



Disaster risk reduction and climate change adaptation in Norway

National, regional and local level risk
assessments and planning processes

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Norway – exposed to natural hazards



Photo: Bjarne Boge

- Floods
- Landslides
- Rock falls/tsunamis
- Avalanches
- Pluvial floods
- Storm surges
- Extreme wind
- Extreme cold
- Wildfires

Impacts of climate change in Norway

- More heavy precipitation
- More floods
- Landslides and avalanches
- Sea level rise/storm surges
- Melting sea ice in the Arctic

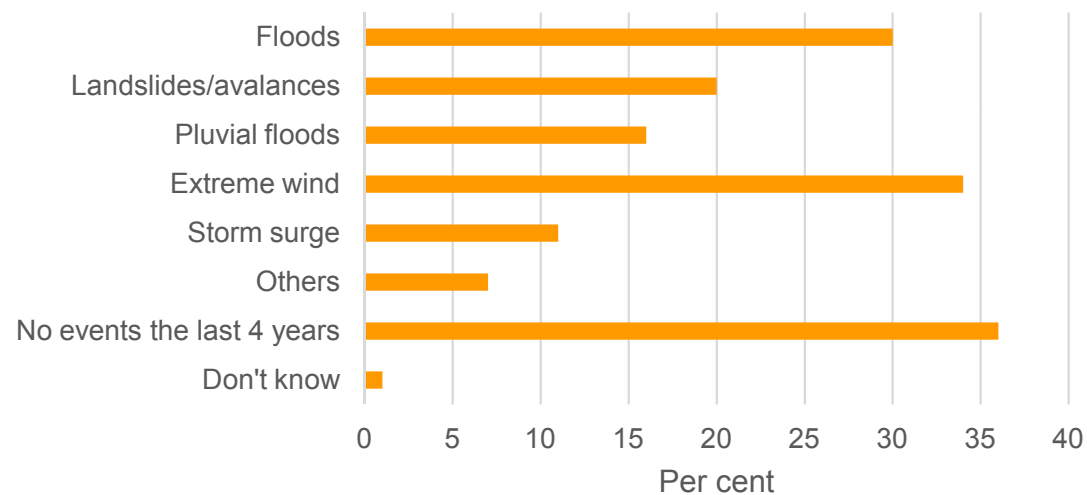


Exposure to natural hazards

DSB national survey to municipalities 2016



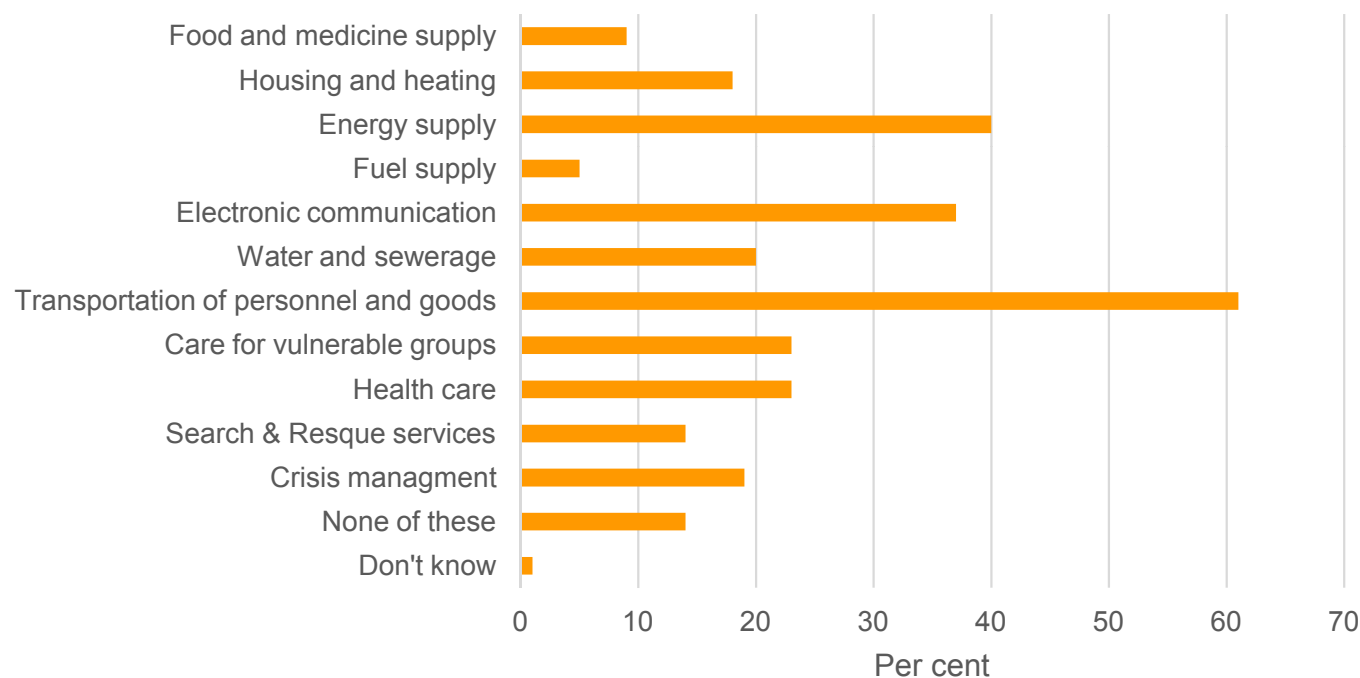
Has the municipality been affected by disasters caused by natural hazards the past 4 years?



Consequences of natural hazards

DSB national survey to municipalities 2016

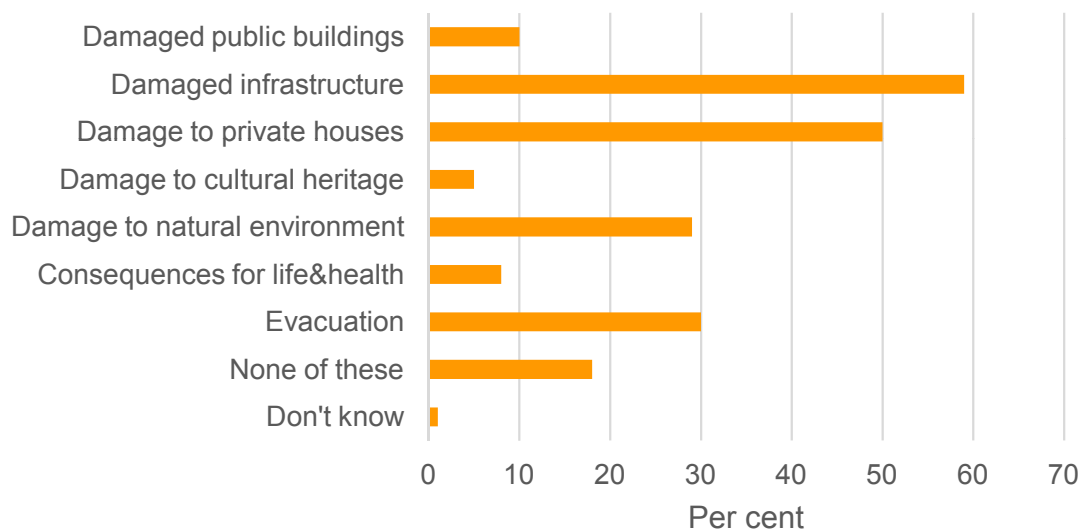
Which societal functions were affected by the event?



Consequences of natural hazards

DSB national survey to municipalities 2016

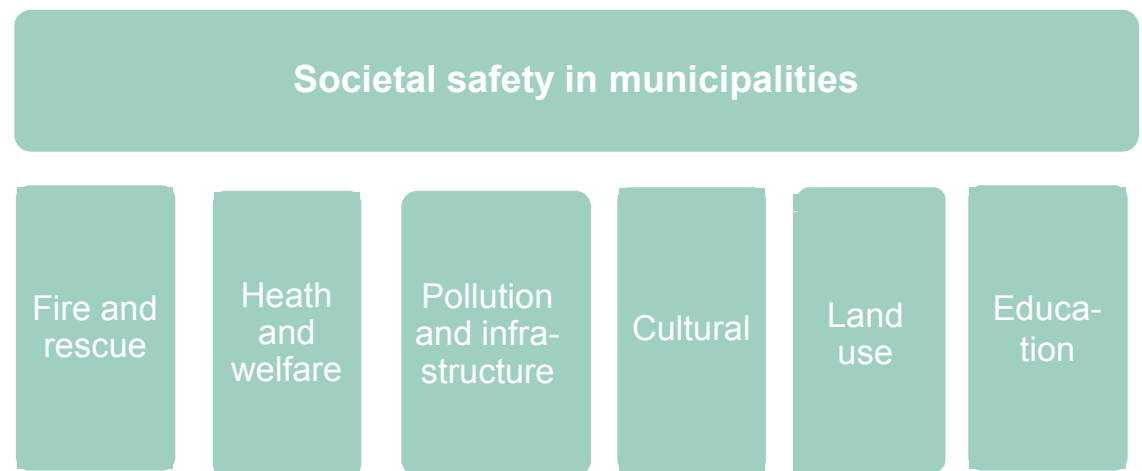
Did the event lead to any of the following?



Role of municipalities

Responsible for safety and well-being of their own citizens:

- Coordinating role at local level
- Responsible for societal planning
- Avoid development in areas exposed to risk
- Planning and development of critical infrastructure



Tools in legislation

- Civil protection:
 - Coordination of societal safety
 - Holistic risk and vulnerability assessments
 - Prevention & Preparedness planning
- Societal planning:
 - Risk and vulnerability assessments for new developments
 - Land-use planning
 - Building permits
 - Sector planning



Civil Protection Act

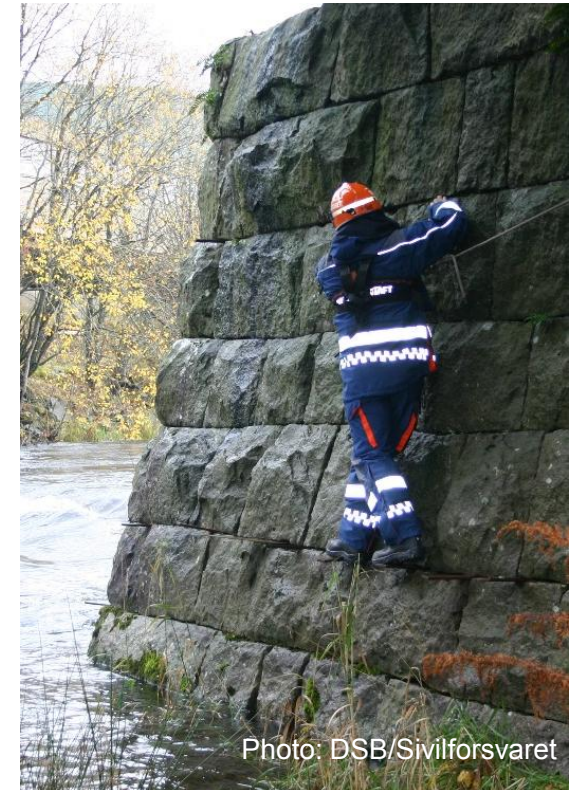
Regulations for municipal preparedness 2011

Planning and Building Act

Technical regulations 2010 (safety standards)

DSB's role

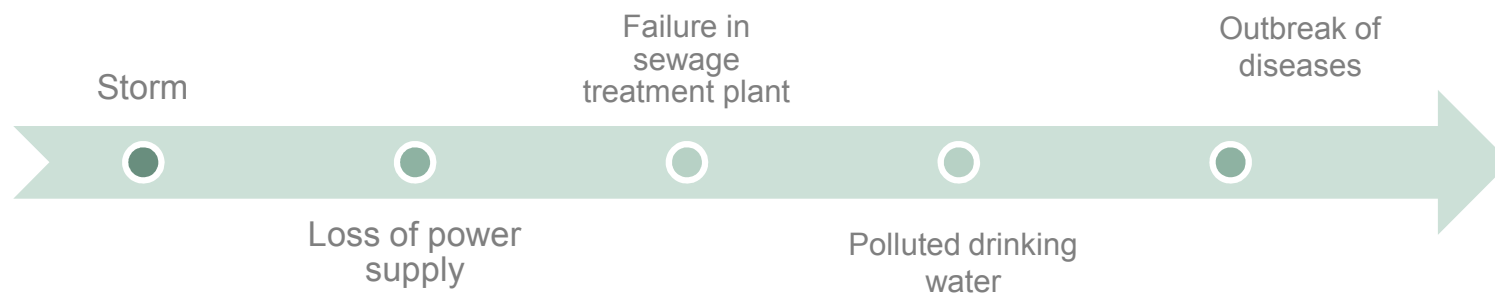
- National coordination of civil protection
 - Assessments – prevention – preparedness & response
 - Today's and future climate
 - Development trends & risk drivers
 - Interdependencies
 - Focus: Life&health, critical infrastructure, societal functions
- Regulations and guidelines for local planning
- Development of tools and methodology
- Competence building/training
- Monitoring of national, regional and local authorities
- Working via Norway's 19 County Governors
- + Civil defence, fire&rescue, dangerous goods etc.



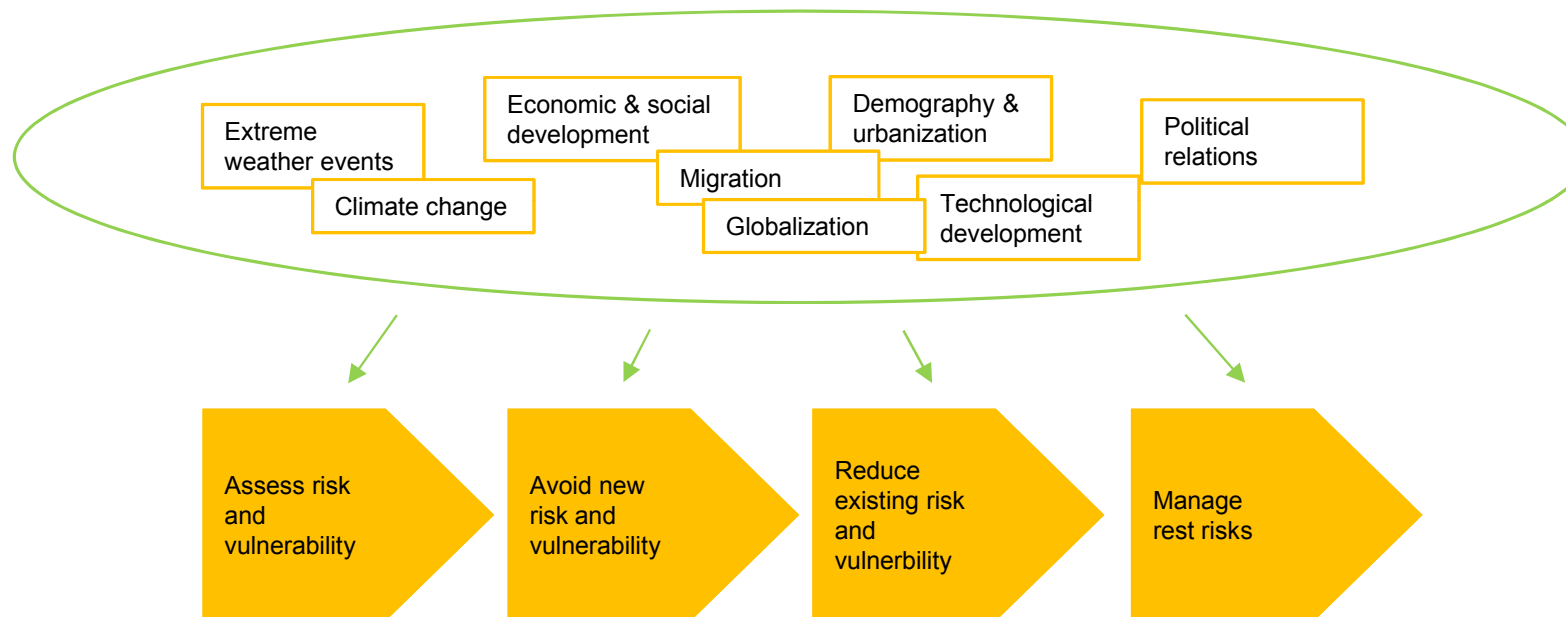
Disasters are complex



Photo: DSB



Holistic approach – four phases:



Laws and regulations are not enough

State/government

Laws & regulations

County governors

Audits, supervision

Municipalities

Learning

- Platforms and networks:

- National platform for DRR
- Pilot projects
- Conferences, workshops
- Cooperation between ministries & agencies
- Cooperation across levels
- Etc.

National Platform for Disaster Risk Reduction

- Authority network
 - Steering group
 - Joint secretariat
 - Project based
-
- National strategy for floods and landslides



European Forum for Disaster
Risk Reduction, Oslo 2013

National Platform priority areas

- Holistic management of catchment basins
- Coordination and compilation of data
- Cost-value analyses
- Follow-up of events
- Competence building and training
- Monitoring and warning

Floods – natural or manmade?



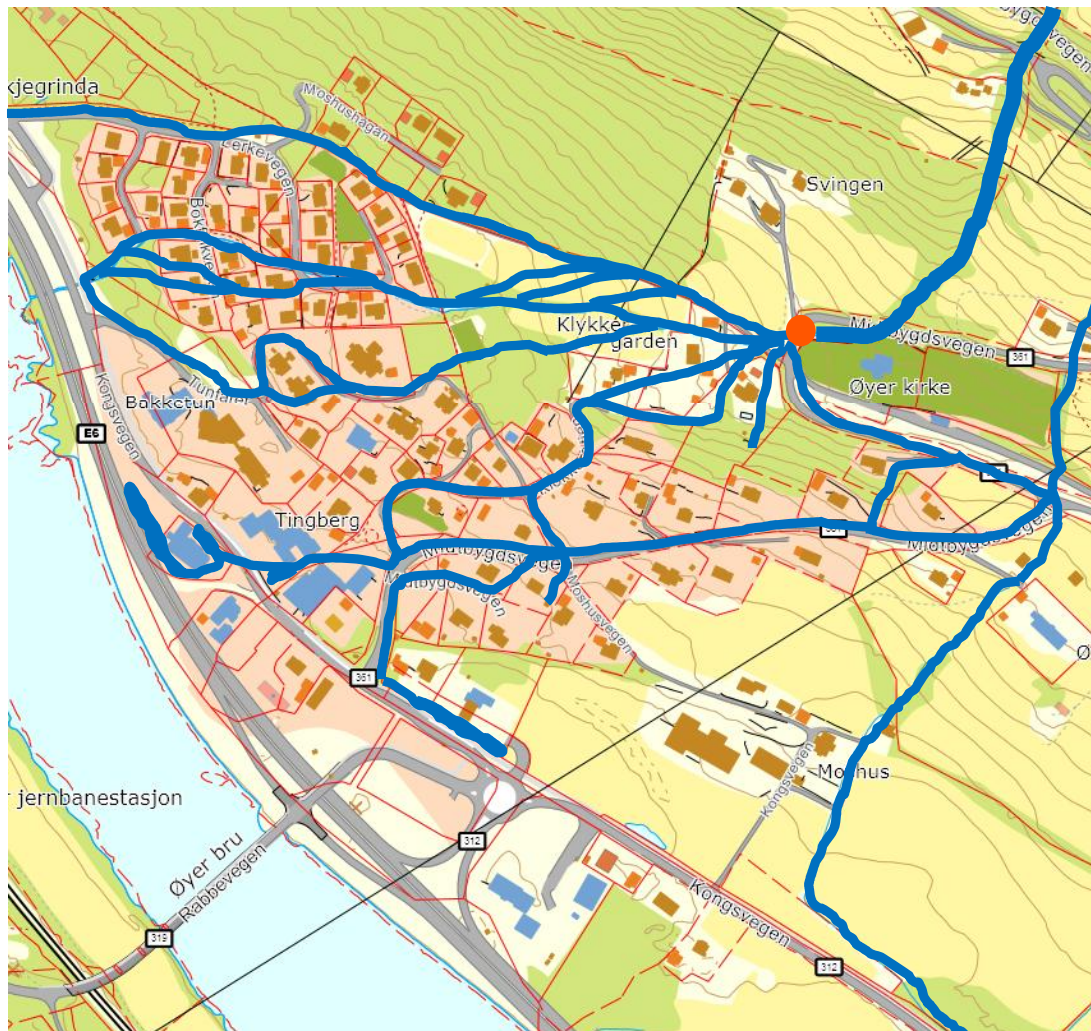
Extreme precipitation



- 80-100 mm in one hour
- Flood & erosion



Where did the water go?



- Risk factors:
 - Extreme precipitation
 - Roads etc. change runoff patterns
 - Insufficient drainage

Thank you!



Photo: DSB/Sivlforsvaret

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