

dsb Directorate for Civil Protection and Emergency Planning

Linking National Platforms, National Adaptation Plans of Adaptation, and Long-term Development Plans in Norway

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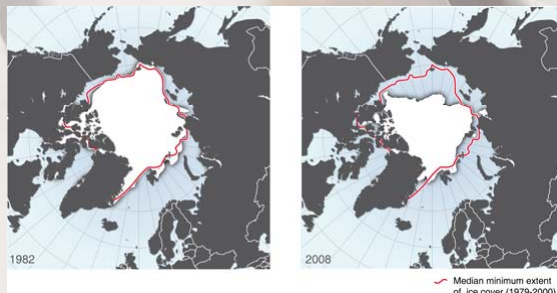


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Melting of the Arctic Ice

- Serious damage to Arctic ecosystems
- Opens up for utilization of natural resources
- New shipping routes Europe – Asia/Am. West Coast
- Arctic storms




1982 2008

Median minimum extent of ice cover (1979-2000)

+2°C global warming = +6-8°C in the Arctic

Accelerating effect due to more open water + less reflection from the ice




2008 pr. 3/9

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Large land-/rockslides

- Large rockslides into fjords and lakes cause tsunamis
- Increased risk in the high north due to melting permafrost
- Focus on information, training, monitoring, early warning systems, and exercises



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More frequent and extreme precipitation - consequences

- Higher frequency of landslides and floods
 - New areas will be flooded
 - Flash floods – the soil can not absorb the water
- Changes in locality, frequency and intensity of extreme weather events
 - From today's snow- and springfloods to more unpredictable conditions
- Urban floods and insufficient drainage





Rising sea level

- 20,000 km coastline
- Report first published October 2008 shows expected sea levels 2050 and 2100 for all municipalities along the coast
- Expected sea level varies according to land rise, ocean currents, and ocean temperature



Tabell 1: Øvre og nedre verdier for havstigning og stormflo med alle usikkerheter.

By	År 2050				År 2100			
	Havstigning (cm)		Stormflo (cm)		Havstigning (cm)		Stormflo (cm)	
	Min.	Maks.	Min.	Maks.	Min.	Maks.	Min.	Maks.
Tromsø	9	31	214	236	43	98	253	308
Trondheim	-1	21	252	274	22	77	292	335
Bergen	14	36	171	193	53	108	215	270
Stavanger	17	39	138	160	57	112	183	238
Oslo	-1	21	184	206	21	76	211	266



Norwegian Climate Adaptation Programme

- Established 2007
- Interministerial committee
 - Headed by Ministry of the Environment
 - Sekretariat: DSB
- Provide knowledge, exchange of experiences, competence building
- No changes in responsibilities – municipality/county levels




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 **Adaptive capacity in Norway - Challenges**


- Affects nearly all sectors and levels (local, regional and national)
- A new dimension for planners and decision makers
- Data and knowledge are based on complicated models, and have high degree of uncertainties
- Unpredictability – planning can not be based on historical data alone
- Limited resources and capacities – especially at local level


 Norwegian Climate Adaptation Programme









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 **Measures taken to meet the challenges**

- Developed course in climate change adaptation for development/ emergency planners & decision-makers at local level
- 'Future Cities' project – 13 largest municipalities (covers 50 per cent of total population)
- Research (funding / steering groups)
- Regional seminars, conferences, etc.
- Website launched March 2009
- Official Norwegian Report (2009-2010)


 Norwegian Climate Adaptation Programme



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Website – www.klimatilpasning.no

Klimatilpasning Norge

Klimaet er i endring, og klimatilpasning er derfor nødvendig. Arbeidet med klimatilpasning involverer alle forvaltningsnivåer og de fleste samfunnssektorer. En utfordring i klimatilpassingsarbeid vil være å få bedre kunnskap gjennom forskning, kartlegging og praktisk erfaring. Klimatilpasning.no er en nettportal som samler denne kunnskapen.
[Les mer om Klimatilpasning Norge](#)

Aktuelle saker

Sveriges offentlige utredning
 Sverige kommer til å påvirkes kraftig av klimaendringene. Klimatilpasning bør derfor påbegynnes allerede i dag. Denne konklusjonen dro Sveriges klima- og sårbarhetsutredning i sin rapport som kom i 2007.
 05.05.2009

Konferanse om ekstremvær og utfordringer
 Forskningsrådets NORKLIMA-program arrangerer Brukerforum 18. mai. Forumet retter seg mot beslutningstakere, forskere og representanter for ulike bransjer.
 29.04.2009

Framtidens byer – klimatilpasning
 I 2008 startet samarbeidet mellom staten og de 13 største

Fagområder klimatilpasning

- Bygg og anlegg
- Næringsutvikling
- Energi- og kraftforsyning
- Fiske- og kvitstærning
- Jord- og skogbruk
- Reindrift
- Turisme
- Helse
- Natur, miljø og landskap
- Naturskade
- Transport og samferdsel
- Vann og avløp

Klimautfordringer

Fylker

Velg ditt fylke

Klikk på kartet for å velge ditt fylke:



Information sharing

- Experiences
- Best practices
- Research
- Specific issues

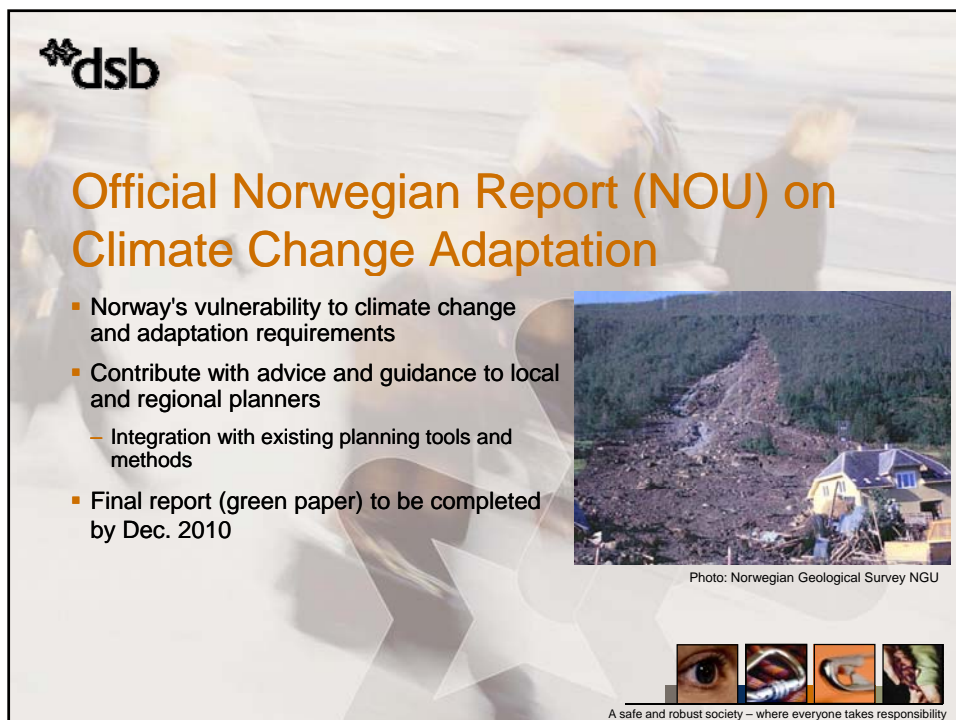
Target groups:

- Local planners
- Decision-makers
- Municipality level
- County level
- Later: Private sector

Launched March 2009



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Official Norwegian Report (NOU) on Climate Change Adaptation

- Norway's vulnerability to climate change and adaptation requirements
- Contribute with advice and guidance to local and regional planners
 - Integration with existing planning tools and methods
- Final report (green paper) to be completed by Dec. 2010





Photo: Norwegian Geological Survey NGU





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Process to link Climate Change Adaptation and Disaster Risk Reduction

- Establish a forum for coordination to ensure long-term and holistic cooperation on disaster risk reduction and preparedness
- Focus on natural hazards
- National initiative + meets the commitment according to HFA
- Representatives from governmental authorities (NGOs? Private sector? Researchers?)
- Proposal by 1st September 2009

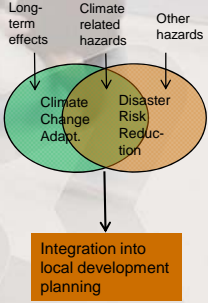




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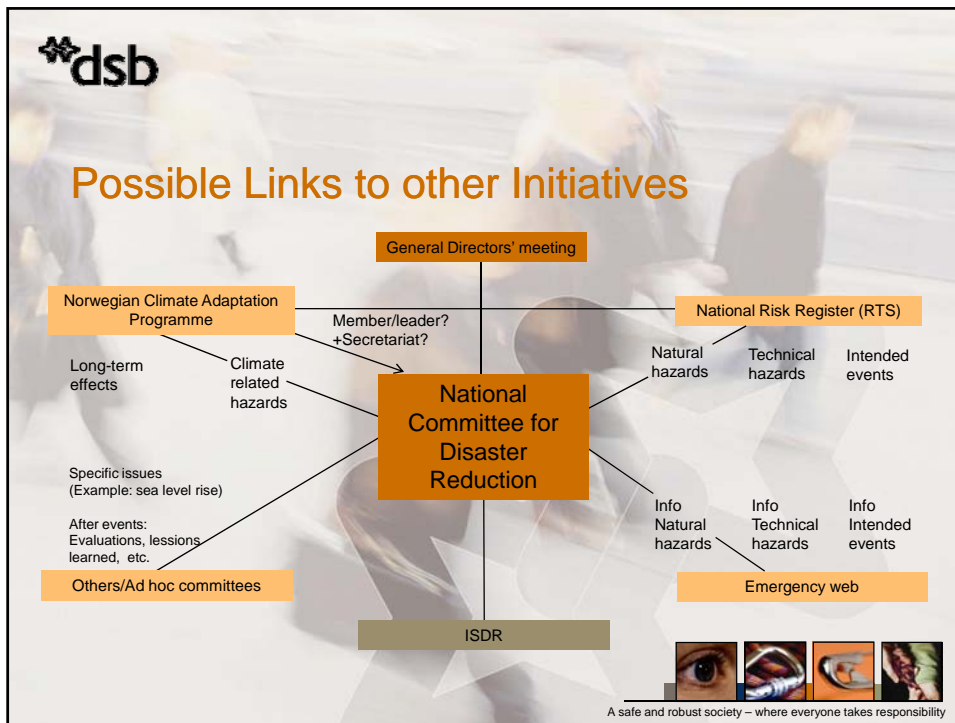
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Overlapping Responsibilities

- DRR/preparedness and climate change adaptation – responsibilities at local level
- Research – dissemination
- Overview – status, trends, analysis
- Legislation – overview, gaps
- Risk communication – planning for the unknown
- Clarify roles & responsibilities – sectors & authorities
- Scenarios – knowledge, but not answers
- International cooperation – risks & challenges across borders

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Thank you!

- More information:
 - www.dsb.no

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