



Norwegian  
Directorate for  
Civil Protection

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# Adaptation to Climate Change in Norway

National experiences &  
Local challenges

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# DSB in brief

## **National agency that:**

- Monitors risk and vulnerability in society
- Plans for emergencies & manages crises
- Is responsible authority for:
  - Civil defence
  - Fire prevention, electrical safety
  - Dangerous substances
  - Regional & local risk management, incl:  
Natural hazard preparedness / Climate adaptation

# Climate Change Adaptation - History

- **National Climate Adaptation Programme: 2007-2013**
  - A national coordination initiative led by MoEnv
  - 13 ministries involved
  - DSB was the secretariat
  - Green Paper (2010) and White Paper (2013)
  - In 2014: Coordination assigned to National Environment Agency
  - Current topic: Urban runoff legislation
- **DSB – climate adaptation focus since 2006**
  - National coordinator from 2007-2013
  - Coordinator of the **Cities of the Future** adaptation network from 2008-2014.
  - Continued efforts within our domain

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## Climate Change Adaptation:

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Adapting to what?  
Who is/will be affected?  
Who is responsible?  
National vs. local roles?  
Some examples

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Impact of climate change  
in Norway:

“Warmer, wetter & wilder”

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## Increase in extreme rainfall events:

- Land/mudslides
- Urban flooding
- Flash floods

These incidents are often very local and highly unpredictable.





Snow is pretty!  
Too much can be deadly and dangerous.



Who is affected?

Infrastructure

Energy & water resources

Agriculture

Forestry

Fisheries

Biodiversity

Civil protection

Human health

Tourism

Military

Trade & geopolitics

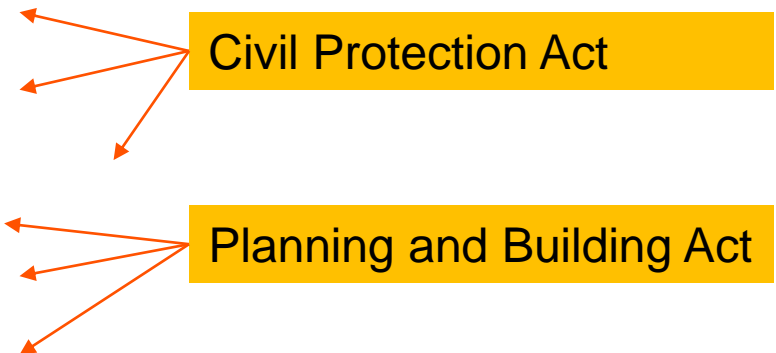


# Local vs. national responsibilities

Each **sector ministry** responsible within own domain. Only few actual **policy instruments**:

## Municipalities are responsible for:

- Overall planning
- Safety and well-being of their own citizens
- Avoiding development in areas exposed to risk
- Planning and development of critical infrastructure





Local empowerment – A pilot project

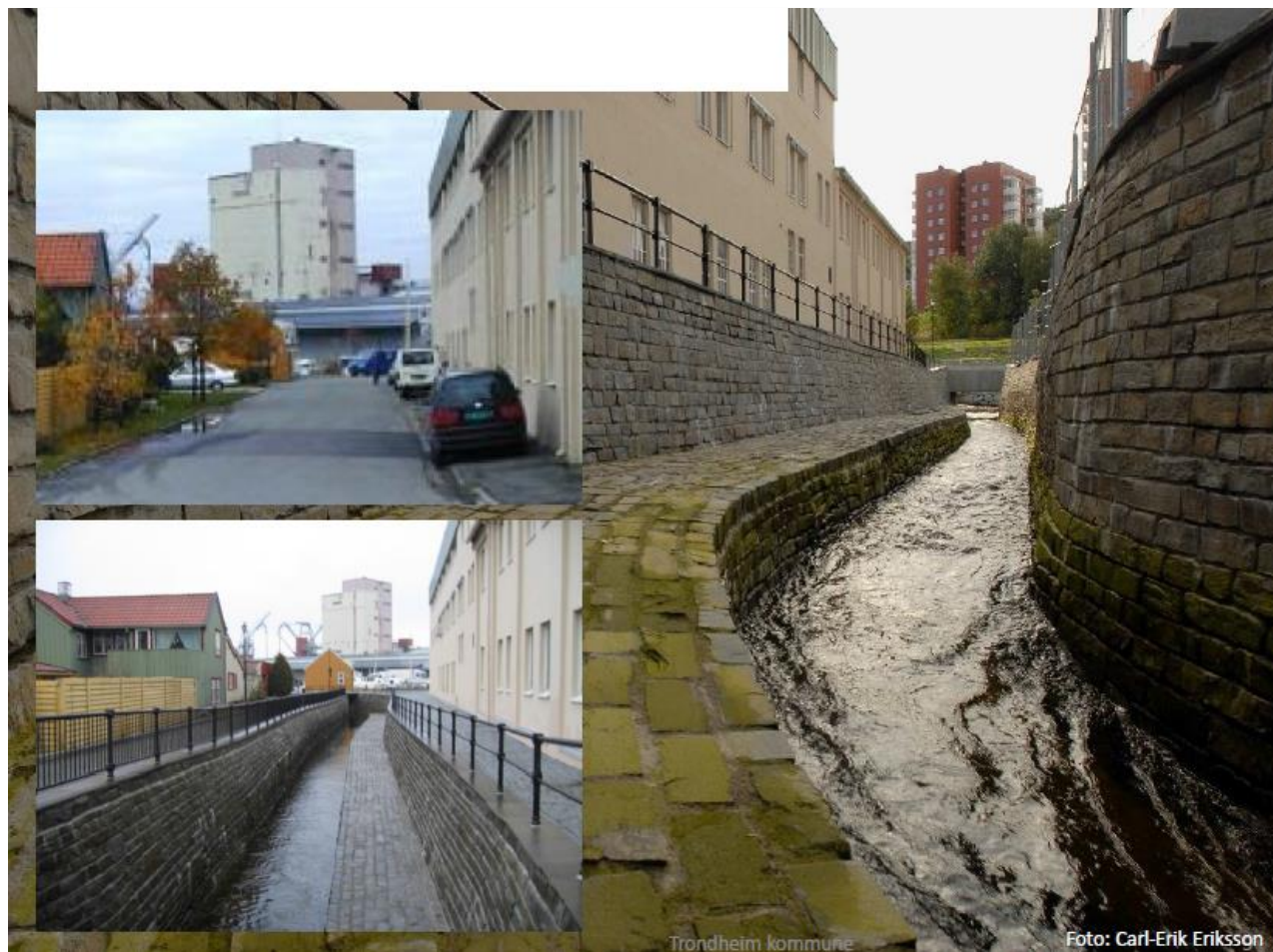
## **Cities of the Future (2008-14)**

- 13 largest cities
- Modest financial support
- Energy efficiency, transport, waste management & CCA
- CCA coordinator at DSB
- Fruitful link between national & local levels

## Cities of the Future - Climate change adaptation network

- Skills and knowledge
  - Courses
  - Seminars, workshops, etc
  - Study tours
- Cooperation
  - Local, regional, national, international
  - Insurance industry
- Integration of CCA in
  - Regulations
  - Local and regional planning processes
  - Risk and vulnerability assessments
- Pilots and demos

## Restoring culverted watercourses





# Rain gardens



Rain garden in an existing residential area in Trondheim



Photo: Arvid Ek

## Blue and green factor

- Transformation of Oslo's former airport
- Surface water used as a resource

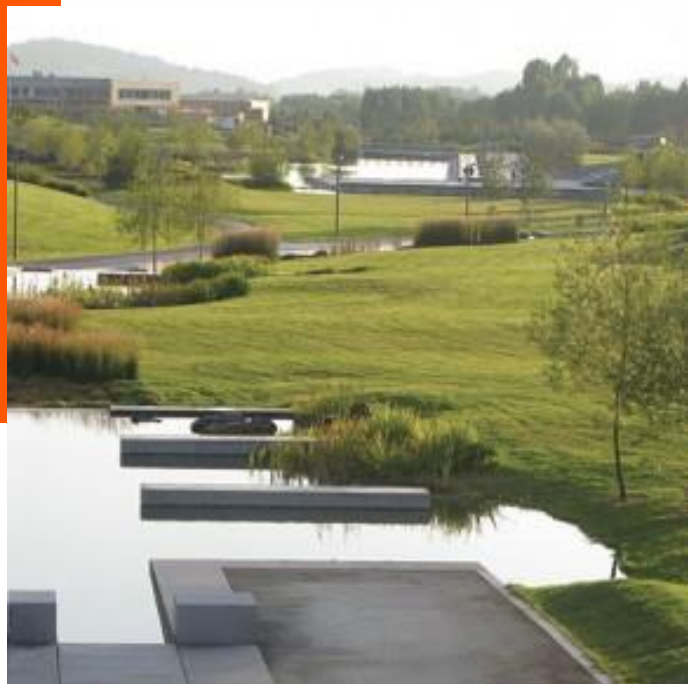


Photo: David V. Brasfield, Oslo kommune





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