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Mobile Applications for
Emergency Response
and Support

MAPPERS

Frederikssund-Halsnæs Brand- & Redningsberedskab



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MEETING

Frederikssund Halsnæs Fire & Rescue Service (FHFRS)

8-9 December 2014

Frederikssund – Denmark



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Future climate



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- **More rain.** More rain in winter and less in summer. The summer season will include both periods of drought and heavier downpours.
- **Milder winters.** Milder and more humid winters. The growing season of plants may be prolonged.
- **Warmer summers.** Warmer summers with a risk of more and longer heat waves.
- **Higher water levels.** A general increase in water levels is expected for the seas around Denmark.
- **More wind.** More powerful storms can be expected.



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Heavy Rain 2011 - Copenhagen



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2nd July 2011
140 mm rain in 4 hours in Copenhagen
90.000 flood damage
Price
830.000.000 Euro



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Autum Storms



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Allan – 28th October 2013

Bodil – 5th and 6th December 2013



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The Storm Allan



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The Storm Allan – 28th Oktober 2013:



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The Storm "Bodil" - Situation



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The Storm "Bodil" - Regional



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Strong wind

High water
level



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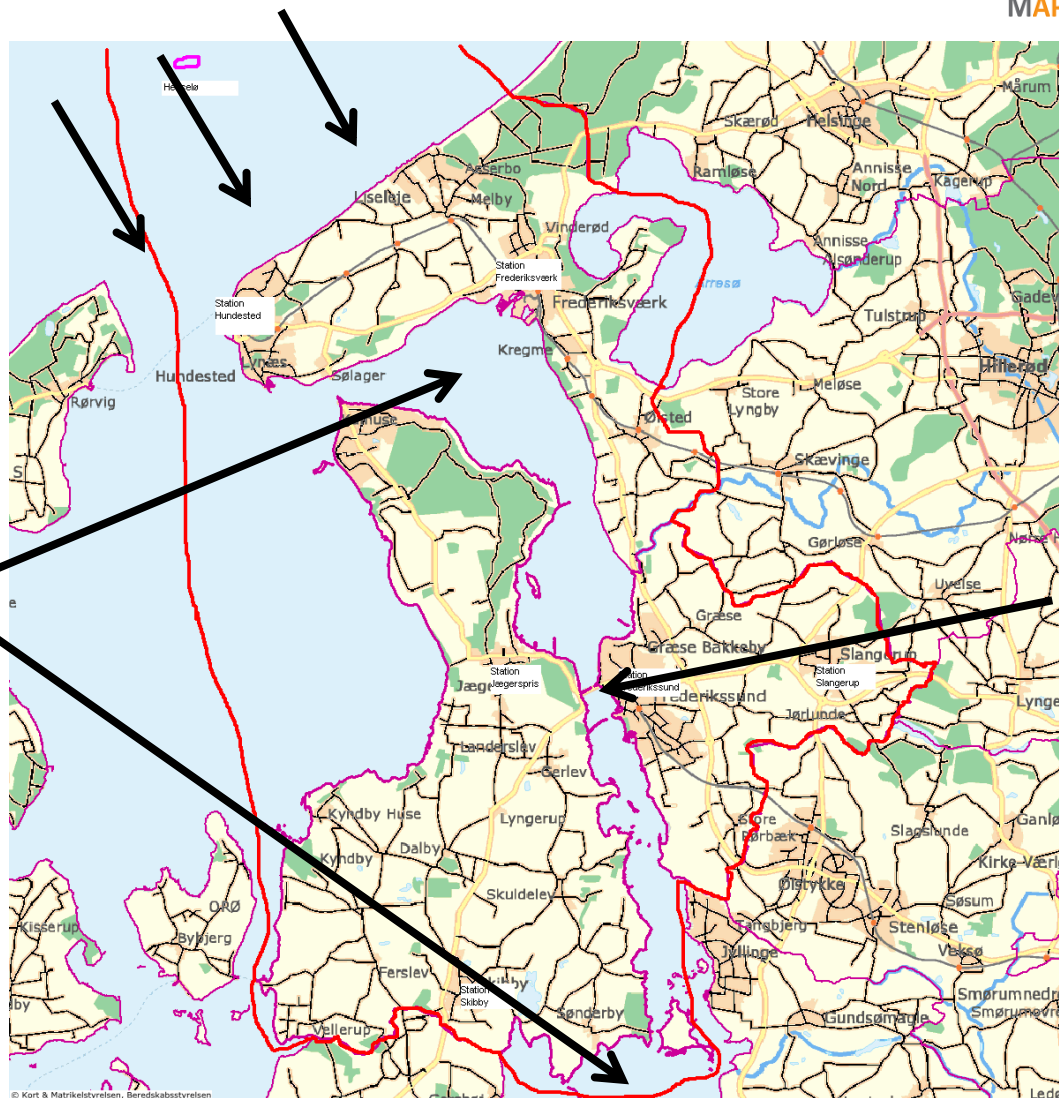
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The Storm "Bodil" - Lokal



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Strong wind

High Water Level
2,06 m above
normal

Closing of
Kronprins
Fredriksbro
10.15 am



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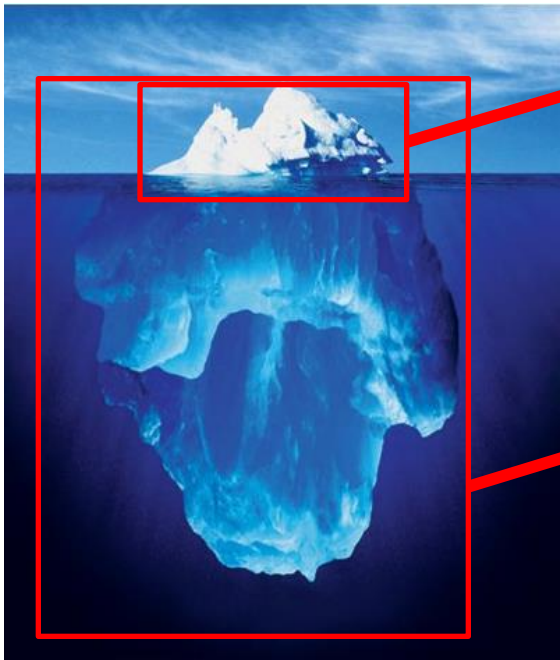
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Preparedness overall



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The cars with flashing blue lights –
Fire and Rescue Service
Events that you read about in the news

The total incident





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The Storm "Bodil" - damage



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The storm "Bodil"

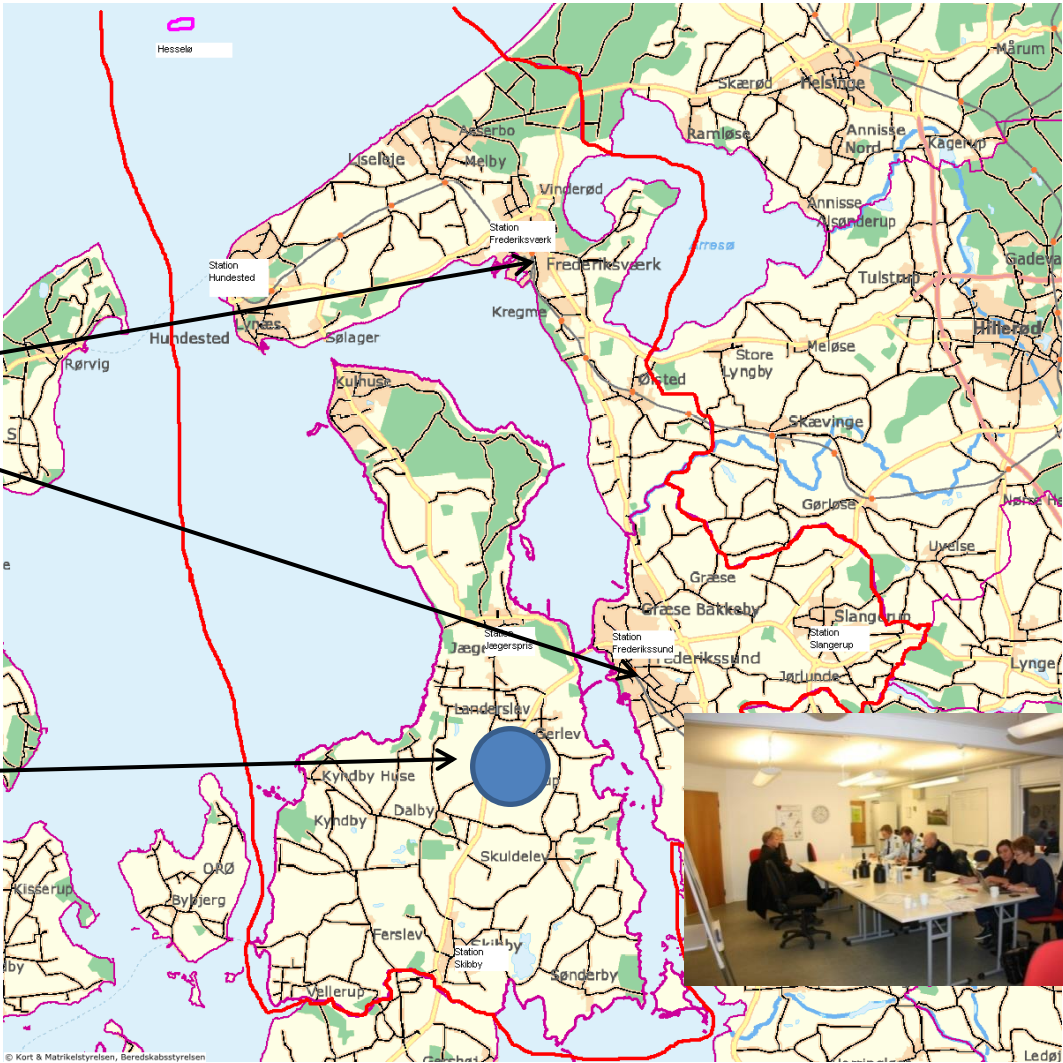


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Command
Post + Local
crisis
management

Command
Post



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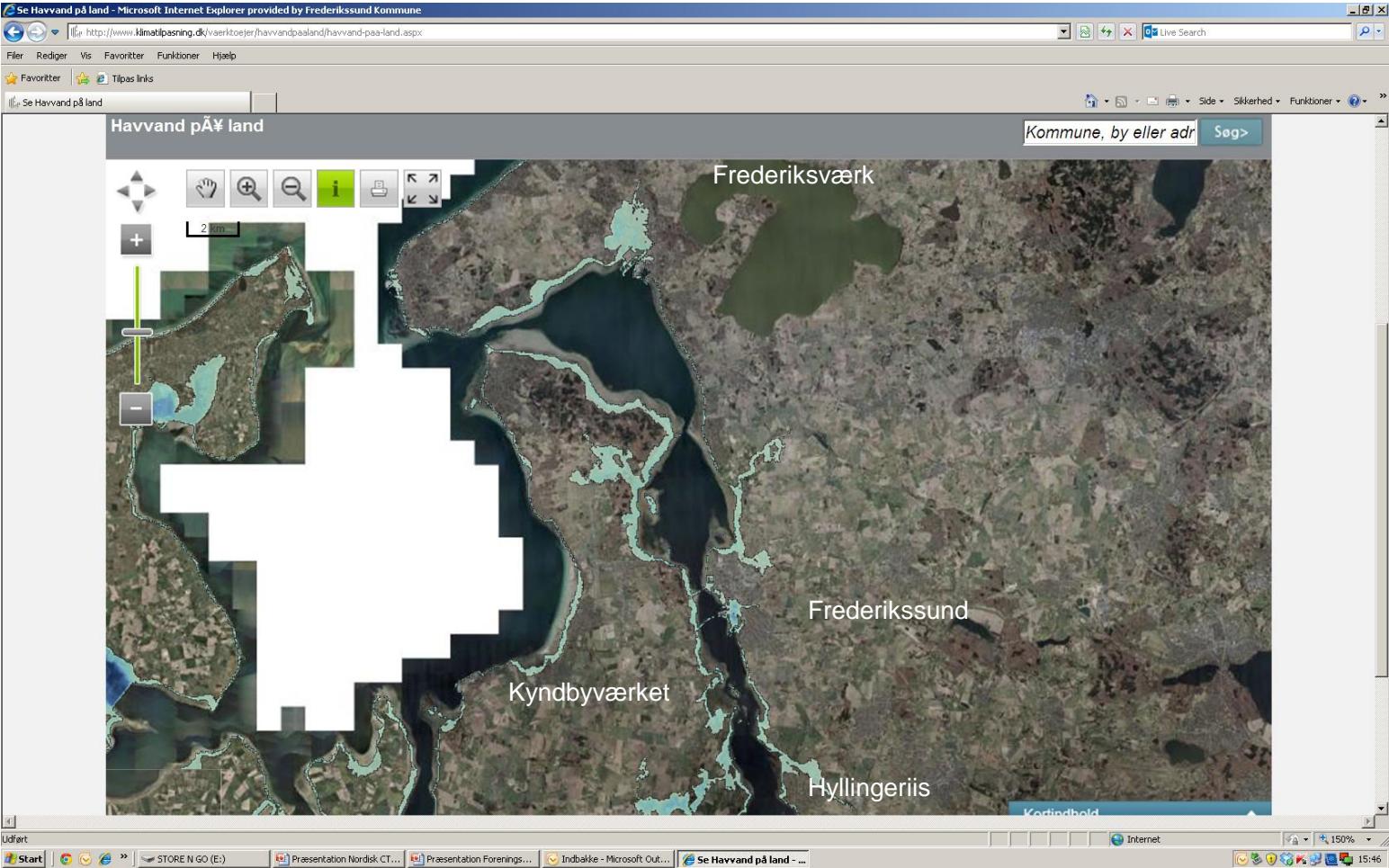


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The Storm "Bodil" – Flooded areas



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The Storm "Bodil" –Frederikssund objects



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Se Havvand på land - Microsoft Internet Explorer provided by Frederikssund Kommune

http://www.klimatilpasning.dk/vaerktoejer/havvandpaaland/havvand-paa-land.aspx

Filer Rediger Vis Favoritter Funktioner Hjælp

Favoritter Se Havvand på land

500 m

Evacuation

Haldor Topsøe

Hospital

Shoppingcenter

Municipality Christmas lunch/party



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The Storm "Bodil" –Hyllingeriis



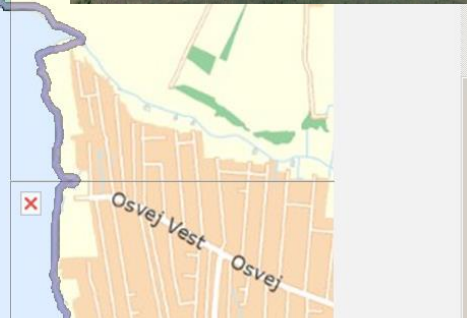
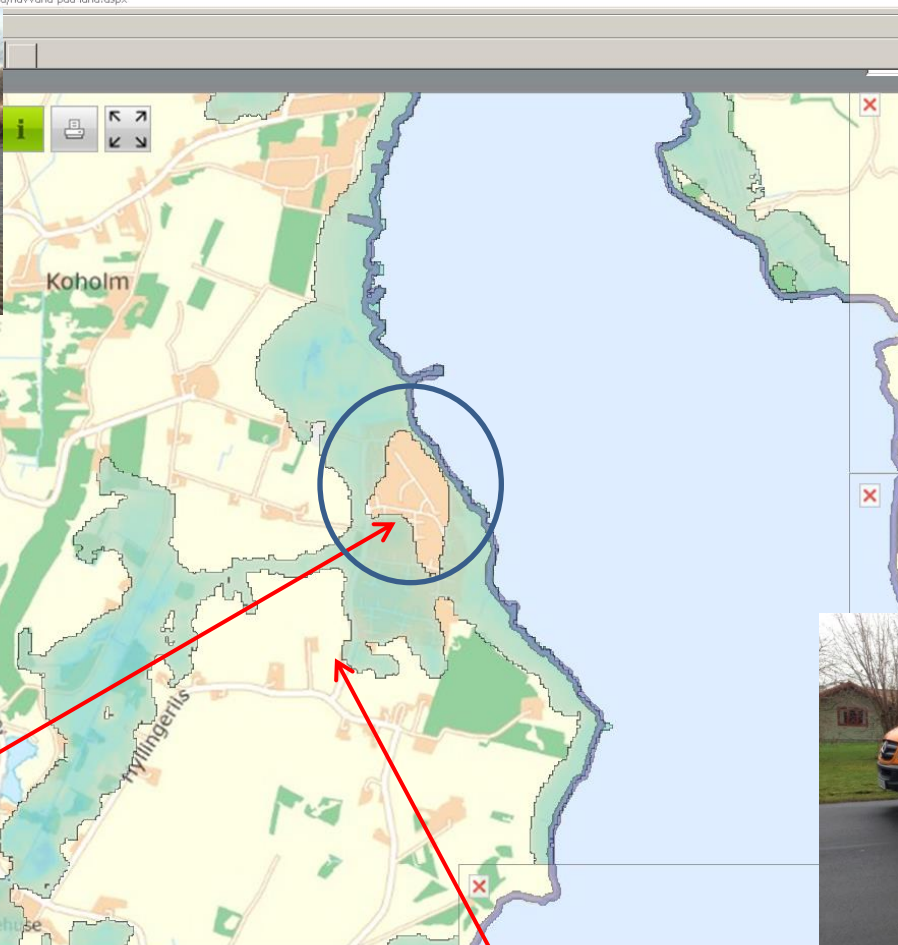
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Rescue/
Evacuation

Command
post



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The Storm "Bodil"



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Evacuation
center

Evacuation
center

Evacuation
center



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The Storm "Bodil" - incident



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The voluntary emergency



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flood-cafe



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World Economic Forum's (WEF) 2011 Report titled "*Global Risk Landscape*"

**Flooding is one of the top ten global risks by
likelihood and impact combined**



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Climate adaptation plans



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Denmark must be climate-proofed. It is the conclusion of the last summers rains. The government has proposed a systematic approach through national and local action plans. This means that municipalities within two years must have made a local action plan for climate change adaptation.



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Presenting the danish website; www.klimatilpasning.dk

- **What is it about?**
- **What can it do?**
- **How can we use it?**



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What is it about?

- **Developed by the Task Force on Climate Change Adaptation under the Danish Ministry of the Environment.**
- **Provides information about the newest research and development within climate change adaptation in Denmark and abroad.**
- **Provides graphic representations of climate.**
- **Six areas; *recent, sectors, knowledge, tools, Task Force and about us.***
- **Three main areas; *citizens, municipalities and business.***

www.klimatilpasning.dk



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What is it about?

Area 1 – Citizens

- **Information about relevant climate changes for citizens.**
- **The future climate for Denmark.**
- **Preparation – for you and your house.**
- **Guides and advices.**



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What is it about?



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Area 2 – Municipalities

- **Areas of focus as a municipality.**
- **How to make a climate change plan.**
- **Tools to simulate climate changes.**
- **Legislation, departmental orders and planning.**
- **Sharing of climate change plans for municipalities.**



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What is it about?

Area 3 – Business

- **BusinessWizzard**
- **Advices to prevention and minimizing risks.**
- **Grants to climate adaption.**
- **Inspiration from others.**



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What can it do?

- **Provides a wide range of tools.**
- **Visual and interactive guides, advices and methods.**
- **"Seawater on land"**
- **Demonstration.**

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How can we use it?

- **Climate change plan.**
- **Areas of focus.**
- **Which precautions to take.**
- **Prevention and preparedness.**



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Prevention



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- Streams and rivers must be cleaned.
- Water must be stopped inside the country using rainwater tanks designed as wet meadows near streams will delay the water outlet towards the coast, so it runs over a longer period.
- The municipality's future local planning will focus on rainwater tanks
wet meadows and green outer areas.
- Sewage plan must ensure adequate dissipation capacity
- Reinforcement of dikes as a protective measure.
- The local planning must ensure that water management situation is included in the total development plan, for example by setting higher terrain elevation for new construction.





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Thank you for your attention!

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