Adaptation to the climate of the future

The climate in Denmark is becoming wetter, warmer and more extreme. It is imperative that we make long-term decisions today.

The climate is changing

Greenhouse gas emissions are changing the climate. Over the next decades, Denmark will experience increasing temperatures and water levels, and new patterns in temperature, precipitation and wind will lead to more extreme weather.

These changes will bring both advantages and disadvantages with them. A longer growth season will open up for greater yields in agriculture, but will also mean better conditions for pests. Milder winters will entail less energy spent on heating, but may lead to more problems with the indoor climate because of higher humidity levels. Higher water levels and more cloudbursts may lead to greater risk of flooding.

We must adapt

Denmark is working hard to reduce its greenhouse gas emissions. However, even if we completely stopped emissions the climate would continue to change for the next many decades because of emissions so far. This is why we must adapt to climate changes.

We can do this by:

- securing drainage of rainwater in towns
- protecting coasts against erosion and rising water levels
- securing buildings against storms and flooding
- finding methods to manage new types of pests
- improving allergy and heat-wave emergency response
- phasing out red pine and planting new tree species in forestry
- adapting catch methods to new fish species in fisheries
- securing houses against flooded basements
- preparing water management plans taking account of climate changes
- avoiding new buildings in areas where there is a risk of flooding
- securing better water drainage for roads and railways

Danish strategy for climate adaptation

The Danish strategy for adaptation to a changing climate stresses that we all have a responsibility with regard to climate change – ministries, municipalities, businesses and the individual.

Adaptation should be an ongoing process, and initiatives should be planned in connection with long-term decisions. This should help render decisions more tenable and minimize or completely avoid problems or costs later on in the process.

Primary initiatives of the strategy

- A targetted information initiative has been la unched via the Knowledge Centre for Adaptation to Climate Change and the portal www.klima tilpasning.dk. The portal provides information and tools based on authoritative, quality-assured climate data.
- A research strategy to enhance and co-ordinate research in climate adaptation and development of socio-economic models and tools.
- A stronger organisation: nine ministries, Local Government Denmark and Danish Regions are working together to implement the strategy and coordinate initiatives for climate adaptation.

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www.klimatilpasning.dk

This portal provides Danish citizens, authorities and businesses with easy access to information on climate changes and their consequences within a number of areas. The portal will be updated regularly so as to provide an even better basis for taking timely action when dealing with climate changes in the future. It includes practical advice on what to do and information on the most recent research. It also includes examples of how municipalities, citizens and enterprises have implemented initiatives so as to adapt to climate changes.

Examples of climate adaptation

Knowledge about and experience regarding climate adaptation are not aggregated by one person or one institution, but by all the players involved. This is why it is so important to work together and to share knowledge. The climate adaptation portal is a key platform for this knowledge sharing; the different players share their experience on the portal via case studies etc.

Case 1: Interactive coastal protection on the island of Lolland

The island of Lolland is one of the most low-lying areas in Denmark and is extremely exposed to rising water levels and storm surge. However the authorities on Lolland do not just view these climate changes as a threat, but also see them as a challenge and an opportunity to grow.

Photograph:
Digging out a basin for algae cultivation at Onsevig Climate Park

The project Onsevig Climate Park is an example of this, combining climate adaptation and reduction of CO_2 emissions. An example is the algae basins for research that have been established behind the traditional primary sea walls – what the Lolland authorities call interactive coastal protection.

Case 2: Strategic climate adaptation in Greve Municipality

After several massive floodings in the municipality of Greve, the local authorities have prepared a strategy for climate adaptation that includes a sophisticated computer model. The model simulates water levels in sewers and water courses which, when combined with data on altitudes in the municipality, can be used to adapt the drainage system to climate change. The objective of the strategy is for the municipality's drainage system to be able to manage a 30 per cent increase in precipitation and only be filled to ground level once every ten years.

Photograph: Flooded holiday home at Gnibe, Sjællands Odde.

Case 3: Holiday-home owners build sea wall

In 2006, holiday-home owners at Gniben, Sjællands Odde, experienced massive flooding and more than 100 low-lying holiday homes were flooded. This was the second time that this happened in a six year period. Today, the home owners have applied for permission to build a 1km long and 2.3m high sea wall to protect their holiday homes.

Read more at www.klimatilpasning.dk

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