualified for the operational matters which the Municipality has been assigned, and lack of planning documents.[28]

[27] They are given consecutively in the text and the explanation thereof does not present any ranking of the frequency and dynamics of the occurrence of obstacles.

[28] Chashka.

2.7.2. Level of Participation

Municipalities are indirectly consulted in making national sectoral policies, mainly through ZELS networks. According to the responses in the Questionnaires, there was no civil society activity observed in the sector of CC prevention. Some initiatives by NGOs exist, but these are mainly for project activities that partially solve certain problems related to environmental aspects. Municipalities have no established mechanisms by which to ensure the participation of civil society in the process of decision-making and policy-making relevant to CC. Most municipalities stated that no regular public opinion polls were held. However, one municipality stated that regular surveys are conducted before, during and after the preparation of planning and policy documents related to the environment, climate change and service delivery. This municipality consults public opinion through conducting surveys and questionnaires and holding open public hearings on these topics, using the results in the prioritization of problems, values and needs.[29]

2.7.3. Level of Equality and Non-discrimination

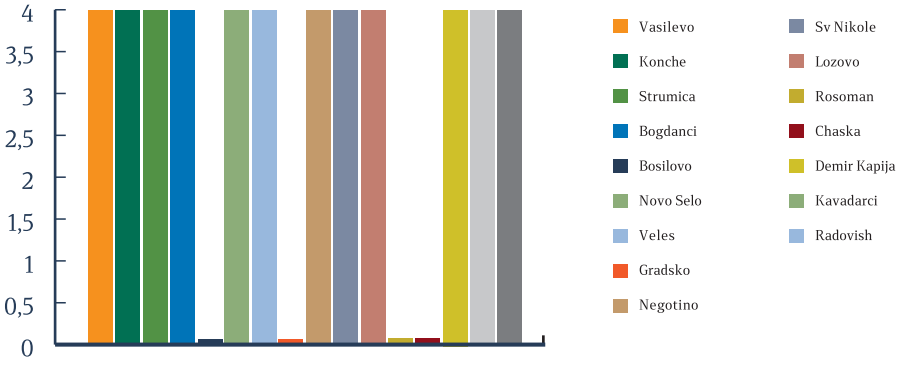
All stakeholders in municipalities have an equal right to participate in the decision-making process.

Municipalities identified the categories of the population most vulnerable to the impact of CC, including: marginalized groups or minorities, i.e. people living in neighbourhoods with substandard conditions, mothers, infants and toddlers, the young population, the population in rural areas with difficult access to health services, the elderly, and people with health problems. Municipalities declared that measures for the mitigation of risks to these categories are foreseen in the plans for protection and rescue and consist of measures for the mitigation of disaster risks and the giving of priority to accommodation in the event of a disaster.

2.7.4. Transparency and Accountability

All official data and information related to CC, greenhouse gas emissions and disaster management that is available to municipalities (and to the public) is published under the general framework for access to information of public character. In municipalities located in areas most directly affected by the negative effects of CC, information on possible scenarios and the harmful effects of CC is provided continuously (see Diagram 7 below). Other municipalities report through a body / headquarters for protection and rescue, i.e. publish or communicate reports to local communities that refer to the chemical and bacteriological safety of drinking water. Regarding the publication of data, municipalities have established cooperation with the media.

Diagram 7. Level of information communicated to citizens about measures for the prevention of disasters and accidents, aggregated for all municipalities from the SPR and the VPR



[29] Bogdanci.

V. Results, Conclusions and Recommendations of the Workshops

1. Vardar Planning Region Workshop

The Vardar Planning Region Workshop was held on October 24, 2013 (Thursday), at the Hotel "MONTENEGRO" in Veles, starting at 11:00 am. The purpose of the Workshop was to present the initial findings of the Survey 'Assessment of Local Management for the Prevention of the Adverse Effects of Climate Change'. The Workshop was attended by representatives of the Planning Region, municipalities, institutions with responsibilities related to environmental protection, utilities, urban planning and the protection of citizens and goods, NGOs from the Planning Region and the team of UNDP experts that conducted the research. Representatives of all VPR stakeholders familiarized themselves with the preliminary findings of the Survey and validated them through a review and discussion during the Workshop.

The purpose of the Workshop was to gather additional data on the preparation of public policies (at the level of Local Government Units and Planning Regions) for the prevention of negative climate change effects and to present the Draft Report on the Survey and confirm the findings contained therein. During the Workshop, local experts hired by UNDP presented their Draft Reports regarding the following:

- Survey 'Assessment of Local Management for Prevention of the Adverse Effects of Climate Change';
- Analysis to assess the vulnerability of agriculture (vineyards) in the Vardar Planning Region; and
- Economic Feasibility Analysis regarding the proposed modelled scenarios of climate change in viticulture.

The Workshop confirmed the findings arising from the Survey conducted by using the Questionnaire Method, and it was concluded that they could be used for the Final Report.

2. Southeast Planning Region Workshop

The Southeast Planning Region Workshop was held on November 7, 2013 (Thursday) at the Army Hall (Advisory Hall) in Strumica, starting at 12:00 am. The purpose of the Workshop was to present the initial findings of the Survey 'Assessment of Local Management for the Prevention of the Adverse Effects of Climate Change'. The Workshop was attended by representatives of the relevant stakeholders in the Planning Region, municipalities and their utility companies, regional offices of the MEPP in Strumica and Gevgelija, regional offices of the Ministry of Agriculture, Forestry and Water Economy in Strumica, Gevgelija, Valandovo and Radovish, farmers and their associations, and other stakeholders with responsibilities related to environment protection, utility services, urban planning and the protection of citizens and goods, the NGO sector from the Planning Region and the team of UNDP experts that conducted the research.

Representatives of all SPR stakeholders familiarized themselves with the preliminary findings of the Survey and validated them through a review and discussion during the Workshop.

The purpose of the Workshop was to gather additional data on the preparation of public policies (at the level of Local Government Units and Planning Regions) for the prevention of the negative effects of climate change and to present the Draft Report on the Survey and confirm the findings contained therein. During the Workshop, local experts hired by UNDP presented their Draft Reports regarding the following:

- Survey 'Assessment of Local Management for Prevention of the Adverse Effects of Climate Change';
- Analysis to assess the vulnerability of agriculture (vineyards) in the Southeast Planning Region; and
- Economic Feasibility Analysis regarding the proposed modelled scenarios of climate change in viticulture.

The Workshop confirmed the findings arising from the Survey conducted by using the Questionnaire Method.

The representative of the NGO "Mileukontakt - Macedonia" intervened by saying that the data on Bogdanci Municipality contained in the responses to the Questionnaires does not reflect the current situation regarding the way in which the municipality deals with climate change. It was pointed out that under the USAID Project for the Preparation of Municipal Strategies on Climate Change, activities were aimed at preparing the municipalities to better address the challenges caused by climate change, with a special focus on improving local democratic processes and increasing municipal capacity to adapt to climate change. The Project is implemented by "Mileukontakt - Macedonia". Project activities are carried out to develop municipal strategies for climate change in four municipalities in the territory of the Republic of Macedonia, including the Municipality of Bogdanci belonging to the Southeast Planning Region is also covered. It was pointed out that the Project Goal was to strengthen the capacity of civil society and raise the level of local climate change management. The Project has three components:

- The Green Agenda - which aims to involve stakeholders through a participatory process designed to develop strategies and action plans to address adaptation to climate change and reduce the negative effects of CC, based on a consensus;
- Pilot Projects / emergency actions - planning and implementation of Pilot Projects and emergency actions that will enhance the level of stakeholders' adaptation and mitigate the effects of climate change; and
- Capacity-building, which implies strengthening stakeholders' skills and knowledge necessary to increase resilience to climate change and enhance their ability to engage in the process.

The Project is in its final stage in terms of the preparation of Municipal Strategies on Climate Change for Bogdanci Municipality, and this must be taken into account when preparing the Final Report on Capacity Assessment within the UNDP Project.

VI. Strategic Concept – The Role of Physical and Urban Planning for Good CC Management

Spatial and urban planning aims to ensure the sustainable development of local communities and sustainable spatial development. It is municipalities that are most directly affected by CC, and therefore adaptation at local level is a priority. Physical and urban planning can help regulate important aspects of CC management. It covers the legally established mechanisms for planning the use of space, the spatial arrangement of structures in economic and non-economic sectors, the network of settlements, the spatial distribution of roads and other infrastructure, a strategic assessment of environmental impacts, guidelines and measures for the protection and improvement of environment and nature, measures for protection from natural and technological disasters and accidents, parameters for implementation of the Plan, and appropriate graphics.

A number of extreme natural events in recent years, especially in the Southeast Planning Region, and their dramatic impact on urban infrastructure, economic activity and public health in areas prone to risk, illustrate the urgency of reducing risk through practices for better spatial and urban planning. Spatial and urban planning has the potential to reduce vulnerability to the effects of CC such as floods and landslides, and to allow flexibility in the development and use of space for the purpose of dealing with the effects of CC. Therefore, this Report provides suggestions on:

- How improved physical and urban planning can contribute to mitigating and adapting to CC; and
- How to improve the process of spatial and urban planning in the Republic of Macedonia in order to provide good governance in terms of CC at both central and local levels.

The Report on Assessment of Management of Local Action for Climate Change (UNDP, December 2012) emphasises that spatial and urban planning has an impact on CC mitigation (e.g. the method of settlement planning determines the ecological footprint and the level of greenhouse gas emissions from settlements) and on adaptation to CC (e.g. planning will affect the resilience of the settlement to the effects of CC). The same Report states the conclusion that there are no legal provisions in domestic legislation that oblige municipalities and other actors to take CC issues into account in their preparation of spatial and urban plans. The Report concludes that there is little evidence of the integration of these spatial and urban plans with other sectoral plans (water, waste and energy). **This constitutes a legal and institutional gap.**

A detailed evaluation of urban planing and how it contributes to mitigating and adapting to CC was performed during Phase II as a separate activity that resulted in the *Strategic Concept on the Role of Physical and Urban Planning in Good Climate Change Management*. The entire document is annexed to this Report. This Chapter provides a summary of the Strategic Concept.

1. Using Both Spatial and Urban Planning to Deal with Climate Change

Interest in the potential role of spatial and urban planning in managing CC is raised as an issue because of the impact that rapid urbanization has on CC. Spatial development and the functions of settlements can increase or reduce energy demand, as well as the volume of energy production, distribution and use. Mechanisms of physical and urban planning and spatial development can respond to factors affecting the anthropogenic emissions of greenhouse gases in the atmosphere (e.g., increases in economic activity, population growth). Additional savings in carbon dioxide emissions resulting from energy use are possible through the introduction of regional cooling and heating systems and regulation of the use of fossil fuels, the introduction of vertical housing structures, and efficient recycling of solid waste.

New planning practices can help integrate CC into the process of urban development planning. These practices are based on a more integrated approach to spatial planning, infrastructural development and activities to facilitate economic growth, as well as their adaptation to help mitigate and adapt to CC. Integrated access means planning equally addressing impacts in terms of vulnerability to CC and their adaptation, and the reduction of greenhouse gas emissions in the atmosphere.

At international level, there is a consensus that the respective approaches of spatial and urban planning and urban development models are key to mitigating and adapting to CC, especially at local government level. For example, the design and functionality of settlements can either increase or reduce the demand for energy and can affect the way energy is produced, distributed and used. Some analyses indicate that spatial and urban planning, use of green infrastructure[30] e proper organization of human

[30] Green infrastructure is a decision-making approach to spatial planning and development that emphasizes the importance of preservation and which uses the natural environment to solve urban and climatic challenges. The main features of this approach are the application of the concept of space versatility at local level through proper planning and space management using natural systems for proper captures of storm water and treatment of polluted water, adaptation to climate change and the impact of heat waves, preservation of biodiversity, food production, ambient air quality, sustainable energy use, clean water and healthy soils, and the provision of more space for human functions such as improving quality of life through recreation facilities and providing shade and shelters in and around cities and townships. The application of green infrastructure plays a significant role in tackling climate change by protection against floods and other adverse effects of CC. For example, flooded plains can help to mitigate flooding with their natural capacity

activities in compact communities and the localization of manufacturing processes[31] can significantly affect in reduction emissions of greenhouse gases in the atmosphere, and the sensitivity and the capacity of local communities to adapt.

2. Spatial and Urban Planning Capacity for Adaptation to CC

Spatial and urban planning is relevant for local adaptation[32] to CC and for assessing and addressing vulnerability to the impacts of CC.[33] Urban infrastructure and housing facilities should be planned taking into account the local impact of CC (for example, the need for the adaptation of locally important sectors and resources for the purpose of limiting the negative effects of CC at local level). Since CC is explicitly related to future sensitivity , the current state of spatial development is taken as a benchmark for measuring sensitivity. Sensitivity, in its existing and potential future state, should be the deciding factor for the adoption of a Decision on Space Development. The vulnerability of municipalities to CC depends on the state of the urban infrastructure, types of economic activity and the way in which public services are delivered. The structure and density of population are the key prerequisites for urban infrastructure planning, land use and public transport policy in tackling CC. Adaptive capacity as a component of spatial and urban planning should be taken into account to reduce vulnerability at local level. Adaptation is a local priority because vulnerability at local level tends to be higher. For proper local level adaptation through spatial and urban plans, municipalities in the Planning Region need **to create maps of "risky and vulnerable areas" and to envisage adaptation measures**. Such maps are a tool to display information about hazards, vulnerability and risks of local communities in the larger Planning Region, and they also support the risk assessment and management process at national level. They are useful for setting priorities in planning space in local communities. Mapping of risks and vulnerability is also used for land planning and use, but it requires the use of modern GIS technolo-

to acceptwater and its gradual discharge back into the waterways. Forests act as natural sinks, absorbents of CO_2 and prevent soil erosion. Wetlands absorb pollutants. Therefore, the use of free green infrastructure in mitigating the negative impacts of climate change through natural capacities is economically more feasible because the maintenance of the natural absorption capacity is more effective and cheaper than the use of expensive artificial technological solutions. (For more details about this concept, see: Green Infrastructure, European Commission, 2010.)

31 For example, the proximity of residences to workplaces, transit and commercial services, as well as the configuration of the road network between these destinations, all directly affect the choice of vehicles and routes, i.e. potentially allowing for a reduction in the number of vehicles and travel distance.

32 Adaptation of natural or human systems in response to actual or expected climatic stimuli or their effects in order to mitigate damage or harm and to exploit the beneficial opportunities. A distinction is made between different types of adaptation, as follows: anticipatory or proactive adaptation, which is made before one feels the effects of climate change; autonomous or spontaneous adaptation - which is not a conscious response to climatic stimuli but is triggered by changes in the environment and natural systems and by the market and welfare changes in human systems; and planned adaptation, which is a result of a deliberate policy decision based on the notion that conditions have changed or will change and that action is needed to restore, maintain, or achieve a desired state. Glossary, Intergovernmental Panel on Climate Change (1995).

33 Vulnerability is the degree to which the system is susceptible to, and cannot cope with, the adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the nature, extent and rate of climate change and variation to which the system is exposed, its sensitivity, and its adaptive capacity. Glossary, Intergovernmental Panel on Climate Change (1995).

gies that include societal, economic, and social variables in GIS models.[34] The basic data for the preparation of a vulnerability map should be adequate for deciding which places should take measures of prevention and risk reduction. Local governments can undertake activities to locate the facilities and the population of the local area at risk of natural or human disasters for which a vulnerability map should be drafted. Local, spatial and demographic data is relevant to the process of planning and crisis management. For example, precise data on the prevalence of buildings in the settlement provides accurate identification about potential damage to and losses of buildings in residential areas; data on the number of people in residential buildings is an indication of possible victims and the extent of disaster in the event of flooding. Besides data on inhabited areas, municipalities can also collect relevant data on commercial and industrial areas. Thus, urban planners through their local urban planning can compare the flooded zones and coastal stability zones with these maps to determine which real estate and buildings are at risk. These would represent an additional tool in the local spatial and urban planning process aimed at adaptation to CC.

Under the Law on Crisis Management, Local Government Units shall, within their jurisdictions established by law, and for the purpose of their needs, the effective prevention and early warning of potential crisis situations, assess risks and dangers at local level, establish their needs and plan their resources. Among other things, they must assess risk threats and the danger of crises occurring in their area. Based on the Law on Crisis Management and the Decree regarding the Methodology for the Preparation of Assessments of Threats to the Security of the Republic of Macedonia by All Risks and Hazards, a National Assessment will be adopted that will apply to the entire territory of the Republic Macedonia. It will be adopted for the purpose of planned, timely, meaningful and coordinated decision-making, giving guidance and recommendations for taking preventative measures and optimal crisis management.

Interdependence between spatial and urban planning and measures for adaptation to climate change can be illustrated as follows: planning documents for spatial development should be tailored to meet increased levels of water flows due to rainfall and meteorological impacts and the vulnerability of urban infrastructure related to the impact of hydrological changes and insufficient drainage capacity of the infrastructure, sewage and water treatment. Furthermore, the rising level of water flows, coupled with the increased frequency of bad weather, can cause problems in sanitary protection in case of the inability of local urban infrastructures to capture a sudden influx of water. The quality and safety of drinking or recreational water may deteriorate as a result of the discharge of sewage effluents and microbiological or chemical agents and bio toxins. The planning documents should also adapt the space to higher temperatures and more frequent droughts. Droughts cause an increased risk of fire and this is a sufficient reason enough for planning documents to take into account the surroundings of settlements in terms of fire risks, Fast-burning

[34] According to the Guidelines for the Assessment and Mapping of Risks in Crisis Management, adopted by the European Commission as of 21 December 2010, Number SEC (2010) 1626, the European Commission recommends that Member States adopt a gradual approach regarding the development of risk maps. As a first step, a preparation of maps that show the distribution of expected major space hazards is proposed. These should be accompanied by maps that show the spatial distribution of all relevant elements that need to be protected (population, infrastructure, protected natural areas) and special maps for different subjects of protection. The third proposed series of maps should show the spatial distribution of vulnerability in terms of susceptibility to harm of all, and especially relevant subjects of protection. These maps are the basis for the preparation of risk maps that provide an overview of the combination of probability and impact of certain events.

dry areas with low vegetation, etc. Extreme weather conditions increase the demand for household and industrial water and energy in inhabited areas, and reduce the level of available resources. CC affects the performance of commercial activities in Local Government Units, (i.e. the Planning Regions) and therefore planning documents need to adapt the space in which economic activities are carried out. In this context, it is required to assess the capacity and vulnerability of existing infrastructure through the mechanisms of spatial and urban planning[35] to better plan for how the existing systems can be adapted to respond to the effects of CC. This information is also crucial for making decisions on appropriate investment options.

New practices entail transparency in spatial planning and urban development and a need to raise public awareness of potential disasters associated with CC. One of the benefits of comprehensive spatial planning is the integration of different aspects that affect CC. Spatial and urban planning has the potential to address several aspects relevant to CC adaptation, as follows:

- **Capacity to assess the long-term consequences,** i.e. the impact of CC on the environment and human life and health. This capacity is based on the strategic impact assessment and it must be taken into account in the preparation of spatial and urban plans.[36] This capacity is, however, neutralized by the inability / lack of jurisdiction of the bodies for spatial and urban planning to assess the pace and extent of extreme events. For consistent vulnerability assessment, the data on the pace and extent of extreme events should be used in cooperation with specialized bodies that have direct responsibility to collect, store and distribute data for climate projection.
- **Ability to assess the impact of changes in land use on CC.** Such an assessment can be integrated into

[35] Coastlines, lakes, rivers, canals, forests, wetlands, special ecosystems (e.g., spawning grounds), reserves of endangered species, environmentally sensitive areas, national parks and natural resources, railway stations, roads, highways, short paved roads, macadam roads, dams, drainage and control systems, sewers, bridges, ports, airport terminals, water supply systems, sourcing systems for waste-water treatment, hospitals and medical centres, educational centres, retirement homes, public places, theatres, sports stadiums, recreational areas, agricultural areas, exploitation forests, industrial zones, shopping centres, hotels, residential areas, fire brigades and rescue services, emergency areas, depots of supplies needed for emergencies, cultural institutions and archaeological sites, public institutions (state or municipal departments).

[36] The main principles of the national SEA procedure are laid down in the Law on Environment (Chapter X, Articles 65–75). Strategic Environment Assessment is implemented for strategies, plans and programmes (strategic documents) prepared by state institutions and local governments, which could have an impact on the environment and human life and health. The criteria for the necessity of preparing an SEA Report for certain strategic documents are regulated by secondary legislation such as the *Decree on strategies, plans and programmes, including amendments to such strategies, plans and programmes for which the procedure for assessment of their impact on the environment and human life and health must be implemented* (Official Gazette 153 / 2007) and the *Decree on the criteria based on which decisions are made on whether certain planning documents could have a significant impact on the environment and human health* (Official Gazette 144/2007). The institution that prepares the strategic document also prepares the Strategic Environment Assessment Report, which is part of the strategic document. Before the SEA Report is prepared, a procedure for determining the scope of the Report should be implemented by the institution / authority preparing the planning document. The content of the SEA Report is prescribed by a *Decree for the Content of the Strategic Environment Assessment Report* (Official Gazette 153/2007). The strategic document, including the SEA Report, is open to comments from the public and other state and private institutions.

a strategic environment assessment which is mandatory for any spatial or urban plan / documentation. Based on the assessment of the impact of CC, spatial and urban planning can introduce flexibility in responding to CC. The concept of flexibility is consistent with the existing principles of spatial and urban planning and can easily be integrated into the planning process.

- **Capacity to perform planning of space development adaptable to CC** and to avoid solutions that have no adaptive capacity. This is the focus of future development planning. However, the capacity of Spatial and Urban Planning to adapt existing spatial structures (settlements, infrastructure) is problematic, particularly in terms of costs. Municipalities can intervene in the reconstruction of facades and roofs of private buildings for collective housing, especially in terms of energy efficiency, but reallocation would cause unreasonable costs.
- **Capacity to adapt land use in accordance with the degree of vulnerability,** and to exclude areas which are prone to accidents and disasters and to provide for reallocation / withdrawal from vulnerable zones. This capacity is possible, but not always effective and financially justified for the existing settlements because it is related to the regime of property rights and is often associated with high financial resources for the relocation of settlements and vulnerable areas.

3. Spatial and Urban Planning Capacity for CC Mitigation - Reduction of Greenhouse Gas Emissions into the Atmosphere

Sustainable spatial and urban planning development is based on planning in several core sectors: transport, housing, industrial production and energy, economic activity, land transformation and poverty reduction. At the same time, these sectors are also the main sources generating and emitting greenhouse gases and thus contributing to CC. While at the international community level, negotiations are underway regarding the common goals of nation-states in the fight against global warming, the focus of municipalities is on initiatives to reduce local greenhouse gas emissions, particularly by limiting energy use. Municipalities are centres of economic activity and technological, social and institutional innovation, all of which are essential to their competitiveness at regional, national and international levels. The concentration of population and economic activity helps urban areas to play a significant role in efforts to reduce greenhouse gas emissions. Changes in space development can lead to a reduction in the level of greenhouse gases in the atmosphere. The tendency is to concentrate industry in municipalities. The growth and development of municipalities is integrally linked with the availability of energy and the demand for fossil fuels, which further contribute to emissions of greenhouse gases. Reducing greenhouse gas emissions will help to alleviate many local environment issues that affect the health and welfare of the population, such as air pollution, acid rain, the pollution of soils, the cycle of production and the consumption of food. Given the two-way relationship between CC and spatial and urban development, and according to their distribution of responsibilities, municipalities and regions have key responsibilities in creating strategies to mitigate CC. **One way in which municipalities can have a positive influence is to set local targets**

for reducing greenhouse gas emissions. Such initiatives often depend on the objectives set by central government and the possibility of joint efforts between Local Government Units, and partnerships of local government with local stakeholders, especially with the private sector. Within their competencies, they may influence: the implementation of building standards in the process of obtaining building permits; programmes for using the production and distribution of energy and energy efficiency; the regulation of public transport; control of industrial processes; waste and water management; land planning and use; the stimulation of energy production from renewable resources; the management of forests and protected areas, etc.

Spatial and urban planning can introduce incentives for the use of sustainable technologies and practices, education and training on CC, research and the introduction of new technologies that can reduce the level of emissions in the atmosphere as a result of anthropogenic impact. To meet the challenge of CC mitigation, a model for spatial and urban development should be developed which has the 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.

4. Legislative Framework in the Republic of Macedonia - Assessment of the Level of Good CC Management through Physical and Urban Planning

The Law on Spatial and Urban Planning does not address the issue of CC. The basic spatial planning platform at central level is the preparation of the Spatial Plan of the Republic of Macedonia, which is adopted by the Assembly of the Republic of Macedonia and is elaborated on the basis of hierarchically lower spatial planning documents (Spatial Plan of a Region and Spatial Plan of an Area of Special Interest for the Country). The process is managed by the Ministry of Environment and Physical Planning and the Agency for Spatial Planning. At local level, the following are adopted: General Urban Plans - GUP (for the City of Skopje and the municipalities where municipal seats are located); Detailed Urban plans - DUP (for a planning coverage for which a General Urban Plan is adopted); Village Urban Plans - VUP (for settlements in municipalities of a rural character); Non-Settled Area Urban Plans - NAUP (for planning coverage of municipal areas that are not covered by General Urban Plans and Village Urban Plans, as applicable); Architectural and Urban Designs; and Urban Projects (for the development of urban space structures up to the level of preliminary design, which are outside the urban planning coverage of Urban Plans). In order to consider the planning opportunities for spatial planning, i.e. the preparation of urban plans except for a Detailed Urban Plan, the bearer of the plan shall require conditions for spatial planning. GUPs, VUPs and NAUPs shall be adopted on the basis of conditions for spatial planning which will be issued pursuant to the Spatial Plan of the country.

The process of preparation of the National Spatial Plan is centralized and municipalities have no discretionary rights to set local development priorities, though they may establish such priorities in their local plans

while ensuring consistency with the objectives of the Spatial Plan of the Republic of Macedonia. Local urban plans are adopted in 2 stages: Draft and Plan Proposal. Drafts are subject to an expert review. The process for the adoption of local urban plans is managed by municipalities / the City of Skopje. According to the legal framework, the process is financed from the budgets of the municipalities / the City of Skopje. Local Government Units perform their responsibilities through an organizational unit in charge of urban planning based on a Programme that sets the boundaries and contents of the planning district. The Programme is adopted by the Municipal Council. The funds for its implementation are approved in the Budget of LGUs. The legal framework provides for the principle of transparency in the process of adopting and implementing the plans. Supervision over the transparency of the work of local governments, especially in terms of regular, timely and full communication of information to the citizens is the responsibility of the Ministry of Environment and Physical Planning. To provide expertise and transparency in the process of spatial and urban planning, the Municipal Council forms a participatory body that presents the views, opinions and needs of citizens and legal entities, monitors the planning process by giving initiatives, guidance and suggestions for the preparation of planning solutions regarding the specific municipality. The participatory body consists of representatives from the Council, an expert from the municipal administration, prominent experts in the field of urban planning, representatives of NGOs and citizens in the municipality.
A Geographic Information System for the Planning Regions has not been established. However, as an overall development framework, it is planned to involve GIS in the strategic document establishing the National Spatial Data Infrastructure (NSDI) of the Republic of Macedonia.[37]

[37] The Draft Law on the National Spatial Data Infrastructure was submitted for adoption in April 2013. It transposes the 2007/2/EC Directive of the European Parliament and of the Council of the European Union of 14 March 2007 establishing an infrastructure for spatial information in the European Community (INSPIRE). The purpose of establishing the NSDI is to facilitate access, exchange, use and distribution of standardized spatial data and services in an efficient, effective and coordinated manner. NSDI establishes a technological, legal and administrative framework for interdepartmental cooperation that supports e-government initiatives and enables the integration of spatial data from different sources into a single network. The NSDI organizational structure consists of: NSDI Council, NSDI Committee and NSDI Working Groups.

VII. Conclusions and Recommendations

1. Mandate to Plan and Implement CC Policy

Municipalities in both Planning Regions face several obstacles in establishing CC policy priorities.

The first group of obstacles comprises legal obstacles that include the lack of municipal jurisdiction for taking local action to tackle CC. In some areas, LGUs do not have full decision-making power, while in others they have no jurisdiction at all. Municipalities of both Planning Regions share the problem that none of them has a local plan for climate change. This is because the legislation of the Republic of Macedonia does not grant municipalities (or forms of their cooperation) the authority to adopt local / regional planning documents dedicated solely to CC. Nevertheless, the legal framework does not set any limitations on such local action. Since the issue of CC is a matter of public interest and of both national and local importance, municipalities may adopt a municipal strategy for mitigating and adapting to CC. This local strategy or action plan should be in accordance with the National CC Plan (3rd National Communication). In this way, municipalities / Planning Regions will be able to influence

the determination of specific central level measures and activities concerning the municipality in accordance with local interest in adaptation.

Key priorities for local policy on CC should be defined in terms of local / regional adaptation in response to identified risks and local or regional vulnerabilities. The establishment of local priorities and priority measures depends on the timeframes involved, which means that municipalities will have to give priority to those measures which, during the planning period of the Municipality, are most likely to influence the reduction of greenhouse gas emissions, i.e. to contribute to local adaptation to the negative effects of CC. When setting priorities, both municipalities and Planning Regions should prioritise policies at achieving the overall CC policy, which are cost-effective and can lead to the greatest reduction of emissions, risks and negative effects. Through these processes, policymakers determine areas where actions can lead to multiple benefits.

Municipalities can also set criteria for determining priority measures to reduce greenhouse gas emissions (e.g., criteria for determining the timeline, benchmarks and methods of resource allocation). As part of the planning process, municipalities within the Planning Region can develop measurable benchmarks by which progress in the implementation of sectoral measures will be assessed. In order to adopt a Local Action Plan on Climate Change, the prerequisite is to make an inventory of greenhouse gases to identify the level of emissions from the sectors of energy, transport, industry, land use and waste management, etc.

Lack of authority or proper competence is one of the main obstacles to the involvement of LGUs in the implementation of policies for mitigating and adapting to CC. Local authorities have very few mechanisms available, and even lack the power to influence the greenhouse gas emissions in their area, particularly the emissions of the energy sector (the national electricity network development and maintenance), funding of development, maintenance and operation of road infrastructure, taxation and other revenue sources.

The lack of municipal jurisdiction to assume the role of a regulator cannot be considered appropriate for local mitigation of and adaptation to CC. To facilitate the preparation and implementation of local policies for CC, it is necessary to determine the areas where LGUs can impose rules. Since jurisdiction and scope of authority to adopt regulations depend on the municipality's mandate given to it by special laws, the issue should be reconsidered appropriately.

2. Integration of Climate Change Issues

Municipalities have no plans that directly focus on local action for mitigation of and local adaptation to the adverse effects of CC. Sectoral planning and programming documents adopted at municipal level, which are also measures to deal with CC at local level, are characterized by a lack of focus on issues of mitigation / adaptation.

In fact, the planning and programming documents for energy use and energy efficiency, local transportation, waste management, water management and the protection and rescue of people and goods have no direct reference to CC. Such local action plans meet the legal obligations of sectoral laws, but neither take no care nor contain any measurable indicators of the extent to which they lead to a reduction in local emissions of greenhouse gases, or more importantly, the extent to which they are adequate to reduce local vulnerability and meet the needs of local adaptation to the adverse effects of CC.

For example, in many municipalities there is no integration of CC in urban plans. It is obvious that the issue of CC is treated as a separate strategic issue that has no direct point of contact with other areas such as transportation, finance, education, zoning, etc. If the goals related to climate change policy and the long-term risks of CC are fully integrated into the plans for urban de-

velopment, the prospects for effective local action on CC will improve. Municipalities should strive to achieve a better balance between adaptation measures and mitigation measures in their planning documents, to reduce the negative consequences of such measures and to better link the goals of spatial and urban development with the CC measures that are not only related to environmental improvement. In other words, CC will have to be considered as an integral part of spatial and urban planning policy (more on urban planning improvement below). The same also applies to other policies. For example, a necessary precondition for adopting any urban plan that takes into account the issue of CC is the implementation of integrated policies for transportation and land use, since zoning and space use may intensify or limit the exposure and vulnerability of the population and infrastructure to the growing threat from the effects of CC. Most principles should be integrated in both policies, such as multipurpose development, reducing the need for transport, etc.

One possibility of overcoming this lack of integration at the Planning Region level is to form a cross-sector coordinating body, with the participation of all municipalities in the Region, that will ensure the integration of CC into sectoral policies, i.e. any urban development planning document or urban documentation of the Region will be subject to assessment of its impact on CC adaptation and mitigation. This would ensure a structured systematic approach to CC policy implementation, using all the human resources available in the Region who have the capacity to assess CC impact, thus achieving a rationalization of costs.

In the preparation of their planning documents, municipalities should take into account climate scenarios and adequately incorporate them into their sectoral local planning documents. The successful integration of CC issues in the local development planning process depends on the integration of adaptation measures. In their sectoral planning documents, municipalities should emphasize the issue of adaptation. The lack of attention to issues of adaptation in local planning documents is probably due to the fact that taking CC into account requires a higher level of research, which undoubtedly requires more funds to be ensured in terms of the exclusive responsibility of local government budgets delegated from the State Budget. This lack of attention may also be due to the fact that most issues of adaptation (e.g. river basin management planning) are not under municipal jurisdiction. The solution may consist in the integration of initial adaptation measures into planning documents (for example through the integration of concerns about climate risks in the regular process of investments planing in the municipality).

3. Cooperation between Municipalities

Local strategies and action plans for mitigating and adapting to CC may be subject to inter-municipal or regional cooperation. Inter-municipal Cooperation is a convenient solution for the smaller municipalities that gravitate towards the larger municipalities of Negotino, Kavadarci and Veles in the Vardar Planning Region; and towards Strumica and Gevgelija in the Eastern Planning Region. Generally, there are two basic activities where IMC may be established so that the Planning Region municipalities become more efficient in setting and implementing their local priorities and locally adapted solutions for dealing with CC.

A) The first activity involves cooperation in making an inventory of greenhouse gas emissions from sources and sinks at regional level. The establishment of contractual collaboration as a form of IMC in the Planning Regions, whereby one municipality performs work on behalf of one or more municipalities, is adequate for the process of inventorying greenhouse gas emissions for the implementation of regional CC mitigation activities. In this case, the contractual cooperation for work performance will relate to the establishment of measurable indicators to compare the progress in CC

mitigation across municipalities; the methods and reporting framework; the methods of progress assessment and performance evaluation (such as before and after the implementation of action plans); and the identification and dissemination of best practices for CC mitigation. There are several reasons for harmonizing the methods of inventorying local GHG emissions and sinks. IMC for inventory-taking of greenhouse gases can result in better utilization of human and material resources, as well as savings / more effective utilization of municipal budgets. Specifically, any form of access to funding for efforts to deal with CC requires harmonized methods of inventory-taking, reporting and database creation. Regional inventory-taking will allow the Planning Region municipalities to perform temporal and territorial assessment of progress in emission reductions and to compare their outcomes and cost-effectiveness from reducing greenhouse gas emissions at municipal and Planning Region levels in several relevant sectors (energy, industry, agriculture, waste, and transport).

Cooperation on regional inventory-taking will enable comparison with other municipalities in the territory of the Republic Macedonia that have similar levels of capacity and similar economic, demographic, geographical and climatic features. Such comparison will help identify and understand the sources of greenhouse gases and the ways in which they are emitted in the atmosphere. This opens new opportunities for efficiency in terms of costs and resources for mitigation, as well as cooperation and transfer of knowledge. Regional inventorying and reporting to the central government is essential and will allow the central government to make its decisions on CC with greater accuracy, to better assess the mitigation potential at the level of Local Government Units, and to make decisions that are regionally and locally relevant. In the future, the regional inventory of greenhouse gases, which will contribute to the preparation of the National Inventory and Emission Targets, would be a database providing the basis for national CC policy-makers to decide upon the allocation of funds for each municipality and stimulate the use of these funds for reducing emissions. The ultimate goal of inventory-taking is to help towards reducing greenhouse gas emissions and thereby improve environmental quality in municipalities, as well as opening new employment opportunities. Finally, IMC for inventory-taking of greenhouse gases will allow the creation of measurable and verified data for the reduction of emissions (in accordance with the Protocol for Emission Identification based on the IPCC Methodology), and this in turn will enable certain local / regional solutions for the mitigation of greenhouse gas emissions to be adapted into adequate solutions to be implemented with backing from various funds, particularly international funds.

The IMC Agreement for Inventory-taking in the Region should incorporate a system for monitoring emissions at the level of individual entities, which should also be a system for the compilation of data and the estimation of emissions and their impact at Planning Region level, and for reporting on the entire Region and on individual municipalities in the Region. As a result, municipalities can apply different approaches in defining the sectors to be included in the inventory-taking and in determining the areas to be included in the official data inventory system.

B) The second activity involves collaboration to create capacity for timely and effective adaptation of the municipalities in the Region to the negative effects of CC. Municipalities from the Planning Regions may establish a joint administrative body as a form of IMC in order to plan the adaptation of all plans related to CC (especially urban plans). The future SPR Joint Administrative Body can and should use vulnerability analysis as a basis for planning regional / municipal adaptation to CC and implement the proposed measures for adaptation of the Southeast Region in the sectors of water resources, agriculture, health, and crisis management[38] developed within the

[38] On the vulnerability analysis and proposed adaptation measures for the Southeast Region,

Project 'Third National Communication on CC'. Also, a starting-point regarding work on the form of inter-municipal cooperation is provided by the scenarios for changes in temperature and precipitation on the territory of the Republic of Macedonia by 2100, developed as a regular activity of the Hydrometeorological Service. Later on, the IMC experience in SPR should be transferred and used for the future VPR Joint Administrative Body.

The establishment of IMC will achieve a better utilization of human and material resources and savings and more effective utilization of municipal budgets. In this case, the planning documents relevant to CC adaptation will incorporate actual needs based on the adaptation of a specific municipality and/or Planning Region.

4. Resources

The process of decentralization is committed to strengthening the implementation capacity of municipalities. Most responsibilities delegated to local authorities cannot be effectively implemented, however, because municipalities lack sufficient financial resources. This suggests that municipalities cannot fully exercise their powers and responsibilities and that there is a need to create an effective system for financing local action for climate change. If not, lack of funding resources could lead to municipalities not integrating certain expensive sectoral measures in their action plans (e.g. transport).

Bearing in mind that local actions will have to be financed from municipal budgets, which according to the questionnaire responses is not sufficient even to implement the original jurisdiction of municipalities, the central government will have to introduce stimulation measures to encourage this activity, or allocate funds from its Environment Investment Programme.

Regarding the implementation of national priorities at local level, the central government should provide financial support to local governments for their delegated powers and establish a database of information about the sources and calculation of greenhouse gas emissions by Regions and LGUs, as well as expert assistance for the integration of CC in the planning documents, which will enable a platform for LGUs to prepare their local plans on CC. Otherwise, the existing obstacles to the implementation of local planning documents will remain.

Besides financial support from the central government, municipalities have many other funds and mechanisms available.[39] However, the central government will, at least in the initial phase, have to facilitate the preparation of municipal projects adequate for international financing and gradually strengthen the capacity of municipalities to raise implementation funds on their own. Municipal activities and priorities for dealing with CC can also be supported by the private sector. For this reason, municipalities should determine incentives that will stimulate the private sector to support the implementation of CC measures and activities.

Through the Planning Region Development Centre and the Council, initiatives can be taken that will establish IMC in the Region that will facilitate the implementation of pilot projects on energy protection, the organization of regional transport, regional CC knowledge and capacity-building for effective and efficient adaptation to CC, the development of a CC Strategy and the establishment of regional priorities, technical assistance, education and financial incentives .

Rationalization of costs and resources and effective capacity utilization can be achieved through inter-municipal cooperation mechanisms.

[39] GEF, European Bank for Reconstruction and Development, forthcoming Horizon 2020, IPA funds from the EU, European funds for municipalities and towns, signatories of the Convention of Mayors.

5. Good Governance and Local Action for CC

There is a widely recognized need for the involvement of local stakeholders, including municipal authorities, local communities, local representatives of civil society and the local business sector. Municipal bodies should establish cooperation with stakeholders when making decisions in their inherent jurisdictions. The established practice of conducting public debates, forums, public participation in meetings of the Council, participation in the work of the bodies of municipal authorities should be focused on creating greater awareness not only among the general public as a diffuse mass, but also among a specific target group oriented to the message of handling CC. In this way, local actors who have legal, economic or other concerns will learn why the municipal authorities should make decisions and use different or additional resources in their implementation of specific sectoral measures for their settlements . Participatory methodologies should ensure that the interests of all stakeholders are taken into account when local CC policies are elaborated. This can be ensured through the application of one or more of the mechanisms described below

First, the establishment of local / regional groups or thematic commissions mandated to make recommendations to be considered by municipalities. The establishment of such forums will enable the engagement of individuals, groups, communities and the business sector to contribute to the formulation and implementation of sectoral policies for reducing the emission of greenhouse gases and adequate adaptation in the Region. These forums may include the local expert community and business sector in the promotion of business solutions that lead to CC mitigation and adaptation; the promotion of mechanisms for the protection of rights in procedures before competent authorities as a tool through which to clarify existing laws, limit corporate behaviour, determine liability, provide opportunities for compensation for damages caused by CC, and stimulate an informed public debate on CC issues.

Further, the development of local policies and plans typically involves the formation of an expert body or commission or other form of institutional cooperation (for specific sectors - transport, energy, urban planning, waste management, etc.). The members of such bodies are typically decision-makers, but also other stakeholders who can assist in defining the current priority measures and their implementation. The goal is to present all interests concerned in the planning document early on in the planning stage in order to be able to agree upon the objectives, the priority areas where actions will be taken, the implementation measures and the evaluation mechanisms. The work of such bodies in the initial stage of preparing a draft planning document should be a process closed to the public. Municipalities will, through such groups, establish the practice of jointly diagnosing the issues on CC adaptation and mitigation by sectoral measures which would also be aimed at the formulation of future sectoral policies.

Such groups can also be formed through the application of inter-municipal cooperation mechanisms. In order to maximize the likelihood that planned sectoral measures are adequate to local / regional conditions and risks affecting the local population, the draft planning documents of sectoral working groups need to be made available to the interested public, industry, NGO sector, academic and professional community, local people, etc. The involvement can be arranged through workshops, lectures, public debates and presentations, or by ensuring written comments on the draft plans and measures contained therein.

Local action for CC can be effective only if parties that have no public and legal capacity (citizens, local NGOs and the business sector) are included in the process of policy formulation and implementation. Their role is to broaden public participation in decision-making on issues that affect the local population and tend to appear as corrective instruments in the work on public

and legal entities, which will enhance and complement the work of central and local authorities.

Expert groups can play a key role in the identification of local emissions. The role of civil society in local CC action is important in the phase of formulating the policies and setting local priorities for mitigation and adaptation, in the implementation phase of the CC policy, and in the dissemination of data and knowledge to the general public. Support from the business sector and the general public in setting priority CC policies is the basis for every CC plan. Such support can take the form of a positive public climate, providing support for the policy by express public opinion or the absence of overt opposition from key stakeholders and interest groups. In order to ensure participation, local authorities may use different models, starting from discussion on individual projects to greater participation of the professional or general public.

Civil society may also have a significant role in the dissemination of ideas and best practices. Many of the solutions used by other local governments can be disseminated and replicated on the territory of municipalities with similar social, economic, infrastructural and climatic characteristics. Civil society organizations, including economic associations, can play a key role in the collection and exchange of information on CC policy, its formulation and implementation.

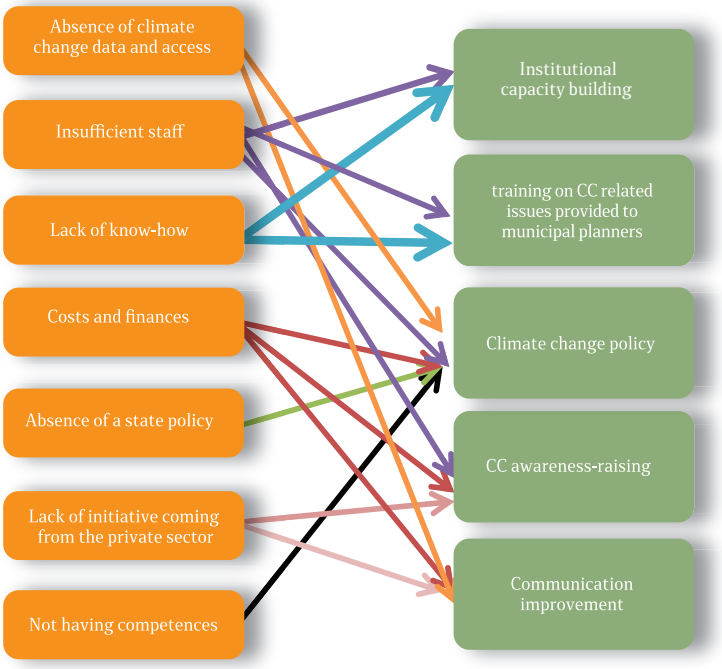
6. Urban Planning

New methods of spatial and urban planning can contribute both to mitigation (e.g., through the promotion of public transport, reduction of travel distances by arranging combined use of vehicles, improving construction standards, increasing green areas and careful use of natural resources) and adaptation (e.g. through the relocation of vulnerable neighbourhoods and communities, improved water drainage and sewer infrastructure for the purpose of protection against natural disasters related to CC, and other measures).

Current practices in the Republic of Macedonia shows that CC is seldom taken into account in planning the development and deployment of resources by national and local policy-makers for spatial planning. The recommendations below are intended to indicate the possibilities for better spatial and urban planning in response to CC and the benefits of developing a new approach to spatial and urban planning.

Spatial and urban plans are adequate for addressing CC issues. The results of the two questionnaires both qualitatively and quantitatively show that municipalities in Planning Regions, compared in terms of their capacity to develop other planning documents, have the greatest capacity for spatial development and planning. The proposed solutions for overcoming the identified barriers are illustrated in Chart 1 below. **The main recommendation** is for municipalities to use the presented role of local spatial and urban planning and through it to predict their local actions for dealing with CC in the future. This recommendation is made on the basis of the finding that the spatial and urban development planning documents, as well as the landscaping documents, of the municipalities in the analysed Regions are more numerous, and at the same time prove the capacity of municipalities to prepare such planning documents.

Chart 1. Spatial and Urban Plans and CC - problems, proposed solutions



The responses to the questionnaires show the points at which knowledge about CC is used in the process of urban planning. In the next stage, it would be advisable to conduct research into whether, when and to what extent the municipal administration working on urban planning has knowledge of CC and uses it in the process of urban planning. This study will make it possible to identify the obstacles in the flow of information about climate change and the need for training to strengthen the administration's capacity to use knowledge of CC in spatial and urban planning. The study will need to determine the following:

- To what extent the findings about CC are relevant to urban planning concerning climate phenomena at local and regional level;
- To what extent LGUs have access to climatology data and which obstacles prevent the flow of CC data, and the impacts of CC on the Municipality;
- The methods and techniques for obtaining and using climatology data in urban planning;
- Which unit within the LGU can and should use the data on climate change in spatial and urban planning;
- The capacity of the municipal administration to apply knowledge about CC in spatial and urban planning;
- The stage of the urban planning process at which such data should be used to establish CC influence on the final decision.

To enable local action to mitigate and adapt to climate change, local measures alone are not enough: **action at central level is**

also necessary. The central government should incorporate the issue of dealing with CC in its strategic development planning and spatial development in order to provide a uniform local approach to tackling CC by SUP.

The central government should, through legal, administrative and fiscal measures, define its own role and objectives in CC policy, particularly in terms of enabling local action, define the role of local government, envisage measures for the stimulation of local action for climate change, and provide solutions to potential obstacles. Legal measures should be aimed at creating a legal basis for treating the issue as a content of spatial and urban planning, but also for defining the manner, conditions and tools through which space will be developed and planned for the purpose of tackling CC. The main institutional approach to stimulating local actions for climate change is the creation of a central framework that enables local action. The central government needs to find mechanisms to encourage and enable municipalities to respond to CC by adopting decisions regarding spatial and urban planning with long-term implications for the municipality. In order for the new practices of urban planning and development to be effective, the central government should find a way to overcome the municipalities' problems of limited financial capacity and limited human resources. The following actions will be necessary:

- The development of a public policy and legal / institutional framework for spatial development and landscaping that incorporates CC concerns and enables central policies and priorities to be transferred and detailed at local level;
- The adoption of regulations essential to the encouragement of local action for CC, giving the mandate and discretion to LGUs to set local development priorities taking into account the local impact of CC, or to create a planning framework in which municipalities can act because Municipal Councils adopt UPs in accordance with the Law on Spatial and Urban Planning;
- The establishment of municipal competencies necessary to take additional measures complementary to national measures;
- The development of a Programme for institutional and financial support and stimulation for using the mechanisms of spatial and urban planning in local action for climate change;
- The development of a tool for urban planners that will enable a uniform approach in the manner of including CC issues in the processes of spatial and urban planning;
- The identification of where and when climate information is used in the process of spatial and urban planning;
- Ensuring the coherence of relevant policies and coordination to address conflict situations in the priorities set for CC and other social, economic and environmental policies;
- The establishment of a digitized spatial information system and a climatology data system relevant to the modelling, projection and development of scenarios in the context of CC, and to ensuring transparency and services to stakeholders;
- The creation of an evaluation mechanism and performance indicators for local spatial and urban plans in the direction of mitigating and adapting to CC.

For a comprehensive response to CC, the spatial and urban planning policy should be designed to achieve two main goals: reduction and adaptation to the irreparable effects of CC. The strategic measures for the integration of CC in spatial and urban planning policy should increase the benefits for society as a whole. The mechanism will have to ensure that the benefits of adaptation measures are greater than the costs of adaptation, i.e. the benefits also outweigh the costs incurred if no adaptation measures are taken.

*
* *

In accordance with the mandate granted to municipalities, local governments will need to apply new practices relevant to CC. In this regard, municipalities need to work on developing the capacity of staff to apply new methods of spatial and urban planning as part of their continuing professional education. In the development of local spatial and urban planning documents, the following aspects should be incorporated:

- Spatial development and CC impact assessed on the basis of local landscaping under existing climate conditions and within the existing environment situation;
- Spatial solutions should be adapted to meet the changing climatic conditions and environmental situation as a result of projected climate change at local level;
- Land use and spatial and urban policies should be created to address the adverse effects of natural disasters;
- Each municipality in the Planning Region must evaluate its potential risks and develop its space accordingly. CC data should be used in accordance with the specific climatic event in the affected local area;
- Municipalities in the Planning Region should establish cooperation and a shared agenda towards their adaptation of regional space;
- Regional space adaptation should take into consideration the possible impact on neighbouring municipalities with which the Municipality has economic and social ties;
- Municipalities in the Planning Region should establish cooperation and a shared agenda towards their common efforts to minimize anthropogenic emissions of greenhouse gases in the atmosphere;
- Municipalities in the Planning Region should provide greater transparency of their spatial and urban plans and the process of their adoption, which will raise awareness among local people about the effects of CC and ensure their involvement in dealing with CC.

Finally, planning should be based on consistent data and entail the integration of available climatology data in the planning process, so that the implications of CC can be modelled and understood in the context of spatial and urban planning, thus enabling new scenarios for local urban development.

In practice, according to the responses to the two questionnaires, relevant data and knowledge about the local impact of CC is not available to municipalities. Consequently, a practice of sharing information needs to be established in order to develop appropriate methods and procedures for the design of urban space.

7. Collaboration at National and Local Level

The establishment of a national strategic framework and priorities to support local action for climate change is important because LGUs play an important role in reducing national greenhouse gas emissions and achieving the goals of adaptation. Therefore, the central government should find a way to set clear goals for the local context and work together on the implementation of sectoral policies at local and regional levels, or it should create mechanisms that will enable the establishment of local and regional priorities. **This means that a mechanism needs to be created for gathering relevant information on local priorities that will guide local action for CC.**

State administration bodies should work with the bodies of LGUs in order to develop tools for developing capacity, financial and human resources for decision-making on CC issues of local importance.

Summary of Activities for Good CC Management

Measures to ensure the principles of good governance	Jurisdiction	
	Primary	Secondary
Participation and strategic planning	LGUs	Planning Region; Central Government
Establishment of a database of analytical data for planning	Central Government	LGUs; Planning Region
Provision of financial sustainability and economic efficiency	Central Government	LGUs; Planning Region
Coherence of CC policy	Central Government; LGUs; Planning Region	/
Equality, non-discrimination and transparency	Central Government; LGUs; Planning Region	/

VIII. Tabular summary: conclusions and priorities, common framework for VPR and SPR

1. General CC policy

Priority	Type	Jurisdiction	Description	Timeline	Funding	Goals	From	To	Indicator	Note
Identification of the responsible CC unit / staff	Short-term	LGUs/ IMC	Modification of the job systematization act; Establishing a form of IMC regarding a CC evaluation forum	1-3 yrs	Local budget	Establishment of administrative structure	December 2013	December 2014	LGU's job systematization act modified; CC staff in LGUs ensured	/
Strengthening the capacity of LGUs / form of IMC	Short-term	LGUs/ IMC	Training on: CC integration; planning, preparation and implementation of CC plans; taking local action for CC; capacity for applying climatology data in the sectoral planning process	1-3 yrs	Environment Investment Programme; grants	Strengthening the capacity of the administrative structure to coordinate planning, implementation and evaluation of CC policies	December 2014	December 2017	Training conducted; Skills among local administration to integrate the issue of CC	Preparation of proposals for training
Establishment of inter-municipal cooperation for adaptation to CC	Short-term	LGUs/ IMC	Through the legal mechanisms envisaged for IMC	1-3 yrs	Local budget	Establishment of administrative structure	December 2013	December 2014	Contracts for IMC signed and operational	Depending on the Region and LGUs' preferences

Priority	Type	Jurisdiction	Description	Timeline	Funding	Goals	From	To	Indicator	Note
Establishment of a participatory decision-making mechanism	Short-term	LGUs/ IMC / Central government	Establish local / regional protocols to ensure participation; Review legislation to ensure participation	1-3 yrs	Local budget / RM Budget	Good management of local action for CC	December 2014	Ongoing	Protocols to ensure participation adopted	To take account of legal mechanisms for participation, to link them with sectoral processes of spatial and urban planning and procedures for building permits; public participation on environment issues; water management; determine the planning phase where CC is taken into account; solutions to overcome obstacles in the flow of information
Financial mechanisms for financing CC activities	Mid-term	Central government / LGUs/ IMC	To determine mechanisms for funding local action for CC	1-5 yrs	Environment Investment Programme; grants; CDM; funding options from international sources	Provide a Mitigation and Adaptation Fund	December 2013	Ongoing	Introduction of financial mechanisms in legislation and acts of LGUs	Central government: providing technical support; support for CDM projects; introduction of fiscal instruments and incentive mechanisms

Priority	Type	Jurisdiction	Description	Timeline	Funding	Goals	From	To	Indicator	Note
Identifying and filling the gaps for local action on climate change	Mid-term	Central government / LGUs	Revision of the Law on SUP; sectoral laws for integration of the CC issue and mechanisms for implementation; participatory methods; revision to determine the mandate for LGUs / regional level; mechanism for harmonization of sectoral priorities under the influence of CC; appropriate regulation of all key sectors; introducing mechanisms to stimulate initiatives of civil society	1-5 yrs	State budget	Formal integration of CC policy in sectoral policies	December 2014- SUP; Crisis Management; SEA and LEAP; Law on Building; 2015 - LSG Law; inter-municipal cooperation; 2016 - Energy, Transport; 2017- other sectoral laws	Ongoing	Amendments to the SUP Law revised and adopted; amendments to the laws governing all key sectors (Environment, Construction, Industry, Transport, LSG) reviewed and adopted	Central government in collaboration with local governments; to discuss opportunities for a regulatory function of municipalities regarding mitigation and adaptation (municipal buildings and building units - EE and energy characteristics; green buildings; cooling / heating; waste disposal and emissions of methane; water management) regulation of land use - Legislation that would allow jurisdiction for LGUs to reduce GHG emissions regarding issues under their direct jurisdiction (space and land use and utilities)
Establishment of a local / regional inventory of GHG	Mid-term	LGUs; IMC	Mechanism for the collection and dissemination of data from local area / environment media monitoring; data on emissions from B installations; type and volume of waste; records of energy consumption in local public buildings and street lighting; number and type of vehicles in the Municipality	1-5 yrs	State budget; local budget; grants	Accuracy of data regarding CC scenarios during planning	December 2014 – in phases	Ongoing	Introduction of a system for recording greenhouse gas emissions at local and regional levels	LGUs; central government in cooperation with LGUs; a mechanism for transfer of data; as recommended by the COP UNFCCC

Priority	Type	Jurisdiction	Description	Timeline	Funding	Goals	From	To	Indicator	Note
Local Plan for Climate Change	Mid-term	LGUs; IMC	Concrete measures and activities at the central level concerning the Municipality in accordance with local interest in adaptation; Law on CC	3-5 yrs	Environment Investment Programme; local budget; subsidies	Mitigation; adaptation	December 2015	Ongoing	Preparation and adoption of a Local Plan to address climate change	Revision of sectoral planning documents in terms of CC; (LEAPs, UP, SEA, IPCC)
Methodology for assessment of local vulnerability and features	Short-term	Central government	Unification of methods and procedures for assessment	1-3 yrs	State budget; grants	Mitigation	December 2013	December 2013	Methodology for assessment of local vulnerability adopted	Central government; according to the COP UNFCCC Methodology
Assessment of local vulnerability and features	Short-term	LGUs; IMC	To determine the vulnerability of the local population and economic activity and infrastructure by sectors (assessment of local infrastructure and adaptive capacity in the case of extreme events (energy, transport); need for adaptability in land use; assessment of the harmful effects of waters at local level	1-3 yrs	Environment Investment Programme; local budget	Mitigation	December 2015	December 2018	Local vulnerability assessment performed	To determine the most vulnerable areas 1–3 and prepare risk maps for CC

Priority	Type	Jurisdiction	Description	Timeline	Funding	Goals	From	To	Indicator	Note
Assessment of GHG sources and sinks	Short-term	Local level: IMC	To establish a local system of GHG records	1-3 yrs	Environment Investment Programme; local budget	Adaptation	December 2015	December 2018	Assessment of GHG sources and sinks performed locally; Record system established	Establishment of local - regional GHG inventory; in the sectors of energy, transport, industry; registration of GHG sinks at local / regional levels and their capacity
Setting priorities for CC (adaptation, mitigation)	Mid-term	LGUs; IMC	Priority on policies determined by CC Law; cost-effective; greatest reduction in emissions and risks and negative effects	3-5 yrs	Environment Investment Programme; local budget; subsidies	Mitigation; adaptation	December 2015	December 2020	Adoption of a Local Plan for CC	Determining local priorities in accordance with CC Law; setting local / regional targets for mitigation / adaptation; determining adaptation priorities in compliance with risk maps; ensuring participation of people with legal and other interests; data to be standardized and linked to the national inventory method
Integration of local priorities in sectoral local / regional planning documents	Mid-term	LGUs	Integration of priorities in LEAPs; UPs; EE Programmes; Waste Management Plan; River Basin Management Plan; Programme for Water Supply and Waste Water Collection and Programme for Protection from Harmful Effects of Water; Protected Area Management Plan; Plan for Protection and Rescue	3-5 yrs	Environment Investment Programme; local budget; subsidies	Integration of CC mitigation and adaptation issue in sectoral planning documents	December 2015	December 2020	Revision of documents: LEAPs; EE Programmes; Waste Management Plan; Programme for Water Supply and Waste Water Collection and Programme for Protection from Harmful Effects of Water; Protected Area Management Plan; Plan for Protection and Rescue	In phases by sectors
Implementation of local actions for dealing with CC	Long-term	LGUs	Review of sectoral planning documents in accordance with Law on CC	-	Local budget; subsidies	Mitigation; adaptation	December 2015	Ongoing	Implementation of local actions	To consider and assess opportunities for sectoral implementation through direct services and public - private partnership

2. Energy

Priority	Type	Jurisdiction	Description	Timeline	Funding	Goals	From	To	Note
Energy efficiency	Short-term	LGUs; central government	Planning energy savings in public buildings and street lighting; increasing the use of renewable energy sources	1-3 yrs	Local budget	Mitigation	December 2013	December 2014	/
Ensuring the energy performance of buildings	Short-term	LGUs; central government	By issuing building permits for B category buildings; inspection measures	1-3 yrs	Local budget; RM Budget	Mitigation	December 2013	December 2014	/
Revision of the Energy Efficiency Programme	Mid-term	LGUs / IMC	Integration of CC mitigation and adaptation in the EE Programme; planning energy savings; increasing the use of renewable energy sources	3-5 yrs	Local budget; subsidies	Mitigation	December 2015	December 2020	After setting the local / regional EE targets
Promotion of energy efficiency and use of renewable energy sources	Mid-term	LGUs; central government	Local / regional EE campaigns; introduction of services for businesses and citizens to promote energy efficiency; introduction of financial instruments (incentives, grants and subsidies, loans) and administrative measures to stimulate energy efficiency and use of RES	1-3 yrs	Local budget; RM Budget	Mitigation	December 2013	December 2016	In cooperation with the central authorities

3. Transport

Priority	Type	Jurisdiction	Description	Timeline	Funding	Goals	From	To	Note
Revision of planning documents for transport / Urban Plans	Mid-term	LGUs / IMC	Integration of CC mitigation and adaptation; cooperation with central government to introduce fiscal instruments	3-5 yrs	Local budget; subsidies	Mitigation	December 2015	December 2020	To reduce the need for transport; introduce pedestrian zones and public transport; introduce infrastructure for alternative forms of transport; introduce fiscal instruments to restore the use of road infrastructure
Promotion of public transport and alternative forms of transportation	Mid-term	LGUs / central government	Local / regional campaigns; introducing the AFT	3-5 yrs	Local budget; RM Budget	Mitigation	December 2013	December 2016	In cooperation with the central authorities

4. Waste

Priority	Type	Jurisdiction	Description	Timeline	Funding	Goals	From	To	Note
Prevention of waste generation	Mid-term	LGUs	Introducing measures for recycling and reuse of waste in LGUs; implementation of local campaigns to prevent waste generation; in public procurement - recycled materials	3-5 yrs	Local budget	Mitigation	December 2013	Ongoing	To introduce other measures for prevention of waste generation
Investment in installations for recycling and composting of waste	Long-term	IMC/ central government	Measures to stimulate private investment	-	Central budget; grants; private investments	Mitigation	2015	-	/
Regulating the capture and combustion of methane from landfills	Long-term	IMC/ central government	Regulatory measures; fiscal measures	-	Central budget	Mitigation	2015	-	/
Promotion of PPP regarding waste and use of recycled products	Mid-term	LGUs / central government	Local / regional campaigns	3-5 yrs	Local budget; RM Budget	Mitigation	December 2013	December 2016	In cooperation with the central authorities

5. Spatial and urban planning

Priority	Type	Jurisdiction	Description	Timeline	Funding	Goals	From	To	Note
Revision of the legal framework on SUP and Construction Law	Short-term	Central government	Amendments to the Law on SUP and integration of the issue in UP; ensuring participation; SUP data; determining the stage of SUP for integration of CC; Law on Construction - building standards; powers to LGUs; standards for building permits to implement in SUP	1-3 yrs	Central budget	CC integration in UP; mitigation / adaptation	December 2014	December 2015	With the participation of LGUs
Training in how to use the findings about CC in spatial and urban planning (SUP)	Short-term	Central government	/	1-3 yrs	Central budget	Strengthening the capacity and knowledge of local administration	December 2014	December 2015	With the participation of LGUs
Integration of the issue in UP	Mid-term	LGUs ; IMC; central government	Concrete measures and activities at central level concerning the Municipality in accordance with local interest in mitigation and adaptation and in accordance with the 3rd CCR	3-5 yrs	Environment Investment Programme; local budget	Integration of CC in UP; mitigation / adaptation	December 2015	Ongoing	Revision of UP and documentation in terms of CC; IMC on the impacts on the areas surrounding municipalities
Adopting UP for the whole area	Mid-term	LGUs ; IMC	/	3-5 yrs	Environment Investment Programme; local budget	Integration of CC in UP; mitigation / adaptation	December 2015	Ongoing	Revision of UP and documentation in terms of CC; IMC on the impacts on the surrounding areas of municipalities
Alignment of UPs with the existing infrastructure	Mid-term	LGUs	Align UPs to comply with the actual situation	3-5 yrs	Local budget; Environment Investment Programme	Integration of CC in UP; mitigation / adaptation	December 2015	Ongoing	IMC on the impacts on the areas surrounding municipalities and identification of inter-municipal issues and actions

6. Crisis management; protection and rescue

Priority	Type	Jurisdiction	Description	Timeline	Funding	Goals	From	To	Note
Revision of the legal framework on protection and rescue (PR)	Short-term	Central government	Integration of the issue in UP; providing participation and financial instruments for implementation; preparation of risk maps for CC and vulnerable groups; revising the role of municipalities; establishing a mechanism for better coordination of LGUs with central government	1-3 yrs	Central budget	Integration of CC in UP; mitigation / adaptation	December 2014	December 2015	With the participation of LGUs
Training in how to use the findings about CC in SUP	Short-term	Central government	/	1-3 yrs	Central budget	Strengthening the capacity and knowledge of local administration	December 2014	December 2015	With the participation of LGUs
Integration of the issue in local / regional PR plans	Mid-term	LGUs ; IMC; central government	Concrete measures and activities at the central level concerning the Municipality in accordance with local interest in adaptation and in accordance with the 3rd CCR	3-5 yrs	Environment Investment Programme; local budget	Integration of CC in UP; adaptation	December 2015	Ongoing	Revision of UP and documentation in terms of CC; IMC on the impacts on the areas surrounding municipalities
Revision of PR plans	Mid-term	LGUs	Alignment of plans with the current situation; preparation of risk maps and implementation measures	3-5 yrs	RM Budget; local budget	Integration of CC in UP; adaptation	December 2015	Ongoing	IMC on the impacts on the areas surrounding municipalities and identification of inter-municipal issues and actions

IX. Results and conclusions from the closing event

The national forum "Assessment of the Local Action for Coping with Climate Change" was held at the Gate Macedonia in Skopje on 6 December 2013 (Friday). The aim of the Forum was to present the findings of the survey "Assessment of local governance in preventing the negative impact of climate change" and with the recommendations to jointly shape the assessment of the capacities of the local self-government units in the two planning regions and of the other stakeholders at a local level for coping with climate change. The event was attended by representatives from the ministries of environment and physical planning and local self-government, the centres from the two planning regions, the municipalities from the region, the institutions competent for protection of environment, communal activities, urban planning or protection of citizens, NGO sector and UNDP's expert team that carried out the survey. The representatives of all the relevant stakeholders at the workshop were familiarised with the final findings from the implemented survey and they validated them by discussing them and reviewing them.

In the course of the Forum the local experts that were hired by UNDP presented their draft reports that resulted from:

- the survey "Assessment of local governance in preventing the negative impact of climate change";
- the analysis of the vulnerability assessment of the agricultural sector(viticulture) in the Vardar Planning Region; and
- the economic feasibility study on the proposed modular climate change scenarios in viticulture.

There was also discussion in regard to the recommendations about the need to amend the laws and the bylaws, as well as the methodologies in order to incorporate the CC issue (especially the regulations on spatial and urban planning and the methodologies for preparing urban plans, local environmental action plans for waste management, CEA, water management, etc.).

The conclusion from the Forum is that a training programme needs to be developed for the local administration aimed at integrating CC into the planning process. Furthermore, one of the conclusions from the workshop was that a top-bottom matrix should be developed of all the relevant documents that will help in determining what an activity for coping with climate change should incorporate and in assessing its compliance.

The forum confirmed the findings that resulted from the survey concluding that the recommendations could be used.