

Protecting the small Danish islands against future climate change



Key recommendations

The recommendations below are based on the findings from a three-year Nordic research project that examined how the small Danish islands currently deal with flooding, and how the islands can best prevent and withstand the future consequences of extreme weather.

- The islands need help and support to build stronger local preparedness. Most islands already have fire preparedness, and their responsibilities can be expanded to include prevention and response related to extreme weather. This can be done by giving local rescue services resources to help islands develop emergency plans and support the organization of such preparedness.
- There is a need to look at whether the legislation regarding the maintenance and construction of dikes on small islands can be simplified, so that it is easier to understand and follow. Alternatively, a scheme could be established to provide islanders with advice and practical help in preparing correct applications to send to the authorities.

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The valuable but threatened Danish islands

Today, Denmark's small islands face a double challenge when it comes to improving their preparedness for extreme weather. They are sparsely populated, and are therefore not always prioritized when authorities invest in flood protection and other types of climate adaptation measures. And during extreme weather, they are harder to reach for emergency services on the mainland, as one of the first things to be affected by storms and high tides is ferry traffic. This means that when it comes to both preventing floods and taking action when they happen, islanders are often more alone than people on the mainland.

The need to change these conditions is great, as many of Denmark's 400 islands will feel the effects of climate change in the future. In a future with higher sea levels and more storm surges, large parts of the islands will experience regular flooding. According to DMI forecasts, water levels around Denmark will rise by up to one meter within the next hundred years, and the number of storm surges will be up to seven times greater than today. Denmark has more than 8,000 km of coastline and will therefore need to prioritize which areas we can and will protect. In this race, the Danish small islands are at risk of losing out.

Denmark reaps many benefits from inhabited small islands. The people on the islands are very attached to where they live and cannot imagine living anywhere else. Right now, there is a lot of pressure on Denmark's major cities to make room for all the newcomers. Therefore, there is value in making it attractive to live outside of the larger cities, for example on the islands. In addition, the islands have great value as nature and vacation areas. All these are arguments for not overlooking the islands' challenges in relation to future flooding.

Key Findings

- Many small islands in Denmark are particularly vulnerable to flooding in the future.
- Small Danish islands are not prioritized when municipalities allocate funds for flood protection and climate change adaptation due to their small populations.
- When the water level is high, the small islands are often left to fend for themselves, as the emergency services prioritize helping elsewhere first, and often have trouble reaching the islands.
- There is a tradition on the islands to fend for themselves, but right now they find it difficult to do anything due to existing coastal protection legislation and rules related to being located in a Nature 2000 area.
- All islands have a fire emergency response team, but most of these emergency response teams only deal with fire, and there is no preparedness for extreme weather.

Possible Solutions

There are two ways that the risk of flooding and the damage it causes can be reduced on the Danish islands. Physical measures can be taken, such as building dikes, securing existing buildings and ensuring that no construction takes place in low-lying areas. Alternatively, emergency response teams can be reinforced, so that they can act to minimize damage when warnings of high water levels are issued.

Better opportunity to get permission for flood protection

Today, it is a private responsibility to protect your own land and property against flooding, and islanders are aware of this. However, many find it difficult to get permission to do something for themselves.

One of the reasons is that the shore protection line applies up to 300 m inland, and for many smaller islands, this means that virtually the entire island is covered.

At the same time, many of the smaller Danish islands are located in Nature 2000 areas, which have even stricter rules for what can be built and altered. The fact that Denmark has a very well-preserved coastal nature and free access to it in most places is due to ambitious nature conservation legislation.

In order to get permission to make changes to coastal areas, the consequences these changes will have on nature and people in the surrounding area must be thoroughly investigated and documented. This is regardless of whether there is talk of building a new dike or restoring an old one. This documentation is important, but can also be an insurmountable challenge for people on islands who may not have the time, skills or financial means to get the necessary research done, and the right documents filled out properly.

Today, this means that much of the maintenance of dikes and construction of new dikes on the islands is done with the hope of forgiveness instead of permission. When excavation for new buildings or construction waste is left over, it is common practice in many places to place it on the dikes. In practice, the current legislation means that on many small islands, dike construction and maintenance still takes place, but without being coordinated and thought out together. In cities, the need for climate adaptation is currently being used in many places as a lever for broader debates on local urban development. This potential is not being utilized on the islands, as the uncoordinated approach to flood protection today does not open up a larger conversation about the future of the islands.

There is therefore potential to explore whether current legislation could be simplified, or whether advice and help could be offered to islanders to apply for the right permits.

“ When it comes to both preventing floods and taking action when they happen, islanders are often more on their own than people on the mainland. ”

Better local flood preparedness

There is also potential to improve the islands' preparedness for extreme weather, and specifically for flooding. Today, flooding is not an official part of the role played by emergency services, and this is reflected in local island preparedness. All inhabited small islands have a voluntary fire brigade, but for most islands, this brigade is limited to focusing on fire only.

This responsibility could be expanded to include extreme weather. In collaboration with local professional emergency services, these island emergency services could be responsible for creating flood contingency plans, monitoring warnings, coordinating efforts such as sandbagging, securing buildings with shutters and plastic or, in more extreme cases, coordinating the evacuation of residents in low-lying houses.



The CliCNord Research Project

The Climate Change Resilience in Small Communities in the Nordic Countries project (CliCNord) focuses on how to increase the resilience of small communities so that they can better withstand the consequences of climate change. The project examines:

- How small communities understand their own situation in relation to climate change
- How they deal with climate-related challenges
- How the skills and resources of local residents can contribute to increased resilience
- When and how local residents need outside help from local authorities and organizations?

<https://www.clicnord.org>

Moving Forward

If you need help regarding how to move forward with this, please reach out to us. The CliCNord research project runs until the summer of 2024, and until then we are happy to provide further information, guidance and assistance.

References

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