LIFE SEC ADAPT PROJECT

Upgrading Sustainable Energy Communities in Mayor Adapt initiative by planning Climate Change Adaptation strategies

POLICY RECOMMENDATION PAPER ON CROSS-BORDER CLIMATE ADAPTATION

Region of Istria

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1. Why Policy Recommendations?

This document was developed in the context of the LIFE SEC ADAPT project, which was funded by the LIFE Programme 2014 – 2020 under the priority Climate Change Adaptation. As part of the Component C of the project: Implementation Actions, and in particular Component C.3: Adoption of Local Climate - adaptation strategy and plans through SEAP integration, the Policy Recommendations Paper aims at raising the awareness of national and European policy makers, enhancing their support to climate change issues.

A **policy** is a course or a principle of action adopted or proposed by an organisation or an individual with the aim of assisting in decision-making. It is, fundamentally, a discussion about what is being done or should be done to solve a problem or address an issue. A **policy recommendation** is written policy advice prepared for some group or person that has the authority to make or to influence policy decisions. Its purpose is to inform people who are faced with policy choices on particular issues about how research and evidence can help to make the best decisions.

While the above statements are fairly general, the main premises of these statements could be easily adapted in the context of the urban climate change adaptation efforts. There is an extremely wide range of urban adaptation policy options that could be implemented relevant to the specific urban context, in terms of its physical, environmental, socio-economic, institutional and other conditions. The European Climate Adaptation Platform (Climate-ADAPT) offers a wide range of these options. This paper focuses, however, on several policy recommendations that could be easily implemented in all urban settings that characterise the SEC ADAPT project. Furthermore, this paper rests on the assumption that the recommendations are part of the wider adaptation policy framework, i.e. the structured process for developing adaptation strategies, policies, plans and measures to enhance and ensure urban development in the face of climate change.

The purpose of the document is:

- to inform decision-makers about adaptation policies to be undertaken in the cross-border context,
- to provide rationale for choosing a particular policy course of action,
- to describe policies briefly, and not to give a detailed account of specific policies.

The policy recommendation paper rests on the assumption that the recommendations are an integral part of a wider adaptation strategy and action planning process.

What does ”cross-border“ mean in this policy context? There is no assumption of a spatial continuity between the groups of municipalities in the neighbouring countries (Italy, Croatia), but only within the municipalities inside a certain country or a region (Istria, Marche, etc). Therefore, the document does not discuss the specific cross-border (international) climate change impacts. Furthermore, the policy recommendations proposed in this paper are of the “process” nature, i.e. they are mainly related to the institutional and capacity building aspects of climate change adaptation, and do not relate to the physical aspects of adaptation. That is, the proposed recommendations are those that could be easily applied in all municipalities participating in the project, as well as beyond that, i.e. in other similar regions and countries.

Having the above in mind, the proposed recommendations could still be considered as “cross-border” and implemented in the project regions, or in the Adriatic-Ionian region, even if they do not border each other physically. Also, proposed policy recommendations could stimulate implementation of joint actions by participating municipalities. Finally, proposed policy recommendations have to be closely linked with the proposed adaptation strategies and action plans.

The policy horizon is related to the period of time over which a particular policy is planned to be implemented. This may not be on the same time scale as a planning horizon. For instance, the infrastructure affecting an activity will have an engineering life of many decades, but the policy horizon governing the operation of that infrastructure may be much shorter. Most natural resource policies are implemented over periods of 5 to 15 years and are reviewed or updated over time but are expected to manage resources over a much longer planning horizon (ISPRA, 2014).

Target audience of the proposed recommendations is:

- senior decision makers, to whom some basic policy issues have to be explained,
- technical experts who are familiar with the basic issues, but not to understand the political context where the policies will be implemented,

- other stakeholders (general population, NGOs, private sector, etc.) who can make pressure groups for the implementation of certain policies.

Urban climate adaptation policies are also closely linked with the relevant Sustainable Development Goals (SDGs), and in particular:

- **SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable (Target 11.b: By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels), and**
- SDG 13: T**ake urgent action to combat climate change and its impacts.**

2. Urban context and importance of municipal climate change adaptation

Roughly half of the world's population lives in cities, and that proportion is forecast to rise to 70% by mid-century. Urban areas consume two-thirds of the world's energy. They are vulnerable to the effects of climate change, such as flooding, so the cost of inaction is all too tangible. A survey by 100 Resilient Cities, a network of conurbations, found that climate change is the third-biggest concern among its members, behind inequality and ageing infrastructure.

Urban areas have particular sensitivities to climate change, and therefore adaptation to a warming planet represents a challenging new issue for urban policy makers in both the developed and developing world. The city scale is especially relevant for climate policy. Although cities cover around 1% of the Earth's surface, they produce about 80% of gross world product, consume about 78% of the world's energy and produce more than 60% of all CO_2 emissions.

Adaptation to climate change is considered, along with mitigation (i.e. reduction of net greenhouse gas emissions), the second important pillar of the implementation of climate policy, which is in the function of preserving the values of society, the environment and the economy and ensuring the sustainable development. Therefore, adaptation is a necessary

complement to mitigation in addressing climate change. IPCC defines adaptation as "…adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts. It refers to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change" (Smit and Pilifosova, 2001).

Cities are playing a vital role in the global response to climate change by curbing their greenhouse gas emissions and adapting to the effects of a changing climate. Though climate change is a global problem often discussed at the national scale, urban areas are increasingly seen as having a distinct role, and distinctive motivation and capacity, for adaptation. In addition to global disasters, urban areas have unique climate risks (e.g., urban heat island, impervious surfaces exacerbating flooding, coastal development threatened by sea level rise, etc.) In addition, urban areas also house a majority of the world's population and are global economic hubs, thus exposing many assets to climate change hazards Local governments are central to these efforts. They lead climate action by framing strategies and programmes, integrating such actions into ongoing urban development, and forging the partnerships necessary for effective climate responses.

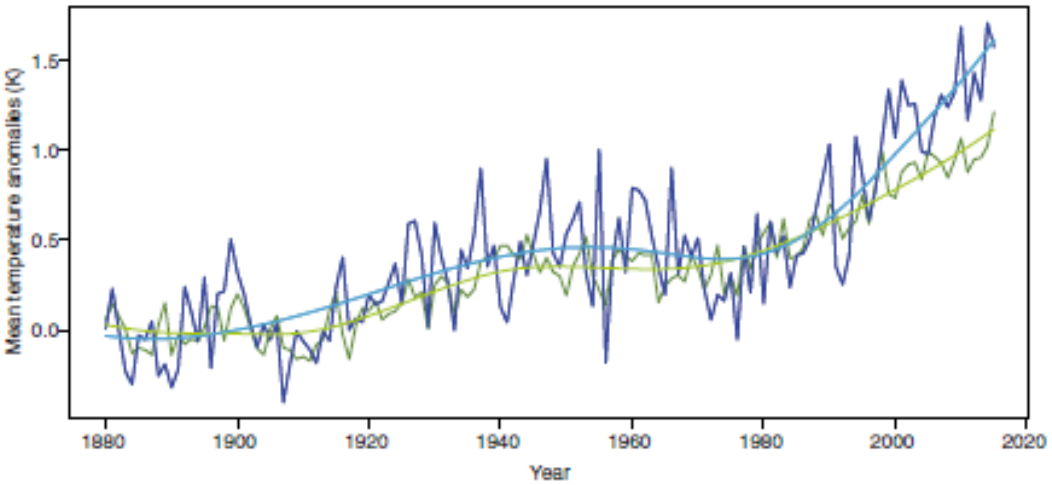
Urban areas also present unique adaptation opportunities. Cities stand to benefit from climate-friendlier policies. New research presented in San Francisco by the C40 group of big cities and the Global Covenant of Mayors, which groups more than 9,000 municipalities, finds that climate policies such as boosting energy efficiency and decarbonising public transport and power generation could create 14m new jobs and prevent 1.3m premature pollution-related deaths a year by 2030 (The Economist, 2018).

Despite the growing interest in urban adaptation, many barriers to successful adaptation planning and implementation persist. For instance, lack of public opinion and the public's perception of risk can constitute a political barrier. Related to issues with mobilizing public opinion, another barrier identified is the lack of mainstreaming adaptation planning. There is also a lack in understanding tradeoffs and impact to vulnerable populations. Thus, social inequality is often cited as a major barrier to effective adaptation.

3. Vulnerabilities and risks in the project regions

Risk and Vulnerability Analysis (RVA) is a crucial first step in the adaptation planning process. It has been the subject of one of the earlier SEC ADAPT Project activities (C2) and specific guidelines have been prepared for that purpose (Methodology for Vulnerability and Risk Analysis in Regions Marche and Istria). Both regions, Marche and Istria, have prepared their vulnerability and risk assessment studies.

Both project areas are part of the wider Mediterranean region. It is expected that the climate change trends that are expected in the Mediterranean could also be applicable in those two areas. Future warming in the Mediterranean region is expected to exceed global rates by 25%, notably with summer warming at a pace 40% larger than the global mean. Even for a 'Paris-compliant' global warming of 1.5 °C, a 2.2 °C increase in regional daytime maxima is likely (see figure below). This increase is expected to be associated with more frequent high-temperature events and heatwaves. In the eastern Mediterranean, heatwave return periods may change from once every two years to multiple occurrences per year. The Mediterranean region is regularly affected by flash floods, which are a consequence of short and local heavy rains in small catchments, many of them near the coast in densely populated areas. Flood risk, associated with extreme rainfall events, will increase due to climate change, but also due to non-climatic factors such as increasingly sealed surfaces in urban areas and ill-conceived storm-water management systems (Cramer *et al,* 2018).



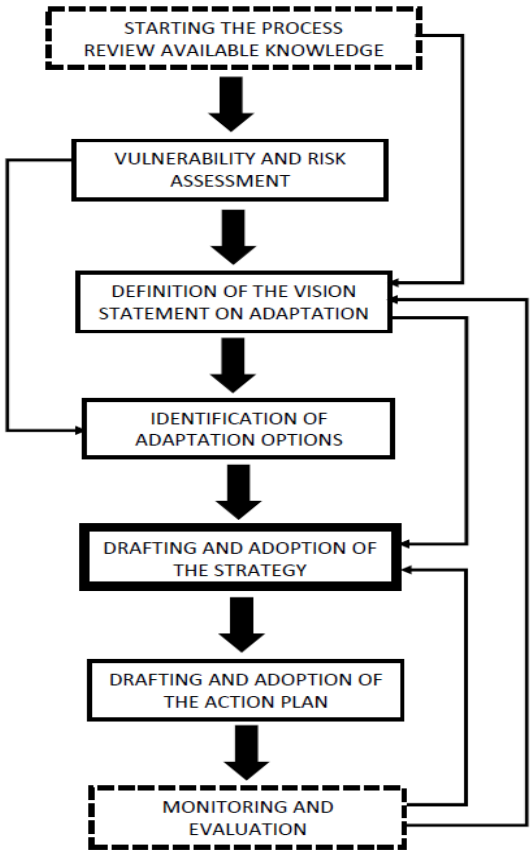
The Vulnerability and Risk Analysis for the region of Istria identified four major sectors that will be affected by climate change in the future: health, tourism, water supply and water

quality, and ecosystems and biodiversity. The assessment has shown that these sectors' vulnerability falls within the middle range.

The Vulnerability and Risk Analysis for the region of Marche identified the following sectors as most at risk: biodiversity, territory, coastal areas, health, agriculture, energy and infrastructure, and tourism. The assessment has shown that most of the sectors' risk lies within the medium range. However, the risk is rising, in long term, for the coastal areas (sea level rise) and tourism.

4. Visions, strategies and plans

The Common Methodology for Drafting of the Climate Change Adaptation Strategy at Municipal Level (prepared as an activity in Component C.3 of the project) proposes that the process of the preparation of adaptation visions, strategies and action plans (see figure below) is sequenced as follows:



1. **Vulnerability and risk assessment:** critical precondition that informs the decision makers and other stakeholders of the severity of the climate change issue and the risks that they may face in the future.
2. **Definition of the Vision Statement on adaptation:** the moment when decision is taken what is it that the stakeholders would like to do and how they intend to cope with the challenge of climate change in their area. This decision also entails definition of the goals and objectives.
3. **Identification of the adaptation options:** it includes identification and selection of options. Based on the vulnerability and risk assessment, and a desired future that the city wants to achieve, the stakeholders explore options within a framework of adaptation scenario and embark on prioritisation and selection of the option that will best fit their vision as well as available resources to undertake action.
4. **Drafting and adoption of the Strategy:** the most critical activity because it entails definition of steps that need to be taken toward achieving resilient cities that will be able to cope with the climate change challenges. Development of the strategy is a consensus building process that has to correspond to the main principles of governance. The strategy results in recommendations and measures to be taken.
5. **Drafting and adoption of the Plan:** follows the Strategy and covers shorter periods with detailed actions that are embedded in the recommendations and measures proposed by the strategy.

All municipalities participating in the LIFE SEC ADAPT project have undertaken the process and have been steadily developing their urban visions and strategies, which will, in due time, result also in the respective climate adaptation action plans. Each strategy will be taking in consideration the local urban physical and developmental context as well as the results of the specific regional vulnerability and risk analyses.

Each strategy will outline a specific set of policies that will be aimed at adapting to the expected impacts of climate change in the future. The first draft of the general policies will be outlined during the phase 3 of the process (Identification of the adaptation options), and further refined and adopted during the phase 4 of the process (Drafting and adoption of the strategy). The first phase of the policy implementation will be presented in detail in the respective action plans (phase 5 of the process).

Most of the adaptation policies will be site-specific, i.e. they will be dealing with specific physical issues of each municipality, and they could differ widely from place to place depending on the identified vulnerabilities and risks and vision and strategy adopted at the local level. The proposed policies at the site-specific level should also abide to some or all of the following general principles:

- **Multidimensionality**: climate adaptation is not a separable policy, but it is integrated into other policies,
- **Interdependency**: coordination of adaptation across spatial scales (inter-urban; intra-urban), sectors and jurisdictional boundaries,
- **Inter-temporality**: dynamics of adaptation, which evolves over time,
- **Avoidance of conflicts**: policies should not be conflicting; solving one issue should not create problems elsewhere,
- **Flexibility**: dealing with changing risks, and permanently identifying critical vulnerability thresholds,
- **Climate policy integration**: incorporation of the aims of climate change adaptation into all stages of policy-making in other policy sectors (non-environmental as well as environmental); policy integration can be divided into horizontal policy integration and vertical policy integration within and across governmental levels,
- **Adaptation measures**: no regrets, low regrets, win-win, adaptable measures,
- **Policy review**: needs to be done regularly,
- **Cross-border aspects**: policies need to have a wider territorial scope,
- **Cooperativity**: working in partnership with the community,
- **Scientific approach**: based on accumulated knowledge, use of latest scientific findings, but also building on local knowledge of climate variabilities and likely local impacts.

The purpose of this Policy Recommendation Paper is to propose those policies that could be implemented by all municipalities involved in the SEC ADAPT Project, but also by other interested municipalities, notwithstanding their physical and developmental characteristics as well as the identified site-specific vulnerabilities and risks. For that reason, the recommended policies fall in the category of "soft" adaptation policies. "Soft" policies can be defined as policies that rely on voluntarism, learning processes and procedural change as opposed to those that are called "hard", which impose direct regulatory control (Hertin *et al.*, 2004). From that perspective, "soft" policies are more feasible and can be more easily implemented as they do not usually require considerable financial resources, long preparation time and decision to implement them are usually taken on a consensual basis.

With the above in mind, the following five policy recommendations are proposed:

- **Recommendation No. 1**: Capacity development for better adaptation to climate change
- **Recommendation No. 2**: Raising awareness among major municipal stakeholders
- **Recommendation No. 3**: Improved communication on major aspects of climate change adaptation in urban areas
- **Recommendation No. 4**: Exchange of experiences, best practices and lessons learned among municipalities
- **Recommendation No. 5**: Science to policy integration in urban climate change adaptation

5. Policy recommendations for urban climate change adaptation

Major objective of urban climate change adaptation policies is to increase resilience of urban areas to expected impacts of climate change. Urban resilience, being defined as "…the capacity of individuals, communities, institutions, businesses and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience"[1], is somewhat more comprehensive notion than urban adaptation, but the latter constitutes the central component of the former.

[1] www.100resilientcities.org

5.1. Capacity development for better adaptation to climate change

Capacity building is one of the most important imperatives to achieve efficient urban adaptation to climate change. While many disciplines excel in their specific sectoral technical competence, very often they lack knowledge on specific issues related to climate change, its development and expected impacts. This is especially relevant, among other, for urban planning, which has often overlooked impacts that planning solutions, such as land use, might have either on causing negative climate impacts (transportation, infrastructure, etc.) or failing to adapt to expected impacts of climate change (planned urban development close to the coastline disregarding, thus, impacts of sea level rise, for example).

Urban planners and decision-makers need to integrate efforts to mitigate the causes of climate change (mitigation) and adapt to changing climatic conditions (adaptation). Actions that promote both goals provide win-win solutions. Urban planning and urban design have a critical role to play in the local response to climate change. Actions that simultaneously reduce greenhouse gas emissions and build resilience to climate risks should be prioritized at all urban scale: metropolitan region, city, district/neighborhood, block, and building. This needs to be done in ways that are responsive to and appropriate for local conditions.

To this purpose, it is of utmost importance that the technical capacity of urban planners be increased, which will improve their ability to cope with adapting to impacts of climate change. Land-use planning tools are particularly important to reduce vulnerability to climate change and, in particular to extreme-weather events, which have been raising in recent years both in frequency and in intensity. These tools should help planning human settlements, regulate land use and provide citical infrastructure and services in a way that takes into account risks and builds resilience, including climate resilience. Planners should be tought to integrate climate change and resilience aspects in local urban plans, as well as how to achieve linkages between local and regional plans in relation to adaptation to climate change, as well as to prepare the disaster management plans and integrate them with local development policies.

5.2. Raising awareness among major municipal stakeholders

Urban adaptation of climate change is a long-term process that requires measures to be taken today, while the direct positive impacts of these actions could be felt only in the distant future. What is more important, some measures will have to be financed immediately. Having in mind the dynamics of political systems, the discrepancy between actions being taken (now), financing utilized (now) and effects visible (in the future) is obvious. For that reason it is important that the awareness on the need for adaptation to climate change be raised, not only for political structures but even more important, for the general population. All the stakeholders have to support the adaptation actions and they have to be aware of the risks of not taking action.

Local authorities should make public-high level commitment to tackle climate change; this commitment should recognize the need for concrete action by setting measurable targets. Local strategic partnership should be built by bringing the public, community, private and civil society sectors to improve adaptation efforts. Simple information platforms aimed at general population should be developed. These platforms should avoid using highly technical language and should make the most important facts about climate change adaptation understandable to the widest range of users. Finally, thematic campaigns and events should be organised, illustrative brochures printed and other awareness raising materials developed and disseminated.

5.3. Improved communication on major aspects of climate change adaptation in urban areas

Climate change is a complex issue. The complexity of the issue makes it difficult to understand, and it often causes controversy. Improved communications efforts are needed to significantly raise the level of awareness of the community of the opportunities and threats brought about by climate change, and to accept their responsibilities to adapt to, and mitigate against its impacts. It is also important to recognise the potential conflicts that exist between the long-term changes climate change will bring and the short-term priorities that individuals and organisations may have. The current situation is that while the issue of climate change has finally arrived on the agenda of most municipal decision makers, it is still a far cry from being a notion that most ordinary citizens are comfortable with.

The climate change messages need to be clearly communicated, and they may include, *inter alia*, the following references: the climate change is real and the effects are long-term; it is possible to adapt to the impacts climate change will bring; there are risks to the "do-nothing" option, etc. (ESPACE, 2006)

Those responsible for communication efforts at the municipal level should utilize mechanisms such as: promoting credible sources of information; preparing and utilising material on climate change; integrating the climate change issue in related communications; responding to questions and requests for information from the community; proactive outreach to community groups and leaders. It is also vital that champions from within the corporate sector and community leaders are identified and educated of the importance of climate change and the actions that they and others can take to adapt to this global environmental problem.

A system for sharing and communicating projections of downscaled climate data - for both sudden and gradual climate change - to support better local planning should be developed. Early warning systems for climate hazards should be developed and crisis response management capacity should be improved. Finally, the issue of climate change should be embedded in respective curricula of public education.

5.4. Exchange of experiences, best practices and lessons learned among municipalities

The capacity of urban areas to adapt to the consequences of climate change is often affected by their ability to manage a shared body of knowledge on which the decision-makers base their discussions about possible solutions and create consensus and cooperation (best-practice transfer). The municipal capacity to adapt to climate change may also be affected by the learning process through which the responsible and interested parties create and review their strategies (policy transfer). Finally, cities' adaptation ability may be affected by their capacity to manage the dynamics of political processes, at trans-national and sub-national levels, that affect the governance of climate change in urban areas (governance capacity). The three aspects of urban adaptation should be enhanced by an efficient system of exchange of experiences**,** best practices and lessons learned among municipalities.

In order to effectuate the above, the existing regional networks for urban climate change adaptation should be expanded and new networks formed. This should foster interregional

and cross-border technology transfer as well as share the best practices and lessons learned in urban adaptation among areas that might provide a current spatial analog, where possible.

5.5. Science to policy integration in urban climate change adaptation

Implementation is an important aspect of adaptation to climate change. It largely rests on the science and research and the process that transfers scientific results to policy is a critical element of success of urban climate change adaptation strategies and action plans. In this respect, enhancing local level institutions to make them capable of carrying out science-to-policy integration is crucial. These efforts may include capability to transfer the successful cases, replicate successful practices among cities and regions and manage the innovation in the adaptation "sector". One of these innovations is the so-called Nature Based Solutions (NBS). Nature-based solutions are an essential part of the strategy in order to address climate change. They constitute a sustainable and economically viable alternative, often more cost effective in the long term than technology investments or the construction and maintenance of infrastructures (IUCN, 2016).

Other measures that could be taken at the municipal level are:

- Improve monitoring of climate trends and build data collection systems;
- Promote research into the risks associated with impacts of climate change and other hazards in urban areas (this could be carried out as a joint cross-border initiative);
- Promote preparation of multi-hazard assessments, as part of a more comprehensive local-level climate change vulnerability assessments, on a regular basis;
- Mapping of hazards and risks, etc.

6. Next steps

The implementation of the policy recommendations will depend on the existing capacities as well as willingness in each municipality. However, the very fact that the municipalities have participated in the SEC ADAPT project is a proof that they will be willing to undertake measures proposed by the policy recommendations. Since these recommendations do not require financial resources that are beyond the reach of the municipalities concerned, it is reasonable to assume that the implementation can start soon after the project will be officially over. Specific tasks related to each policy recommendation could be as follows:

- Recommendation 1: training courses for urban planners on general aspect of climate change adaptation as well as specific courses on technical subjects; development of guidelines and toolkits on local adaptation planning specific for the project regions.
- Recommendation 2: organising partnerships between public and private sector; choosing “champions” (respected local persons with a good track record in promoting adaptation to climate change or good results in doing so) to promote adaptation to climate change impacts.
- Recommendation 3: using local media to inform population on the benefits of early adaptation to climate change; printing leaflets for the general population.
- Recommendation 4: twinning between municipalities to exchange of experience on urban adaptation subjects; participation of experts from one municipality in the concrete planning actions in another municipality; building networks of municipalities.
- Recommendation 5: prepare studies to show how nature based solutions could be beneficial to adaptation; showcase examples where economic benefits of adaptation are clear; define set of minimum parameters to monitor progress towards adaptation.

Basic references:

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