Thinking beyond grey - using nature to cope with climate change
The EEA’s mission

What?
The provision of relevant, reliable, targeted and timely information to policy-making agents and the public.

Why?
To help achieve significant and measurable improvements in Europe’s environment and to support sustainable development.
Cities in Europe

4% area

75% population
Urbanisation drives change

Source: Brugger, 1992
Urban areas drive *climate* change...
... and are affected by climate change

- Temperature increase, heat waves;
- Flooding;
- Extreme precipitation;
- Sea level rise;
- Droughts and water scarcity;
- Forest fires.

Source: EEA, 2012
We are shaping today the city of tomorrow

From the grey city model...     ...to the green city model
Grey cities adapt with grey measures

Individual air conditioning units to cope with heat.

Building higher dykes.

Source: © A. Svensson
Green infrastructure can reduce urban heat islands

Source: EEA, 2012
Green areas can drain storm water

... but high soil sealing hinders it
The multiple benefits of green infrastructure

- Recreation & leisure
- Climate Change adaptation & mitigation
- Flood alleviation & management
- Quality of Place
- Health & Wellbeing
- Land & biodiversity
- Productivity
- Land & property values
- Economic Growth & investment
- Tourism
- Products from the land

The challenge to deliver green areas in cities
The “urban green” concept
Vertical forest concept from Milan
Mimicking nature: cooling concept from Madrid
Transform urban living - systemic solutions

Living with natural dynamics - not against – floating houses in Maasbommel

Source: Boiten Ingenieurs b.v.
Natural dynamics – Room for Rivers

Source: Municipality of Nijmegen
European Union policies

Overarching policies
- 7th EAP
- Europe 2020

Thematic policies
- EU Strategy on adaptation to climate change
- 2020 Climate and energy package
- Biodiversity Strategy to 2020 and its directives
- Roadmap to a Resource Efficient Europe
- Thematic Strategy on Soil
- EU Urban Agenda
- Natura 2000
Integrated Covenant of Mayors Climate and Energy

2008
Launch of the Covenant of Mayors

> 6500 cities and regions

2014
Launch of Mayors Adapt

> 150 cities and regions
EEA products

Green infrastructure

• Green infrastructure and territorial cohesion (2011).
• Spatial analysis of green infrastructure in Europe (2014).
• Exploring nature-based solutions — The role of green infrastructure in mitigating the impacts of weather- and climate change-related natural hazards (2015).

Adaptation to climate change

• Urban adaptation to climate change in Europe (2012).

Climate-ADAPT

• Adaptation options (73), Case studies (70) and much more

http://climate-adapt.eea.europa.eu
www.eea.europa.eu
Impacts, connections, supplies...
Thank you

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Green infrastructure and its services

- Clean air
- Flood regulations
- Timber production
- Local climate regulations
- Carbon sequestration
- Recreational areas
- Habitat services
- Cultural landscape
- Food production
EEA reports on urban issues

- Urban sprawl in Europe: The ignored challenge
- Ensuring quality of life in Europe’s cities and towns: Tackling the environmental challenges driven by European and global change
- A closer look at urban transport: TERM 2013 transport indicators tracking progress towards environmental targets in Europe
- Urban adaptation to climate change in Europe: Challenges and opportunities for cities together with supportive national and European policies
- Air Implementation Pilot: Lessons learnt from the implementation of air quality legislation at urban level
Urban metabolism - cities as living organisms

Environment

Urban system

Energy and matter

Waste and emissions

European Environment Agency
The main drivers of urban change

Domains of urban change
- Society
- Economy
- Governance
- Built-up environment
- Natural environment

Source: PBL, 2008
The challenge is to deliver a green infrastructure.
Which are the EEA member and cooperating countries?