



MILJØVERNDEPARTEMENTET

Climate change
adaptation
globally and in
Norway

BaltCICA

State Secretary
Heidi Sørensen
Bergen 11.05.11

Foto: Marianne Gjerv

Science is clear. Our climate is changing beyond natural variability. The climate is changing rapidly and with a scope which is unprecedented in historical time. These changes are induced by our emissions of green house gases.

Climate change must be met by emission reductions and adaptation



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UN's panel for climate change alerts that a rising temperature will lead to more drought, more intense extreme weather events, heat waves and sea level rise. Temperature rise will result in substantial changes in our natural environment, putting already vulnerable ecosystems under additional pressure. Increased CO₂ concentration in the ocean is already leading to acidification of our seas with unknown consequences.

These impacts will be felt already by 1-2 degrees rise in global mean temperature. We know that the consequences will be more severe as we are climbing up the temperature scale. In a 3-4 degree Celsius scenario, we are not even able to calculate the consequences or the cost of them. We can not take this risk.

Hence – emission reduction that limits temperature rise, must be in forefront of our climate policies, globally and nationally. At the same time we need to cope with the risks that unavoidable global warming will cause.

The unequal burden of climate change



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Photo: Marianne Gjerv

[Click] The effects of climate change are expected to be particularly severe in regions already prone to drought and in low-lying coastal areas. The mega deltas are also identified as "hotspots" for climate change. Many of worlds poorest countries are located in these regions – and climate change will be an additional burden to millions which already live on the margins.

Water shortage leading to failing crops and food shortage, flooding of cities leaving thousands homeless, are familiar images from developing countries today. Without substantial efforts to adapt we can expect that such events will become a permanent feature of many developing countries.

Internationally, support for adaptation is increasing



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Although poor people are known to get much out of very little and have already a wide range of adaptive strategies, [click] the burden of climate change can not be borne by the developing countries and the poor people alone.

Norway and other developed countries have a huge responsibility to assist the adaptation in developing countries. Internationally, support for adaptation is increasing. In the international climate negotiations in Cancun last December the developed countries committed to raise 100 billion USD to address climate in developing countries, including climate change adaptation. Norway has substantially increased support for adaptation the recent years, and in the new Environment and development Whitepaper the government signals enhanced efforts to support adaptation in developing countries.

Planning for an uncertain future

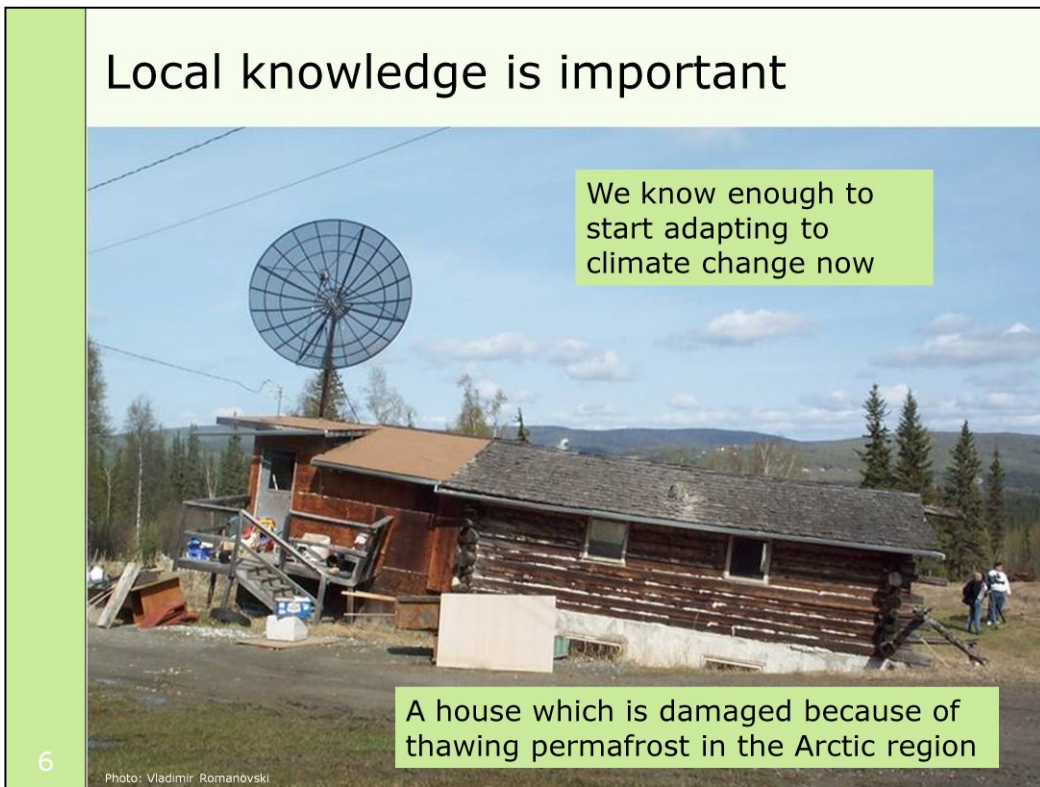
We have tools available to handle uncertainty today. We need to integrate climate change into these tools and develop new ones where needed



We take decisions every day that will last for decades, even centuries. If climate change is not taken into account in these decision, we will risk lives and loss of substantial material assets.

Uncertainty is often perceived as a barrier to adaptation and a frequently asked question is: adaptation to what? The research is telling us that we will never get that full certainty. Climate models and projections are associated with uncertainty and that the uncertainty is increasing as the projections are downscaled. Also while the climate is changing, the society is changing too. Nevertheless, we know the trends and we have an increasing body of knowledge of the impacts and we handle uncertainty in our planning every day. [Click] We have tools available to handle uncertainty today. We need to integrate climate change into these tools and develop new ones where needed.

Local knowledge is important



We often **speak about climate as if it was something unfamiliar** – on the contrary – climate has been a condition for our livelihoods since the beginning of times. In fact, if you ask an old farmer, he would probably be more knowledgeable about the local climate than the meteorological office. When we look around, we often see that old buildings are adapted to local climatic conditions. Hence, we have a lot to learn from local and traditional knowledge. What we also see, is that knowledge about climate has become less important for decision making the past decades. We often plan as if climate did not exist. Other more pressing concerns or interests are give priority. In an area of climate change we must make use of traditional knowledge and put climate higher up on our decision making agenda!

My point is: “Wait and see” is not an option , [click] we know enough to start adapting to climate change now and we have already tools available to address impacts of climate change. We need to pick these “low hanging fruits” as opportunities to adapt.

In Norway's adaptation strategy and the initiatives taken so far, picking these “low hanging fruits” as opportunities to adapt have given a kick-start to climate change adaptation in many areas.

[Click] In this picture, we can see a house which is damaged because of thawing permafrost in the Arctic region.

Local impacts – local solutions



[Click] Climate change impacts and our vulnerabilities towards these impacts are highly local and contextual placing our municipalities and communities to the core of adaptation policies.

How do we facilitate local adaptation processes? In Norway we have taken a learning – by –doing approach. In practice we have had two thoughts in the head at the same time. While building a solid knowledge base, the first adaptation activities on the ground have been initiated.

Getting a head start by working together – Cities of the Future



"The Cities of the future" is a unique collaboration between the Government and the 13 largest cities in Norway. [Click] Bergen is one of these cities. The program aims at improving the quality of life while enhancing sustainability of our cities. The program runs from 2008-2014 and has 4 focus areas.

Land use and transport

Consumption and waste

Energy and buildings

Climate change adaptation

The question asked is how the cities can adapt to new climate conditions? The program aims at strengthening adaptive capacity through the development of adaptive strategies, strengthening knowledge on adaptation to climate change and integration of adaptation as an element in the planning activities of the municipalities. The emphasis has been on information on effects of climate change, good examples on adaptation, tools to integrate adaptation in planning, how to handle uncertainties.

Let me point to some interesting findings from the first years of the program.

Mapping vulnerability

Vulnerability assessment shows possible sea level rise and storm surge in the city of Kristiansand

(marked with red)

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Adaptation to climate change were a rather new subject in many of the cities when the program started. Knowledge was needed. Some of the cities had risk and vulnerability assessments, climate and energy plans, flood risk maps, quick clay maps, minimum standards for building locations by the sea, and so forth. Some cities already participated in research programs on climate change adaptation, but for most this is the first time the cities have made action plans for adaptation to climate change.

Mapping areas exposed to flood, wind and sea level rise, slides caused by climate change have been an initial activity for many of the participating cities.

This has already led to concrete results.

Climate proofing in Stavanger



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[Click] In the city of Stavanger, climate proofing the concert hall lowered the cost of the building.

Risk and vulnerability analysis together with cost analysis led to a rising of the construction height from 2.5 to 3.8 meters.

By doing this Stavanger not only made their concert hall more robust towards climate change – but also saved an estimated 70 million kroner. So – adaptation is not always an additional cost – here money was saved!

Sustainable drainage systems



[Click] In the city of Trondheim, the program “Cities of the Future” has supported the establishment of raingardens as part of the development of sustainable drainage systems.

This has led to improved biodiversity, recreational areas as well as natural water flow.

To sum up:

Evaluation of the Cities of the future concludes that so far: The knowledge of adaptation to climate change has increased in the municipalities.

The municipalities are better organized to manage adaptation and they now have and use methods and tools in order to get better and good basic for political decisions.

We believe that the Cities of the Future is an example of good practice on adaptation that may prove to be useful not only for the participating cities, but for many other municipalities.

Also, other initiatives and projects have been taken to strengthen adaptive capacity at local level.

Providing tools for adaptation

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Source: Ministry of the Environment

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The Norwegian Climate Change Adaptation Program was established in 2007, with the aim of providing an information base for practitioners and enhance cross-sectorial coordination.

One of the results is the clearing house that provides advice, good examples and "navigation system" for obtaining adaptation related information. Recently a guide for adaptation was launched that will be a tool for getting started on adaptation at municipality level.

Building knowledge: "Adaptation to a changing climate"

A Norwegian report deals with the impacts and consequences of climate change and what we as a society can do to adapt



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At the same time we are developing our national policy. In 2008 the government commissioned the first national review of the consequences of climate change for Norway and the need for adaptation. The report, which you will be presented tomorrow, provides a comprehensive overview of consequences for different areas and sectors in Norway. It also points to the key link between emission reductions and adaptation.

Towards a coherent national policy for adaptation



A white paper will be targeting the cross-sectorial adaptation needs as well as clarifying the roles and responsibilities for adaptation

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Photo: Trond Isaksen, DGB

We are now in the process of taking the next steps in forming a policy on adaptation in Norway. Although not settled in the government, we aim at presenting a white paper for the parliament next year. [Click] The white paper will be targeting the cross-sectorial adaptation needs as well as clarifying the roles and responsibilities for adaptation.

International cooperation



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Climate change is a global issue. Although adaptation is highly contextual, the process of adaptation will require regional and international cooperation. Let me mention the acidification of the seas and coral bleaching as one example.

But, not only do we share resources and concerns. In a highly interdependent world, we need to cooperate to ensure that we collectively are able to meet the challenges of climate change. Under the Climate Convention the establishment of a Framework for Adaptation aims at enhancing adaptation for all countries. It is in particular a need to strengthen the poorest and most vulnerable countries capacity, in order to cope with climate change.

Although I have stated that climate is nothing new – and that we have a lot to build our adaptation efforts on – adaptation to climate change is a reasonably new field for us. We are very much in a learning phase.

Our experience is also that we have a lot to learn on how to approach adaptation, both from our close neighbours and from those that we would normally not expect to have that much in common. [Click] Many Strong Voices – is a research and outreach program that links knowledge from Arctic to small island states. It is an interactive learning arena that goes beyond the north – south divide that we see in many areas.

Thank you!



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Photo: Marianne Gjerv

I am confident this conference will provide a good learning platform for researchers and practitioners involved. I wish you all the best for the days you are here.

THANK YOU!