

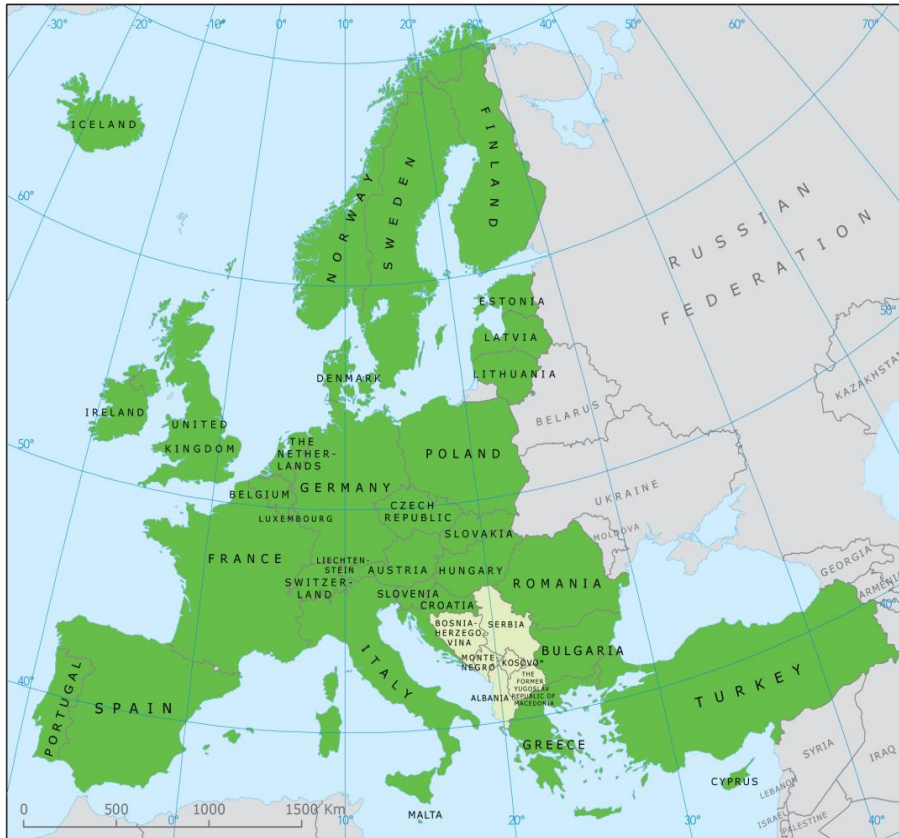
André Jol, EEA Head of Group Climate change impacts, and adaptation

BDF Tools for Urban Climate Adaptation Training Days, 30 November 2017,
Copenhagen

The EU Adaptation Strategy: The role of EEA as knowledge provider



European Environment Agency



EEA coverage

Member countries Cooperating countries

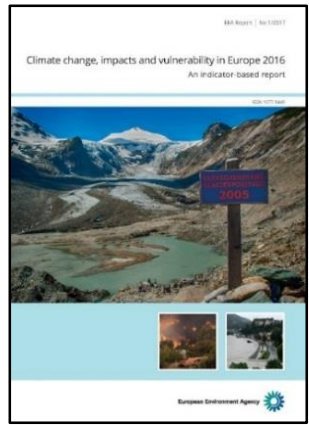
*Kosovo under UNSCR 1244/99

- Supporting and informing policy development and implementation by **data, indicators and assessments**
- **33 member** and six collaborating **countries** (ministries and **environment agencies**)
- Main target audience: **policymakers** at European and national levels
- **Networking:** annual Eionet workshop with all countries, expert meetings
- Supported by **European Topic Centres**, e.g. on adaptation see: <http://cca.eionet.europa.eu/>

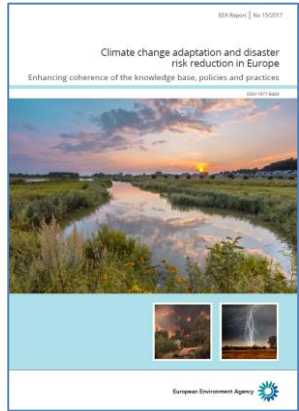


EEA products and services on climate change impacts, vulnerability and adaptation

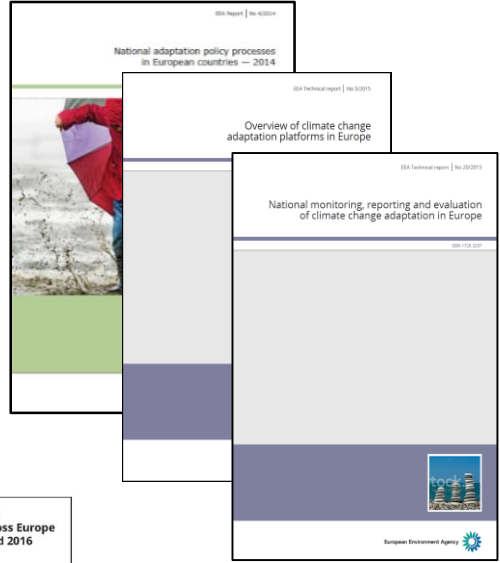
Impacts and vulnerability



CCA & DRR



National adaptation



Urban adaptation

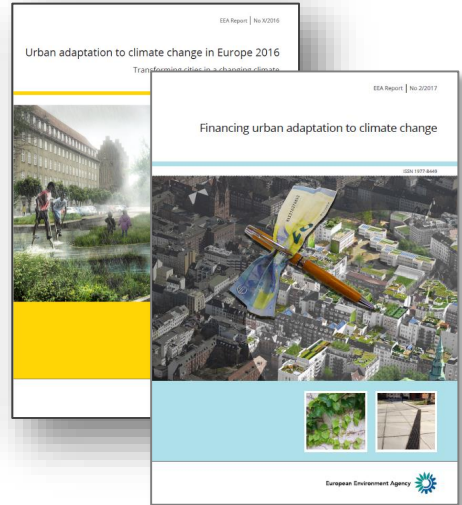
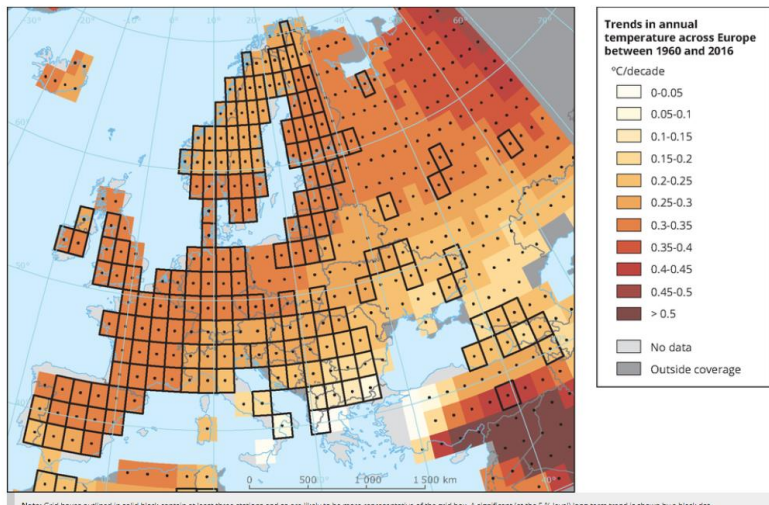
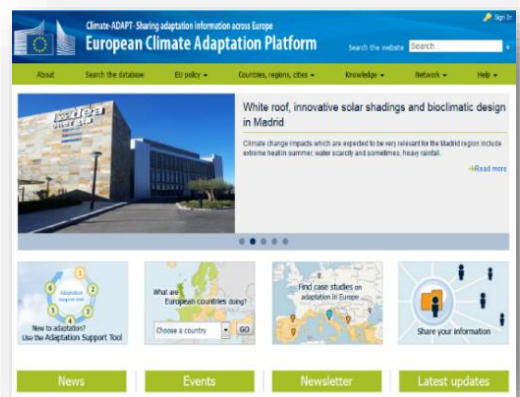


Fig. 3: Trends in annual temperature across Europe between 1960 and 2016



Note: Grid boxes outlined in solid black contain at least three stations and so are likely to be more representative of the grid box. A significant (at the 5 % level) long-term trend is shown by a black dot.

Data source:
 • European Climate Assessment & Dataset: The daily European land temperature provided by Royal Netherlands Meteorological Institute (KNMI)
 • E-OBS gridded dataset provided by Royal Netherlands Meteorological Institute (KNMI)



Indicators

Climate-ADAPT

European Environment Agency



EU Climate Adaptation Strategy

“to contribute to a more climate resilient Europe”

EU Strategy on Adaptation to
Climate Change (2013)



Priority 1: Promoting action by Member States

Action 1. Encourage MS to adopt Adaptation Strategies and action plans

Action 2. LIFE funding, including adaptation priority areas

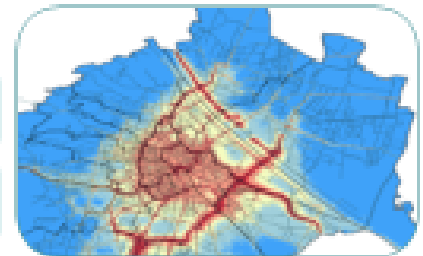
Action 3. Promoting adaptation action by cities along the Covenant of Mayors initiative



Priority 2: Better informed decision-making

Action 4. Knowledge-gap strategy

Action 5. Climate-ADAPT

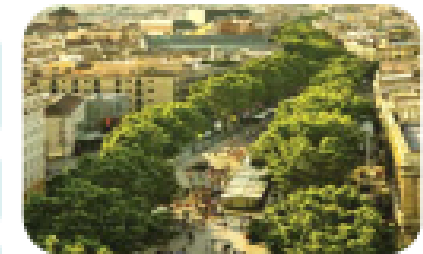


Priority 3: Key vulnerable sectors

Action 6. Climate proofing the Common Agricultural Policy, Cohesion Policy, and the Common Fisheries Policy

Action 7. Making infrastructure more resilient

Action 8. Promote products & services by insurance and finance markets



EU funding for climate action

- LIFE Programme - €864 million for climate projects in 2014-2020 (split between mitigation and adaptation)
- At least 20% of EU budget 2014-2020 to climate-related action (€180 billion)
- European Fund for Strategic Investment– half of the approved funds are climate related
- H2020 research projects: over € 225 million spent on adaptation research projects starting between 2014-17

Climate change is affecting all European regions – but adaptation needs differ across regions

Arctic region

- Temperature rise much larger than global average
- Decrease in Arctic sea ice coverage
- Decrease in Greenland ice sheet
- Decrease in permafrost areas
- Increasing risk of biodiversity loss
- Some new opportunities for the exploitation of natural resources and for sea transportation
- Risks to the livelihoods of indigenous peoples

Atlantic region

- Increase in heavy precipitation events
- Increase in river flow
- Increasing risk of river and coastal flooding
- Increasing damage risk from winter storms
- Decrease in energy demand for heating
- Increase in multiple climatic hazards

Mountain regions

- Temperature rise larger than European average
- Decrease in glacier extent and volume
- Upward shift of plant and animal species
- High risk of species extinctions
- Increasing risk of forest pests
- Increasing risk from rock falls and landslides
- Changes in hydropower potential
- Decrease in ski tourism

Coastal zones and regional seas

- Sea level rise
- Increase in sea surface temperatures
- Increase in ocean acidity
- Northward migration of marine species
- Risks and some opportunities for fisheries
- Changes in phytoplankton communities
- Increasing number of marine dead zones
- Increasing risk of water-borne diseases

Boreal region

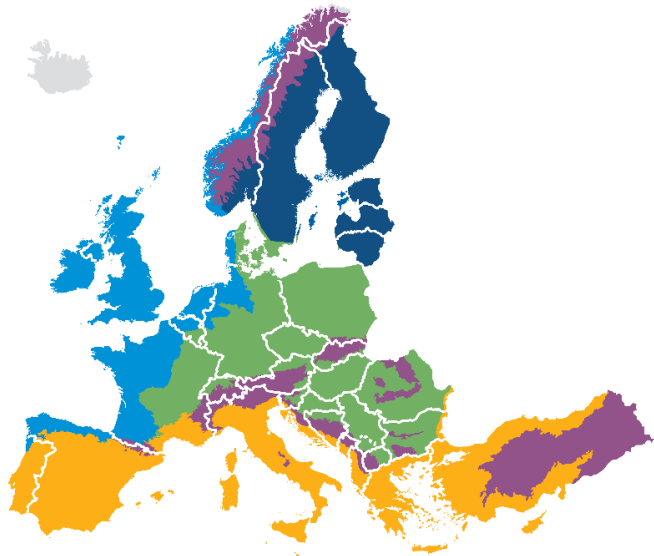
- Increase in heavy precipitation events
- Decrease in snow, lake and river ice cover
- Increase in precipitation and river flows
- Increasing potential for forest growth and increasing risk of forest pests
- Increasing damage risk from winter storms
- Increase in crop yields
- Decrease in energy demand for heating
- Increase in hydropower potential
- Increase in summer tourism

Continental region

- Increase in heat extremes
- Decrease in summer precipitation
- Increasing risk of river floods
- Increasing risk of forest fires
- Decrease in economic value of forests
- Increase in energy demand for cooling

Mediterranean region

- Large increase in heat extremes
- Decrease in precipitation and river flow
- Increasing risk of droughts
- Increasing risk of biodiversity loss
- Increasing risk of forest fires
- Increased competition between different water users
- Increasing water demand for agriculture
- Decrease in crop yields
- Increasing risks for livestock production
- Increase in mortality from heat waves
- Expansion of habitats for southern disease vectors
- Decreasing potential for energy production
- Increase in energy demand for cooling
- Decrease in summer tourism and potential increase in other seasons
- Increase in multiple climatic hazards
- Most economic sectors negatively affected
- High vulnerability to spillover effects of climate change from outside Europe



Transnational actions (Baltic sea region, example)

Climate-ADAPT - Sharing adaptation information across Europe

European Climate Adaptation Platform

Search:

Log In

About Database EU policy Countries, regions, cities Knowledge Network Help

You are here: Home / Countries, regions and cities / Transnational regions / Baltic Sea / Adaptation / Policy Framework

Adaptation in Baltic Sea Region

General | **Policy Framework** | Impacts & Vulnerabilities | Adaptation Actions



Policy Framework

The **European Union Strategy for the Baltic Sea Region (EUSBSR)** is the first macro-regional strategy in Europe. It aims at reinforcing cooperation within this large region in order to face various challenges and promotes a more balanced development in the area. The Strategy also contributes to major EU policies.

[Read less](#)

Search Results

- Publications and reports (30)
- Information portals (2)
- Maps, graphs and datasets (1)
- Guidance (1)
- Tools (1)
- Research and knowledge projects (18)
- Case studies (1)
- Organisations (6)

BALTADAPT STRATEGY for adaptation to climate change in the Baltic Sea Region

A proposal preparing the ground for political endorsement throughout the Baltic Sea Region

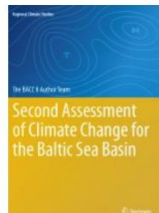



Baltic Earth

Earth System Science for the Baltic Sea Region

- [Home / News](#)
- [Background](#)
- [Grand Challenges](#)
- [Working Groups](#)
- [Projects](#)
- [Publications](#)
- [Organisation](#)
- [International Baltic Earth Secretariat](#)
- [Events](#)
- [Internal](#)
- [How to participate](#)

BACC II BALTEX Assessment of Climate Change for the Baltic Sea Basin 2009-2014



BACC 2 Book:
Second Assessment of Climate Change for the Baltic Sea Basin
 Springer Open Access, 2015
 Download [here...](#)




EUSBSR Horizontal Action Climate [Home / Strategies / EUSBSR Horizontal Action Climate](#)



HA Climate




[About](#) [Focus topics](#) [Climate Dialogue](#) [Flagships](#) [Results](#) [Coordination](#) [Documents](#)



National Adaptation Strategies

- 25 Member States have developed National Adaptation Strategies
- 16 have developed National Adaptation Plans

EEA countries:	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Austria													
Belgium													
Bulgaria													
Croatia													
Cyprus													
Czech Republic													
Denmark													
Estonia													
Finland										*			
France													
Germany													
Greece													
Hungary													
Ireland													
Italy													
Latvia													
Lithuania													
Luxembourg													
Malta													
Netherlands												*	
Poland													
Portugal											*		
Romania												*	
Slovakia													
Slovenia													
Spain													
Sweden													
United Kingdom													
Iceland													
Liechtenstein													
Norway													
Switzerland													
Turkey													

	No policy
	National adaptation strategy (NAS) in place
	National adaptation strategy (NAS) and national and/or sectoral adaptation plans (NAP/SAP) in place

* National Adaptation Strategy (NAS) updated

Evolution of urban adaptation knowledge in Europe

EEA report on urban adaptation - challenges and opportunities

Climate-ADAPT
EU Adaptation Strategy

Launch of Mayors Adapt Initiative

Merge of Mayors Adapt Initiative

EEA report on urban adaptation - transforming cities in a changing climate

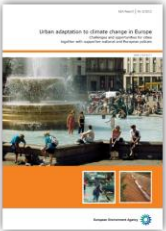
Merge of Covenant of Mayors and Compact of Mayors

Evaluation of Mayors

Launch of EU Adaptation Strategy

EEA Financing Urban Adaptation report

2012



2013



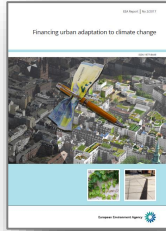
2014

2015

2016



2017



Climate-ADAPT: the European Climate Adaptation Platform



The screenshot shows the top navigation bar of the Climate-ADAPT website. It features the EEA logo, the title "Climate-ADAPT-Sharing adaptation information across Europe", and the main heading "European Climate Adaptation Platform". A search bar is located on the right. Below the navigation bar, there are several menu items: "About", "Search the database", "EU policy", "Countries, regions, cities", "Knowledge", "Network", and "Help". The main content area displays a featured article titled "About Climate Change Adaptation in Europe" with a list of bullet points and a "Read more" link. Below the article, there are four interactive panels: "Adaptation support tool", "What are European countries doing?", "Find case studies on adaptation in Europe", and "Share your information". At the bottom, there are four buttons labeled "News", "Events", "Newsletter", and "Latest updates".

Management and maintenance: EEA joint with DG CLIMA

Scope: Supports adaptation strategies, policies and actions; Complementary to national platforms

Intended Users: Experts and decision makers, researchers

Dissemination and sharing: Newsletter; Webinars; Conferences, workshops

- Over 730 urban database items (2,400 in total)
- 41 urban adaptation case studies
- Urban Adaptation Support Tool
- Urban Vulnerability Map Book
- 61 city profiles of Mayors Adapt signatories
- 260,000+ visitors (March 2013 - April 2017)



National Climate Adaptation Platforms (example DK)

The screenshot shows the homepage of the Danish National Climate Adaptation Platform. At the top, there is a language selector set to 'Dansk' and a search bar with the text 'Search...'. The main header features the logo 'ClimateChangeAdaptation' with 'ClimateChange' in grey and 'Adaptation' in green. Below the header is a green navigation bar with links for 'Recent', 'Technologies', 'Cases', 'Sectors', 'Tools', 'Publications', 'Knowledge', and 'About Us'. A secondary navigation bar contains three buttons: 'Citizens' (teal), 'Municipalities' (orange), and 'Businesses' (blue). The main content area is divided into several sections. On the left, there is a large image of a modern building complex with the title 'Protections of the inner city' and the subtitle 'Sluice system at Aarhus River reduces the risk of flooding'. To the right of this is a 'Tools' section with the text 'Try the tools by clicking below' and four icons representing different types of tools: a factory, a house, a gauge, and a cloud with rain. Below these sections are four smaller boxes. The first, 'Latest news in English', lists four newsletters (13, 14, 15, 16). The second, 'News', features an article titled 'New Nature Solutions Prevent Cities from Flooding' with a photo of a path through tall grass. The third, 'Climate change', has the text 'Climate change means changes in temperatures, precipitation and other extremes.' and a photo of people running at sunset. The fourth, 'State of Green', includes the logo 'State of Green' with the tagline 'Join the Future. Think Denmark' and a 'Read more' link.

Dansk Search

ClimateChangeAdaptation

Recent Technologies Cases Sectors Tools Publications Knowledge About Us

Citizens Municipalities Businesses

Protections of the inner city

Sluice system at Aarhus River reduces the risk of flooding

Tools

Try the tools by clicking below

Latest news in English

- ▶ Newsletter 16
- ▶ Newsletter 15
- ▶ Newsletter 14
- ▶ Newsletter 13

News

New Nature Solutions Prevent Cities from Flooding

Climate change

Climate change means changes in temperatures, precipitation and other extremes.

▶ Read about the future

State of Green

State of Green
Join the Future. Think Denmark

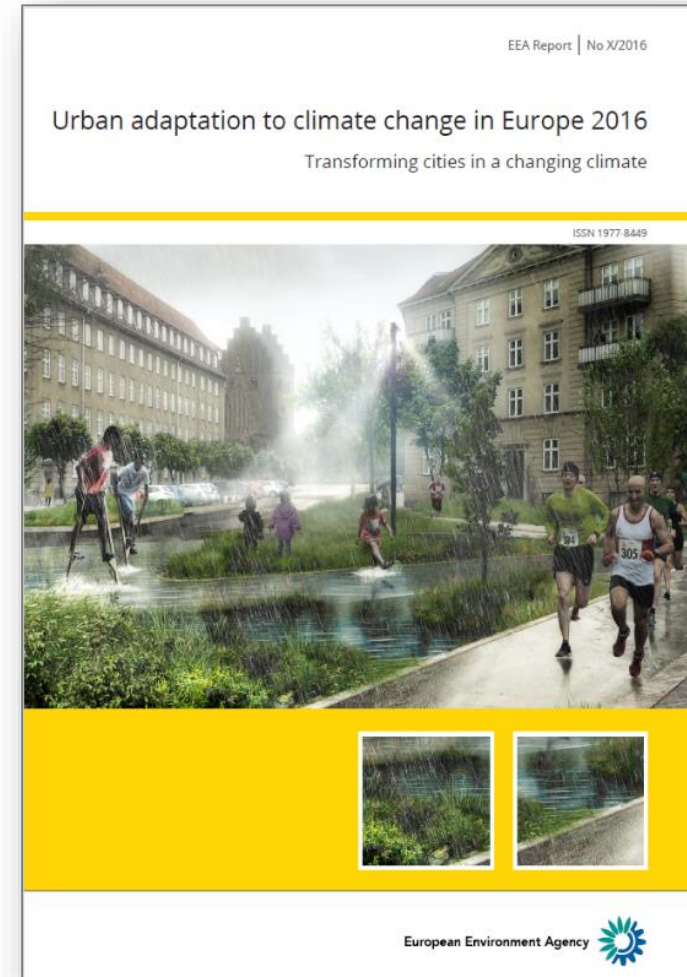
▶ Read more

“Urban adaptation to climate change in Europe 2016”

Analyses on various topics: (multi-level) governance, knowledge base, awareness, planning, economics, monitoring and reporting.

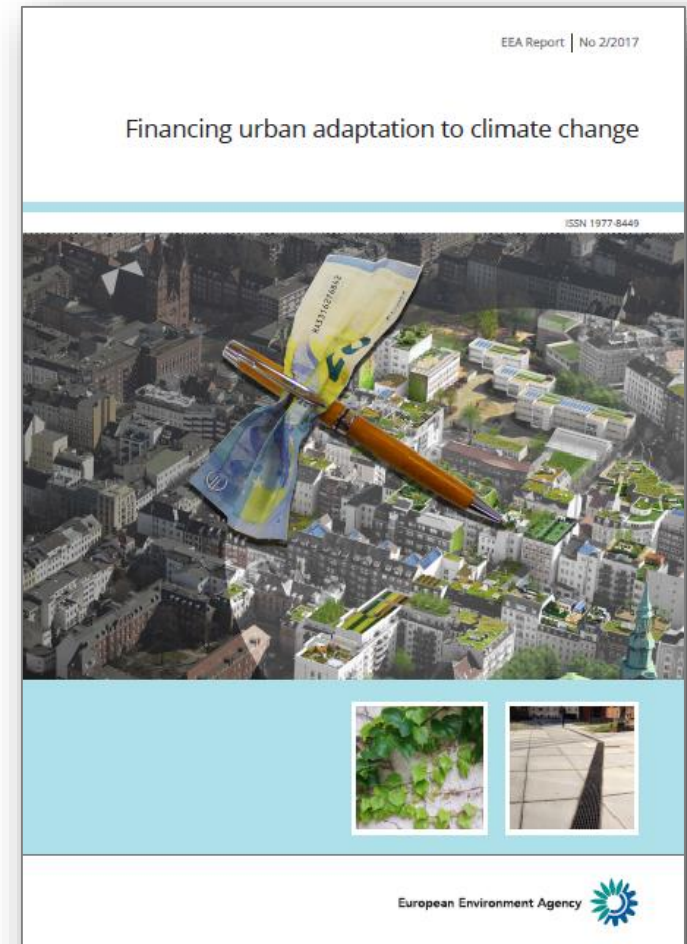
Key messages:

- **Adaptation has started** in European cities
 - Mainly at planning stage
 - Implementation by front-runner cities
- **Low cost and ‘soft’ solutions** are predominant
- Emphasis on **nature-based solutions** (green infrastructure)
- **Need for transformative adaptation**
 - Long-term, systemic approach



“Financing urban adaptation” (February 2017)

- **Case studies** that analyse 11 cities across Europe – inspiration for other cities
- **Key messages**
 - **Public funds** for adaptation measures can be **difficult to find**
 - **Cities may lack the capacity** to find funding sources and apply for money
 - **Integrating climate adaptation** in requirements for new investments or redevelopments **will save money** in the long term
 - Demonstrating **multiple benefits of adaptation solutions** (e.g. green infrastructure) can increase the chance of securing funding

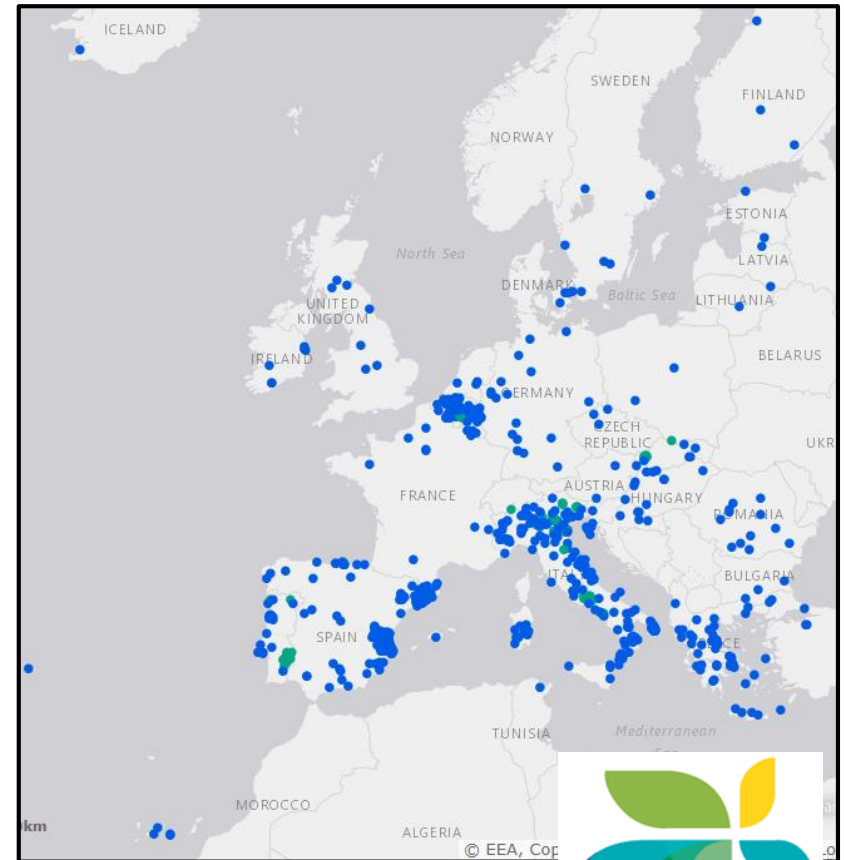


European cities have started to act on adaptation

Mayors Adapt / Covenant of Mayors signatories 2015

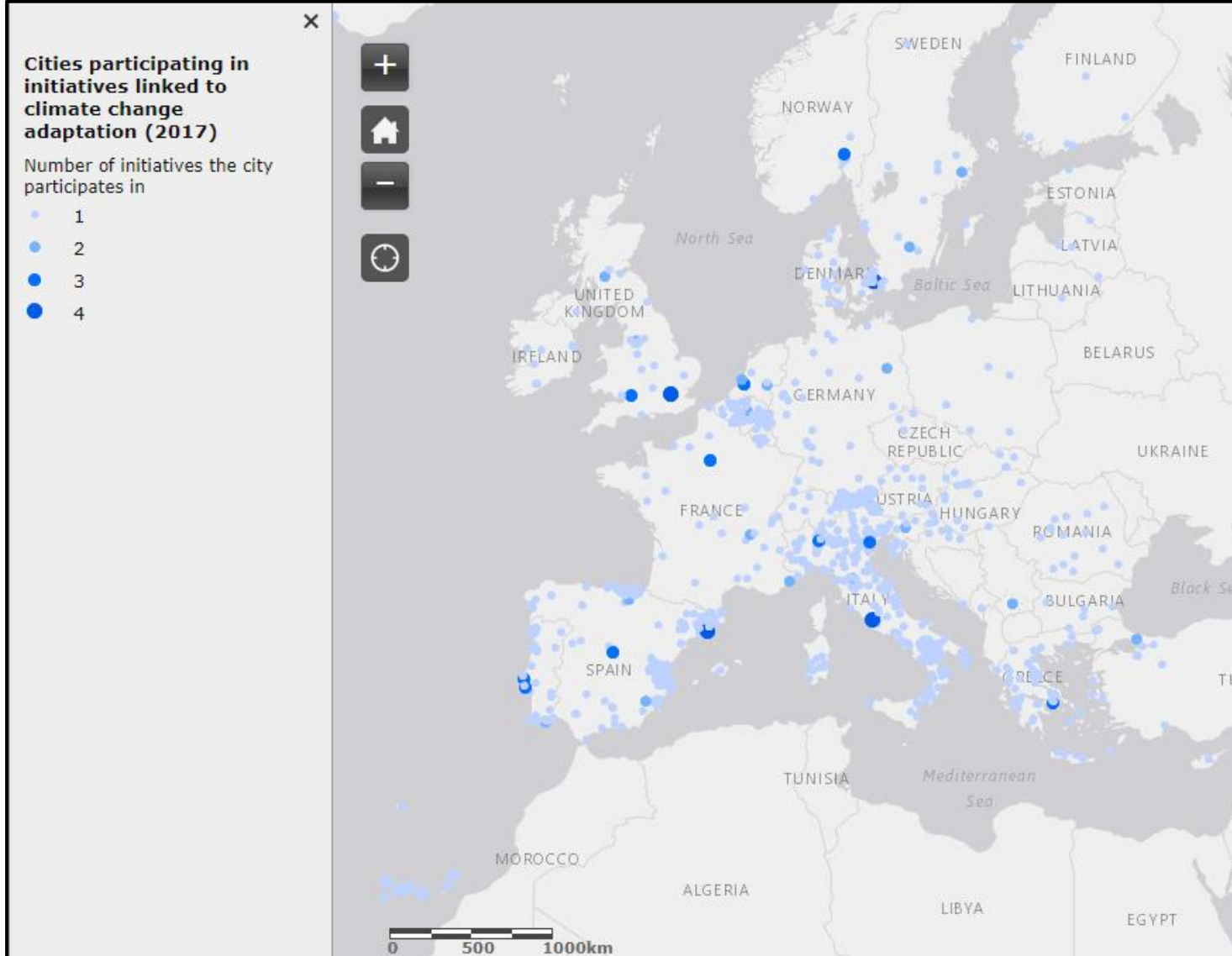


Covenant of Mayors signatories 2017



Covenant of Mayors
for Climate & Energy

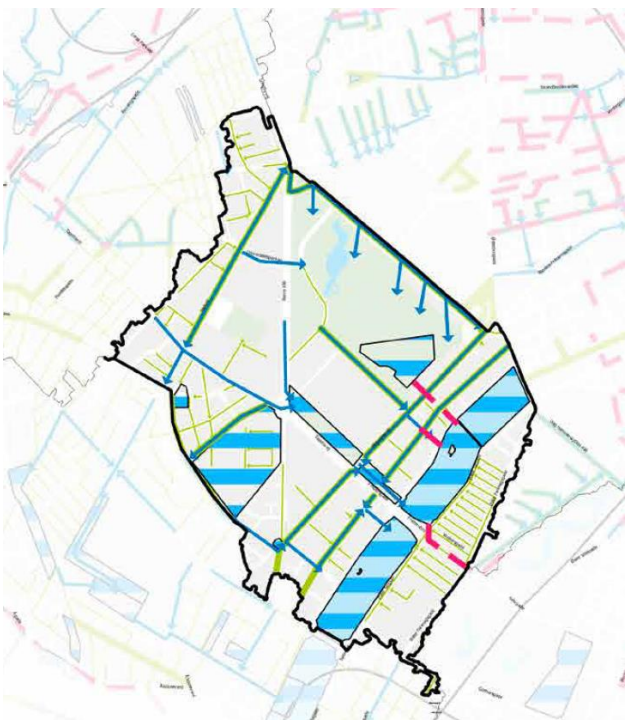
Cities participating in initiatives promoting adaptation



- Global Covenant of Mayors / Compact of Mayors
- Making Cities Resilient
- 100 Resilient Cities
- C40
- EGCA/EGL

Few systemic solutions, example of Copenhagen

Copenhagen **Cloudburst Plan** as backbone for **physical development** in the City



Copenhagen (Denmark) implements the next decades a cloudburst plan with 300 projects, **combining green, blue and grey solutions** costing 1.5 billion Euro

Adding more urban nature, increasing biodiversity and creating a liveable city



Storm water storage space at Tåsingeplads in Copenhagen, Denmark

Key challenges for urban adaptation in Europe

- **Closing the gap** between front-runners and cities just starting to work on adaptation
 - Exchange of knowledge
 - Funding: sources and support to access them
- **Embracing transformative approach to adaptation** – moving beyond coping and incremental changes
- Developing and maintaining **supportive governance framework** at all levels: EU, national and local
 - Providing relevant **guidance on adaptation**
 - Appropriate presentation of existing knowledge
- **Mainstreaming adaptation** into various municipal work areas
- The need for an **integrated approach to adaptation and mitigation**



Further information on EEA: <https://www.eea.europa.eu/>

**Open European Day at Bonn Resilient Cities, 25 April 2018:
<http://resilientcities2018.iclei.org/open-european-day/>**

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