

## Reading guide

### Urban adaptation to climate change in Europe 2016

The EEA report, *Urban adaptation to climate change in Europe 2016* (12/2016), is comprehensive but it is not designed to be read cover-to-cover. As such, different stakeholders might want to focus on different aspects of it. This reading guide, which includes additional information sources, recommends **two ways to approach the report**:

1. The contents overview and **Chapter 1** of the report provide an idea of what information different stakeholder groups can expect to find and where to find it. The executive summary and the conclusions provide a short cut to the main findings.

or

2. The **most common questions** that stakeholder groups might have are included in a list in this reading guide. Links to the relevant parts of the report are included for each question, as are links to other pertinent sources containing information connected with the report.



[Local governments](#)



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## Local Governments:

### Why should I be concerned about climate change impacts and adaptation? Is my city at risk? Why is adaptation complementary to mitigation? Must we act immediately?

#### In this report:

Chapter 2, *Climate and urban Europe — changes ahead*, highlights how climate change is actually affecting cities in multiple ways (Section 2.2). It describes both observed and projected changes for the different climatic regions in Europe (Figure 2.2) and illustrates interaction with other global megatrends (Figure 2.1).

Chapter 3, *The road to adapt and transform cities into attractive, climate-resilient and sustainable places*, describes different strategies for urban climate change adaptation (especially Table 3.1), and points to the importance of integration of climate mitigation and adaptation at city level.

#### Further resources:

Within the Climate-ADAPT Platform (<http://climate-adapt.eea.europa.eu>), the Urban Adaptation Support Tool (UAST) provides further insight on the reasons for cities to adapt in the first step of the adaptation cycle (“getting started”) (<http://climate-adapt.eea.europa.eu/adaptation-support-tool/why-adapt>).

The EEA map book, *Urban vulnerability to climate change* (<http://climate-adapt.eea.europa.eu/tools/urban-adaptation>), provides a set of interactive maps for exploring urban vulnerabilities in relation to climate change impacts. Chapter 2 of the first EEA report, *Urban Adaptation to Climate Change in Europe* (EEA Report 2/2012), describes, climate challenges and response options for cities

(<http://www.eea.europa.eu/publications/urban-adaptation-to-climate-change>).

The EEA report, *National Adaptation Policy Processes in European Countries*, (EEA Report 4/2014) describes key drivers for national intervention in climate change (Chapters 1 and 2)

(<http://www.eea.europa.eu/publications/national-adaptation-policy-processes/>).

The Covenant of Mayors Initiative on Adaptation to Climate Change describes the current situation in Europe and the necessity to adapt cities to climate change in the section on *Climate Change Adaptation in Europe*: [http://mayors-adapt.eu/wp-content/uploads/2015/07/Mayors-Adapt-background-information\\_updated.pdf](http://mayors-adapt.eu/wp-content/uploads/2015/07/Mayors-Adapt-background-information_updated.pdf).

Moreover, the New Integrated Covenant of Mayors for Climate Change and Energy provides a global view of the need to adapt immediately to climate change and the benefits of investing in complementary mitigation-adaptation action. This can be found in the section, *We, the Mayors, acknowledge that*: [http://mayors-adapt.eu/wp-content/uploads/2014/10/Commitment\\_EN\\_201015\\_FINAL.pdf](http://mayors-adapt.eu/wp-content/uploads/2014/10/Commitment_EN_201015_FINAL.pdf).

### How do cities address climate change adaptation? How is adaptation supported at other levels and how does research contribute?

#### In this report:

Chapter 2, *Climate and urban Europe — changes ahead*, describes the systemic challenge climate change represents for cities. Chapter 3 describes *The road to adapting and transforming cities into attractive, climate-resilient and sustainable places*. In particular, the last part of this chapter is dedicated to the integration of adaptation and mitigation. Chapter 4, *Urban adaptation action to date*,

provides an overview of the present state of urban adaptation.

Throughout the report, a wealth of different inspiring examples for successful local action are used. Annex 1, *List of cases*, provides a complete list of case studies illustrated in the report.

#### **Further resources:**

Chapter 4 of the EEA report, *Urban Adaptation to Climate Change in Europe* (EEA Report 2/2012), is dedicated to the relationship between different governance levels (<http://www.eea.europa.eu/publications/urban-adaptation-to-climate-change>).

Section 2.6 of the EEA report, *National Adaptation Policy Processes in European Countries* (EEA Report 4/2014), provides an overview of implementation issues and good practice related to adaptation policies at the national level (<http://www.eea.europa.eu/publications/national-adaptation-policy-processes/>).

The Climate-ADAPT Platform provides inspiring case studies on cities adapting to a changing climate. Search the database ([http://climate-adapt.eea.europa.eu/data-and-downloads/#review\\_state=published&sectors=URBAN&searchtype=ACTION](http://climate-adapt.eea.europa.eu/data-and-downloads/#review_state=published&sectors=URBAN&searchtype=ACTION)) or use the case study search tool (<http://climate-adapt.eea.europa.eu/knowledge/tools/sat>).

The Mayors Adapt website lists (i) European cities currently taking action in adaptation: <http://mayors-adapt.eu/taking-action/participating-cities/>; (ii) lists good examples of adaptation measures by cities: <http://mayors-adapt.eu/materials/case-studies/>; and (iii) provides information and examples on the City Twinning initiative: <http://mayors-adapt.eu/taking-action/city-twinning/>.

## **What is necessary to ensure effective adaptation to climate change? When should cities act?**

### **In this report:**

Chapter 3, *The road to adapt and transform cities into attractive, climate-resilient and sustainable places*, highlights the need for innovative forms of action, especially related to cooperation, involvement and appropriate governance.

Section 5.1 of chapter 5, *Governance for urban adaptation*, specifically addresses the national and regional support to local action and highlights the types of support different governance levels can provide.

Chapter 3, *The road to adapt and transform cities into attractive, climate-resilient and sustainable places*, focusses on integrating mitigation and adaptation, and on the potential synergies between different actions and the potential of cost-effective solutions.

Section 5.4 of chapter 5, *Economics of urban adaptation*, provides insights into strategies and experiences for assessing the costs and benefits of adaptation options and provides an overview on funding opportunities for cities. It illustrates the advantages of a systemic approach (Box 5.33 *Copenhagen, Denmark, combines incremental and transformational adaptation in a systemic approach based on an economic assessment*). With respect to the exchange of information and experience between cities, section 5.2 of chapter 5, *Building the adaptation knowledge base and awareness*, highlights the importance of knowledge exchange and networking between cities, showcasing the experience of Bratislava (Box 5.15 *The benefits of peer learning and city networking for adaptation in Bratislava, Slovak Republic*).

Section 5.5 of chapter 5, *Monitoring, reporting and evaluation*, describes the potential of monitoring and evaluation schemes for informing ongoing policy making and provides an overview of potential funding sources (Figure 5.9 *Opportunities for financing climate change adaptation in municipalities*).

All chapters of the report use a wealth of different inspiring examples of successful local action. Annex 1, *List of cases*, provides a complete list of case studies illustrated in the report.

**Further resources:**

Step 3 of the UAST on the Climate-ADAPT platform, *Identifying Adaptation options*, provides links to a list of inspiring urban case studies showcased on Climate-ADAPT (<http://climate-adapt.eea.europa.eu/adaptation-support-tool/step-3>).

Step 4 of the UAST provides suggestions and guidance for the assessment of possible adaptation options, including tools for assessing their cost-effectiveness (<http://climate-adapt.eea.europa.eu/adaptation-support-tool/step-4>).

The final step of the UAST provides guidance for the development of evaluation and monitoring schemes and the use of indicators (<http://climate-adapt.eea.europa.eu/knowledge/tools/adaptation-support-tool/step-6>).

Although it focuses on the national level, the EEA report, *National monitoring, reporting and evaluation of climate change adaptation in Europe* (EEA Technical Report 20/2015), provides further insight into key issues related to monitoring and evaluation (<http://www.eea.europa.eu/publications/national-monitoring-reporting-and-evaluation>).

The 2012 EEA report, *Urban adaptation to climate change*, and the 2014 EEA Report, *National Adaptation Policy Processes in European Countries*, both contain sections on monitoring and evaluation (EEA Report 2/2012, section 3.2.6; EEA Report 4/2014, Section 2.8.1) (<http://www.eea.europa.eu/publications/urban-adaptation-to-climate-change>; <http://www.eea.europa.eu/publications/national-adaptation-policy-processes>).

Furthermore, the Mayors Adapt website provides insights into the characteristics of cities participating in the initiative (<http://mayors-adapt.eu/materials/city-profile-fact-sheets/>) and into financing options for cities (<http://mayors-adapt.eu/materials/funding-for-adaptation/>).



## EU/global/national/regional institutions

### Why do cities matter in adapting my country and Europe to climate change?

#### This report:

Chapter 2, *Climate and urban Europe — changes ahead*, sets out *Key observed and projected climate change impacts for the main regions in Europe* (figure 2.2) and explains how important cities are for European climate resilience. The example of Dortmund illustrates this for the logistics sector (Box 2.1 *Possible knock-on effects of climate change impacts: an example from Dortmund, Germany*).

#### Further resources:

The EEA map book, *Urban vulnerability to climate change* (<http://climate-adapt.eea.europa.eu/tools/urban-adaptation>), provides a set of interactive maps for exploring urban vulnerabilities in relation to climate change impacts.

### How can regional, national and European policies support the transformation of cities into climate-resilient communities?

#### In this Report:

Chapter 4, *Urban adaptation action to date*, provides an overview and includes examples of good practice in the support provided at regional, national and European level with a view to enhancing local adaptation capacities and promoting urban adaptation.

Section 5.1 of chapter 5, *Governance for urban adaptation*, addresses the interplay between different governance levels, highlighting how urban adaptation has been integrated into national adaptation plans, and illustrating specific initiatives from European, national and sub-national governments.

#### Further resources:

Chapter 4 of the EEA report, *Urban Adaptation to Climate Change in Europe* (EEA Report 2/2012), is dedicated to the relationship between different governance levels (<http://www.eea.europa.eu/publications/urban-adaptation-to-climate-change>).

The EEA report, *National Adaptation Policy Processes in European Countries* (EEA Report 4/2014), highlights the need for horizontal and vertical coordination (<http://www.eea.europa.eu/publications/national-adaptation-policy-processes>).

The Mayors Adapt website summarises the main funding sources in Europe <http://mayors-adapt.eu/materials/funding-for-adaptation/>.

Furthermore, Step 0.5 of the UAST on the Climate-ADAPT platform provides a brief overview of European support sources <http://climate-adapt.eea.europa.eu/tools/urban-ast/step-0-5>).

### What are the adaptation challenges for cities?

#### In this Report:

Section 5.1 of chapter 5, *Governance for urban adaptation*, points to the necessity of institutional support in the context of a multilevel governance framework. Section 5.2, *Building the adaptation knowledge base and awareness*, highlights the importance of an increase in knowledge and capacity, while section 5.4, *Economics of urban adaptation*, includes a part on financing urban adaptation, further to an overview of *Opportunities for financing climate change adaptation in municipalities* (Figure 5.9) and *Examples of national activities to provide financial support for urban adaptation* (Box 5.32).

In Chapter 4, *Urban adaptation action to date*, the part on *Integration of adaptation and mitigation and other areas* provides an overview of the integration between adaptation strategies and other ongoing EU, national and regional urban policies and policy agendas.

Chapter 5 provides inspiring examples for existing innovative and effective governance frameworks and approaches. For example, it indicates a tool for the self-assessment of institutions — *The PACT framework for analysing organisational capacities* (Box 5.1) — which presents an analytical framework for the analysis of adaptive capacity, and *A regional and transnational approach to address flooding in Dresden, Germany* (Box 5.23).

**Further resources:**

Chapter 2 of the EEA report, *Urban Adaptation to Climate Change in Europe* (EEA Report 2/2012), describes the key challenges to a multi-governance framework to support urban adaptation (Sections 2.1.1, 2.2.1, 2.3.1) (<http://www.eea.europa.eu/publications/urban-adaptation-to-climate-change>).

## Where to find inspiration for the design of regional, national and EU action?

**In this Report:**

Section 5.1 of Chapter 5, *Governance for urban adaptation*, provides case studies on sharing responsibility for the development of adaptation options between national and local authorities (Cyprus, Box, 5.1). It also includes case studies on the support Norwegian authorities provide for mainstreaming urban adaptation (Box 5.3), and the interplay between national frameworks and local adaptation in Denmark, France and the United Kingdom (Box 5.4).

**Further resources:**

The *Local Action* part of the country pages in the Climate-ADAPT platform provides an overview of the way relations between different governance levels are designed in EEA member countries (<http://climate-adapt.eea.europa.eu/countries-regions/countries>). Choose a country and look up Local Action.



## Research and knowledge providers

### Why is urban adaptation an important research field?

#### In this Report:

Section 2.1 of Chapter 2, *Climate change is a systemic challenge for cities*, describes the need for innovation in cities and their transformation, which in turn entails the need for new knowledge.

Chapter 2, section 2.2, *Climate change is happening and affects cities in multiple ways*, describes existing knowledge and capacity gaps and the importance of knowledge creation for urban adaptation action with respect to climate change impacts.

Section 3.2 of chapter 3, *Transformational adaptation: a systemic approach turning challenges into opportunities*, illustrates which knowledge gaps exist in relation to transformative action.

#### Further resources:

The EEA report, *National Adaptation Policy Processes in European Countries* (EEA Report 4/2014), points to the need for awareness building and knowledge generation as key topics for adaptation planning and implementation (<http://www.eea.europa.eu/publications/national-adaptation-policy-processes/>).

The EEA report, *Urban Adaptation to Climate Change in Europe* (EEA Report 2/2012), discusses the need for local actors to access and understand scientific knowledge (Chapter 3), and on the need for multilevel knowledge (Chapter 4) (<http://climate-adapt.eea.europa.eu/tools/urban-adaptation>).

### How can research support urban adaptation?

#### In this Report:

Chapter 3, *The road to adapt and transform cities into attractive, climate-resilient and sustainable places*, illustrates approaches that offer solutions to enable the transformation of cities into resilient cities, ensuring economic growth and quality of life.

The vision of a transformation is illustrated in Box 3.3 *The vision: living in attractive, climate-resilient and sustainable cities of tomorrow — turning challenges into opportunities*.

Section 5.2 of Chapter 5, *Building the adaptation knowledge base and awareness*, provides insight into knowledge needs and capacity gaps with respect to transformative adaptation.

#### Further resources:

Section 2.2 of the EEA report, *National Adaptation Policy Processes in European Countries* (EEA Report 4/2014), points to the importance of knowledge for informing climate action (<http://www.eea.europa.eu/publications/national-adaptation-policy-processes/>).

### What can research activity provide to local adaptation?

#### In this Report:

Section 5.2 of Chapter 5, *Building the adaptation knowledge base and awareness*, describes the type of knowledge currently available as well as existing knowledge gaps.



Section 5.2.2 of Chapter 5, *Current state of awareness, knowledge creation, accessibility and take-up*, points to regional or typological differences between cities that require different knowledge strategies, as well as to differences in awareness and take-up of knowledge. The part on *Knowledge sharing* points to forms of knowledge generation and transmission that can be applied by cities, highlighting, inter alia, the role of activities that translate knowledge into useful information and the importance of knowledge co-generation.

**Further resources:**

Chapter 3 of the EEA report, *Overview of climate change adaptation platforms in Europe* (EEA Technical Report 5/2015), provides guidelines for the presentation of knowledge in platforms, as well as good examples. (<http://www.eea.europa.eu/publications/overview-of-climate-change-adaptation>).

**Where can I find inspiring examples?**

**In this Report:**

The part of chapter 5 dedicated to knowledge generation provides some examples on the successful transmission and co-generation of knowledge. For example, Box 5.8, *An NGO raising awareness about the needs of local authorities*, Box 5.10, *Examples of knowledge from EU-financed research* and Table 5.10 provide an overview of existing European knowledge platforms that make knowledge on urban adaptation challenges available.

Box 5.13, *Making the UKCIP Adaptation Wizard useful for Portuguese cities*, provides an example of a research activity that takes knowledge and guidance tools used in the UK context and translates them to the needs of Portuguese local authorities.

**Further resources:**

In the section dedicated to knowledge, the Climate-ADAPT platform provides an overview of important research projects and existing guidance tools (<http://climate-adapt.eea.europa.eu/knowledge/adaptation-information/research-projects>).

**Where are the gaps where further support is needed?**

**In this Report:**

Sections 5.1.3, 5.2.3, 5.3.3, 5.4.3 and 5.5.3 of Chapter 5 point to specific knowledge needs related to new, transformative strategies for urban adaptation. These will require innovative forms of governance, knowledge generation, new strategies for planning and implementing adaptation, as well as new economic tools. These sections point to important knowledge needs and capacity gaps with respect to the efficient use of monitoring as a means for improving policies.





Urban adaptation to climate change in Europe 2016 (EEA Report 12/2016)



Urban Adaptation to Climate Change in Europe (EEA Report 2/2012)



Mayors Adapt



Climate-ADAPT



Urban adaptation support tool



Map book Urban vulnerability to climate change



National Adaptation Policy Processes in European Countries, (EEA Report 4/2014)



National monitoring, reporting and evaluation of climate change adaptation in Europe (EEA Technical Report 20/2015)