



Ministry of Environment  
and Food of Denmark  
Coastal Authority

# The good rebuilding process

Recommendations for rebuilding residential  
areas after flooding



**Interreg**  
North Sea Region  
**FRAMES**  
European Regional Development Fund



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COPENHAGEN



Prepared by the Emergency and Risk Management programme at University College Copenhagen for the Danish Coastal Authority as part of the EU project "Flood Resilient Areas by Multi-layered Safety" (FRAMES).

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# Introduction

When coastal flooding hits a residential area, it affects many people. Houses, gardens and roads are flooded and can be destroyed. When the water recedes and the damage becomes clearer, the residents are left in a situation where they have lost their home and their valuables. Their lives are completely changed – at least for a time. Their home has suddenly become uninhabitable, and they are affected mentally.

Ahead lies the process of rebuilding the hardest hit areas and returning the daily lives of the residents affected to how it was before the flooding. Here, a number of authorities and organisations play central roles: some tasks are clearly defined by law, while others are not – similarly, the delegation of responsibility is often unclear. Regardless, there is an expectation from residents that someone will take responsibility for the tasks which need to be done. These recommendations focus on those tasks that are not clearly anchored.

It is necessary in these cases for the relevant parties in the individual municipality or local neighbourhood to work together to delegate responsibility and assign roles – ideally before the need actually arises. The purpose of these recommendations is to contribute to this process.

## Who are these recommendations directed at?

These recommendations are directed at those responsible for coordinating or planning a rebuilding process in a residential area hit by coastal flooding.

The recommendations are directed primarily at those of you who work for an authority or organisation with responsibility for emergency preparedness or coordination in connection with flooding. It will also be useful knowledge however for others, e.g. members of voluntary organisations or resident groups, who wish to contribute towards a good rebuilding process should flooding occur.

## What is the background for these recommendations?

The recommendations build upon the results of the research project “The rebuilding period after Storm Bodil’s damage in Jyllinge Nordmark in 2013/2014”. In December 2013, 268 houses in the residential area Jyllinge Nordmark were affected by the flooding in Roskilde Fjord in connection with a storm surge. This study consists of a questionnaire taken by Jyllinge Nordmark’s residents, group interviews with the residents of Jyllinge Nordmark who were affected by the flooding and interviews with professional stakeholders involved in the rebuilding process. The following graphs and quotes have all been taken from the study.

The study and the recommendations are drawn up under the auspices of the emergency and Risk Management programme at University College Copenhagen on behalf of the Danish Coastal Authority. This is part of the EU project “Flood Resilient Areas by Multi-layered Safety” (FRAMES).

## Recommendations:

The study’s conclusions offer many recommendations for professional planning work. Here, we have highlighted the nine most important. We have not listed those already defined by law. We have instead selected those ones that are characterised by lacking a clear anchoring and which therefore need to be brought into focus.

- Make plans for the rebuilding
- Create clear assignment of roles
- Communicate with residents
- Be physically present

- Practical assistance
- Offer building advice
- Offer psychosocial support
- Create a network
- Evaluate and implement new teaching

### **How should the recommendations be used?**

The recommendations must contribute towards improving efforts from authorities and organisations that handle the rebuilding processes. The focus is on rebuilding after coastal floods.

The recommendations are thought of as two-fold:

1. both for the pro-active emergency preparedness planning of the rebuilding processes in general, where the recommendations can be used as a starting board for discussions about, as well as decisions for, which initiatives should be included in the emergency preparedness plan;
2. and also to handle the rebuilding process in the best possible way for those in the midst of it. In the chaotic situation created by a flood, the recommendations can be used as a check list and to direct attention to those important initiatives that are often forgotten.



# Make plans for the rebuilding

Good emergency preparedness efforts can be illustrated in the model below (figure 1). The model shows that, in order to reduce both the possibility and consequences of flooding, work is needed to prevent flooding by making systems that facilitate quick preparation by being able to react appropriately when water levels rise – as well as to facilitate a good rebuilding process once the damage has been done. This is illustrated as a circular process, as it is central that learning from previous flooding incidents are included in the preparation of future efforts.

The past years' floods have generated focus on the need for coordinated and well-thought-out emergency preparedness plans. Most of these plans however only cover the period from a flood warning being given until the waters have receded. That is, three of the phases in the emergency preparedness circle. Until now, the final rebuilding phase has not received the same level of attention.

After the flooding of Jyllinge Nordmark, there was a lack of clarity regarding delegation of responsibility, roles and tasks among the authorities and organisations involved. This highlights the need for a well-thought-out and comprehensive emergency preparedness plan for the rebuilding process. That is, a plan that covers the time from the water receding up until the point when the residents affected are ready to resume the lives they had before the flooding - in terms of both physical and psychological conditions. It must be expected for this take up to several years.

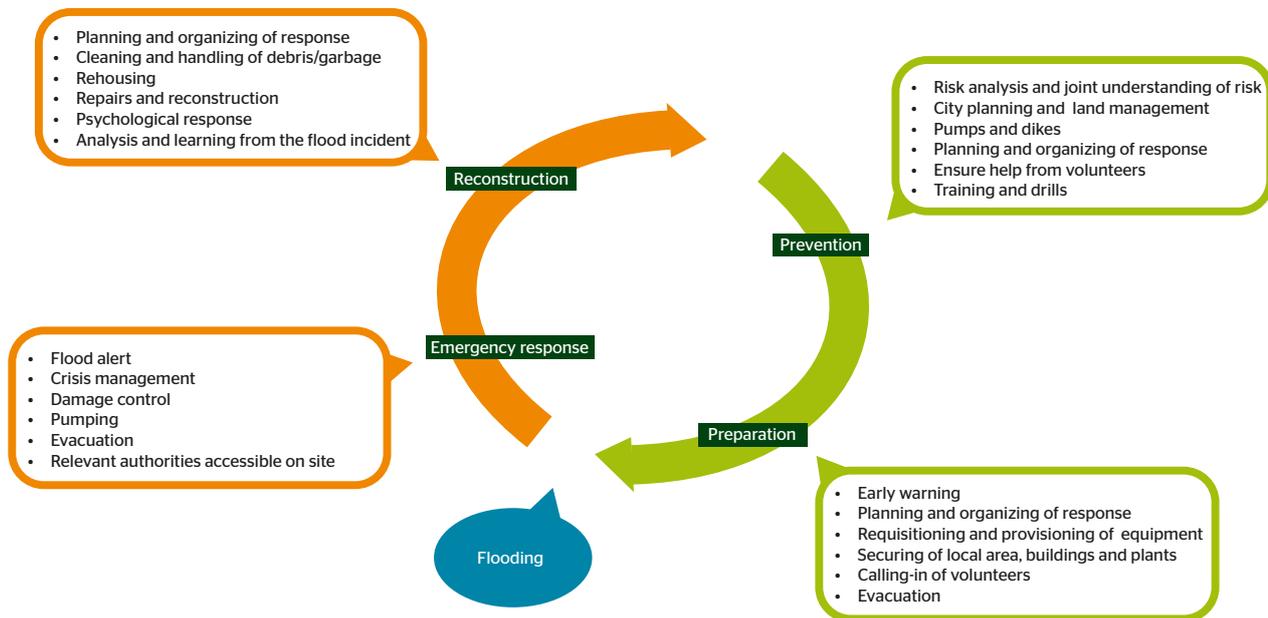


Figure 1: Emergency preparedness process for floods

## Recommendation

- Make a well-thought-out emergency preparedness plan for a rebuilding process:
  - What tasks are there? (if helpful, use the timeline in figure 4 page 15 as a basis)
  - Who is responsible for the individual tasks? Coordinate with all relevant stakeholders.
  - Consider all the elements in this recommendation and discuss whether they make sense in the context of your particular situation.

# Create clear assignment of roles

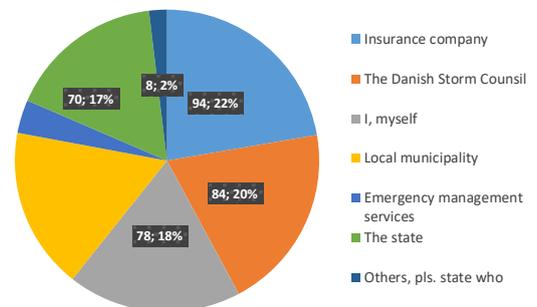
No handbook exists. There was no one who could say, "You need to do this". There was no one who took responsibility. People from the municipality tried, but the municipality was completely unprepared.

(Resident)

The study showed that while the assignment of roles among professionals was reasonably clear during the flooding itself, it became less clear in the rebuilding phase. Who should have informed residents about conditions relating to insurance? Who was supposed to help with what in terms of practical tasks? Who was in charge of the psychosocial efforts?

Among residents, this uncertainty regarding the delegation of responsibility was even more evident. They were unsure about who they should contact about different things and who was in charge overall. After the flooding, many residents also said that they did not know who they should contact first. They missed having one point of contact they could go to with enquiries. The chart below shows the considerable disparity between who residents point to as having primary responsibility for the rebuilding. The residents requested a person/group/organisation, who could be nominated to have overall responsibility and who could coordinate across the different groups. This was backed up by the Red Cross.

Q27 In your opinion who is primarily responsible for the reconstruction phase?



Just as daily coordination meetings are held when dealing with a disaster overseas, these should also take place in a situation like this. There should be daily coordination meetings, where the Red Cross meets with the municipality, emergency services and other stakeholders, just for 30 minutes each morning and says; this is the status, we are busy with this and you are dealing with that. That is, this type of set-up ought to be routine.

(Red Cross)

## Recommendation

- Create a clear delegation of responsibility and roles and communicate this to the residents affected
  - Set up a working group/task force to lead the rebuilding process
- Decide where citizens should go to with enquiries
  - One place and telephone number for affected residents to contact ('one point of contact')
- Involve not only the municipality, emergency services and insurance companies - but also perhaps local schools, scout groups, the local Red Cross organisation, homeowner associations etc.? Involve other stakeholders and assign them roles

# Communicate with residents

What you really need in this kind of situation is, as you say, specific advice. Here is a folder with the things you need to do over the next 24 hours, 48 hours, next week...

(Borger)

After Storm Bodil, many residents whose houses had flooded felt extremely unsure about what they should and could be doing themselves. There was a great wish for more practical information.

- What can and should you do yourself to limit the damage?
- What does the law say in regard to insurance coverage of flood damage?
- How do you best tackle tasks such as dehumidifying, rehousing, financing etc..

Much of this information can be found on different websites or by contacting the insurance companies. Many residents experienced however that it took a great deal of energy and resources to find the necessary information – which they often did not have.

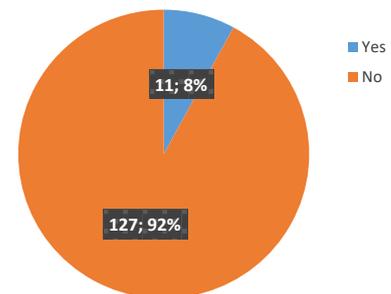
When the flooding happened, the vast majority of them did not know what they should and must do themselves, as the following chart shows.

You cannot therefore expect, as an authority or organisation, that residents will be prepared and aware of what they need to do. A questionnaire showed that 53% of respondents answered that they only received the information they needed after the flooding 'to a lesser degree' or 'not at all'. There is thus a lot of room here for improvement. A greater focus on communicating this type of information would prove extremely fruitful in creating a better rebuilding process for everyone.

## Recommendation

- Form an overview of what information already exists. Focus on making this easily accessible to residents.
- What relevant information is missing? Draft relevant and easily available information to cover those areas where it is missing.
- Find out what information channels already exist – is there a Facebook group for residents in the local area, or do the local sports associations have a mailing list? Plan how these channels can be used to communicate with the residents.

Q13: Prior to the incident, did you know, what you were allowed to do on your own account, as regards rehousing, clearing up etc.?



# Be physically present

I thought that the stunt, which one of the insurance companies made by setting up a trailer down by the roundabout and placing some people there was invaluable for those who had a policy with that particular insurance company. While they might not have been able to help them directly, those residents could at least go down and look someone in the eyes and get some feeling or other of being seen or heard, and I mean... they at least got some help.

(Resident)

For the vast majority of people, having one's home flooded is experienced as a crisis that brings with it a huge sense of insecurity and uncertainty. In situations like these, personal contact should never be underestimated. When you as a professional make an effort to meet residents where they are physically, it creates a very different experience for them – of being seen and heard – than when all they can do is call a telephone number. The effect goes far beyond the practical aspects of providing information.

After Storm Bodil, all the insurance companies could be contacted via telephone, and many employees were called in to receive these calls. Despite this, time after time residents highlight that one insurance company that opted to move its office out to them.

During Storm Bodil, Red Cross took on the job of going door to door to ask residents what they were missing and what they needed, as well as passing on relevant information. This was also seen as a very positive initiative.

## Anbefaling

- Clarify which authority services could be moved 'out into the field'
  - Are there any of these that could function as the aforementioned 'one point of contact'?
- Clarify who will take on the task of going from door to door and generally seeking out residents there where they are for the purpose of giving and receiving information.
  - This could also be a way to convey practical information out to the residents. In the event of power outage for example, this could be the only way to inform people.



# Practical assistance

On 22 December we had a clean-up day, where people could come and help those of us who lived there to clean up, empty our houses, clean the streets and drive things to the tip. People came with cars and trailers from all places imaginable, not just Jyllinge but also much further away. Some people came from Ballerup to help us. My husband was very touched by this. A man showed up with an artificial leg to help him, he stood there and said 'you don't need to do that', but he wanted to help. It was fantastic.

(Resident)

When you're suddenly faced, as a homeowner, with a flooded house, you welcome all forms of practical assistance.

Red Cross offered several kinds of practical assistance during the period after the flooding. Residents with flooded homes were given the opportunity to pick up the things they needed free of charge from Red Cross' charity shops. Immediately after the flooding, Red Cross offered to help people wash clothing and other textiles that had been soaked or soiled by the high water levels. Not in Jyllinge, but in neighbouring Hyllingeris, the Danish Emergency Management Agency set up a tent and cooked food for those who needed it during the first few days after the flooding. This was greatly appreciated, both by those whose kitchens had been ruined as well as those people who were so busy with the clean-up that making food was the last thing on their minds.

After the flooding the municipality established a temporary recycling centre in the flooded area so that homeowners could dispose of refuse more easily. It also offered extraordinary collection of bulk waste about two weeks after the flooding. As a private initiative, local residents who were not affected by the flooding themselves arranged a clean-up day about three weeks after the flooding, as described in the quote at the start of this section.

Residents mentioned other things that they would have liked to have been offered assistance with during rehousing, including storing their things and help to get rehoused.

## Recommendation

- Make a plan for how residents can best be helped with practical matters, such as:
  - Making food the first few days after the flooding
  - Laundry
  - The chance to get essential items and clothing until insurance companies and others come forward
  - Help storing furniture and other belongings
  - Help with the handling and disposal of waste
  - Help with rehousing

# Offer building advice

Quite simply, there were some building contractors that went out of business 1½ years later. Some of them did this to avoid claims being made against them from injured parties. - Injured parties who believed the contractors' work had been substandard. We normally call them cowboy outfits or similar, but they are those sorts of people who think, "well, there's some public money up for grabs, I'd like a piece of that."

(Loss adjuster)

When so many houses need rebuilding all at the same time, then there is a big demand for building contractors. The Danish Act on Storm Surges ('Stormflodsloven'), meanwhile, does not cover building advice, but only the specific, elementary repair of damage. This meant that many of those homeowners who were affected were left to coordinate the entire rebuilding of their homes alone, including the daunting tasks of determining which solutions were best, when the house was dry enough for the rebuilding work to commence, how to fill out a building application for the municipality and which building contractors to hire for the various jobs.

Many residents felt that this was a task that they did not possess the necessary expertise to carry out themselves. This led to challenges, as mentioned by both residents and professionals in the study. Many residents noted that they needed to redo many things as a result of shoddy workmanship or incorrect decisions.

This prolonged the rebuilding process. The residents thus asked for help in navigating this. One specific wish was the opportunity to receive neutral, expert building advice.

## Recommendation

- Offer individual, impartial and straightforward building advice, possibly in connection with advice on insurance coverage matters, for example.
- Offer assistance with filling out building applications for the municipality.
- Draw up a plan for ensuring that the flooded residents' building applications and similar can be fast tracked,
  - including making sure that applicants receive good, effective help amending their applications if they do not live up to the requirements.
- Make a list of trusted and established building contractors, both locally and further afield. If this list is prepared before an incident happens, it can help homeowners to avoid falling prey to 'cowboy outfits'.



# Create a network

Neighbourly relations and solidarity are what saved the area. There's always someone who has dealt with some sort of crisis at some point or another, who can help carry the burden... who would know, for example "who do you call to hire a skip?", isn't that right?

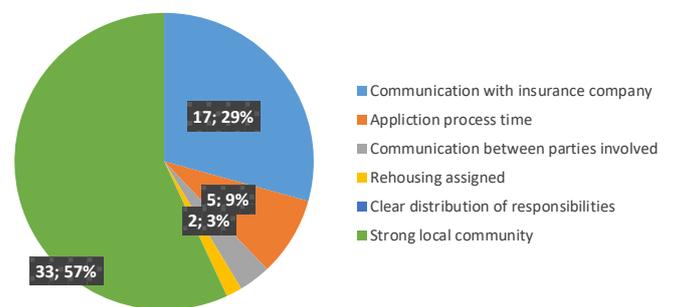
(Resident)

To the question of "what worked well" during the rehousing phase, 57 % answered: "the strength of the local community". This was elaborated upon in the interviews. Neighbours and the local community did not only offer practical assistance, but also acted as sources of information. Much of the information, which the affected residents lacked, they received through their private network.

Different organisations and authorities contributed to creating this network, partly by arranging local residents' meetings or communal dining for affected residents. In the spring, Red Cross hosted an overnight trip to the holiday centre Lalandia for families with children who had been affected by the flooding.

For the residents, these arrangements not only allowed them to meet each other but also - which should not be under-estimated - they felt that someone had noticed them and what they had been through.

Q6 What, if anything, worked well during the rehousing period?



## Recommendation

- Contribute towards building a network between the residents affected, For example:
  - Communal dining
  - Sunday coffee afternoons/mornings
  - Group excursions
  - Shared meetings focusing on dialogue between participants.
- Groups/stakeholders that can be useful in creating a network: Red Cross, housing and homeowners' associations, local schools, churches, sports associations, scout groups and so on.
  - One way of facilitating this could, for example, be that the municipality includes this network creation in its emergency preparedness plans and takes the initiative of involving local associations and organisations in this work. During the rebuilding phase, the local associations and organisations take on the job of carrying out these activities.

# Offer psychosocial support

Because this kind of storm surge, it's not just over and done with like that once you've got your money and moved in and stuff. I think there are a great many out here in Jyllinge who have been affected by it in all sorts of ways.

(Resident)

The flooding also affected many Jyllinge residents psychologically, some more than others. Psychosocial efforts after a flooding that impacts people's homes is one area that is not clearly assigned by law. After Storm Bodil many residents said that they found it hard to get psychological help as the municipality was not prepared for this need; nor was there a plan for who should respond to these enquiries or how.

In the study, both residents and professionals note that a preventative effort immediately after the flooding and in its aftermath could potentially have reduced the psychological effects for many people. Most said that they see this as the municipality's responsibility. Red Cross however points to itself as a relevant actor that could also have played an active role. Some insurance companies, although not all, offered crisis support.

The psychosocial efforts can be seen in relation to the other recommendations here. Many residents mention finding it hard to navigate the rebuilding process while under severe psychological stress. A focus on psychosocial support is therefore positive for the physical rebuilding process as well.

Person 1: When I look back on it, then I can see that I was not my usual self for a whole year. It was like, once I could finally relax and let go slightly, then it all just came crashing down.

Person 2: Instead, I broke down at the very start. We lay there crying that night, from Friday to Saturday, we were just so unhappy. We didn't know what had happened to our home. The not-knowing was awful.

(Residents)

As the quote shows, people react differently, and the psychosocial efforts must therefore be adapted to the individual person.

## Recommendation

- Include a plan for the psychosocial efforts as part of the bigger emergency preparedness plan for the rebuilding.
  - Who is responsible for the psychosocial efforts during the first few hours and days after an incident?
    - Who checks up on residents where they live and offers them psychological first aid?
  - Who is responsible for the psychosocial efforts during the following period?
    - Who is responsible for carrying out a systematic screening of all residents affected in relation to psychological after effects?
    - Who offers psychological follow-up and any necessary treatment?

# Evaluate and implement new learning

In our organisation we have chosen to create an emergency management system that means we set aside resources to learn from our experiences as well. This is possibly one of the challenges, where I can come up with a good idea. If you really believe what you say, then you also need to set aside resources for it. It's fine to make a report, but that doesn't automatically mean something is done about what's written in the findings. You have to be able to implement them.

(Electricity grid company)

Everyone who took part in the study, both professionals and residents, highlight the fact that they were unprepared when the flooding happened, but also that the incident taught them a great deal. Everyone expects that what was learned, and has led to a change in practice, will mean that any future rebuilding after a flood will be much better handled.

Here, it is worth returning to the emergency preparedness process for floods (figure 1). Systematic evaluation and learning is central if we are to become better, at all levels of society, at preventing and preparing ourselves for floods as well as remedying and rebuilding after an incident.

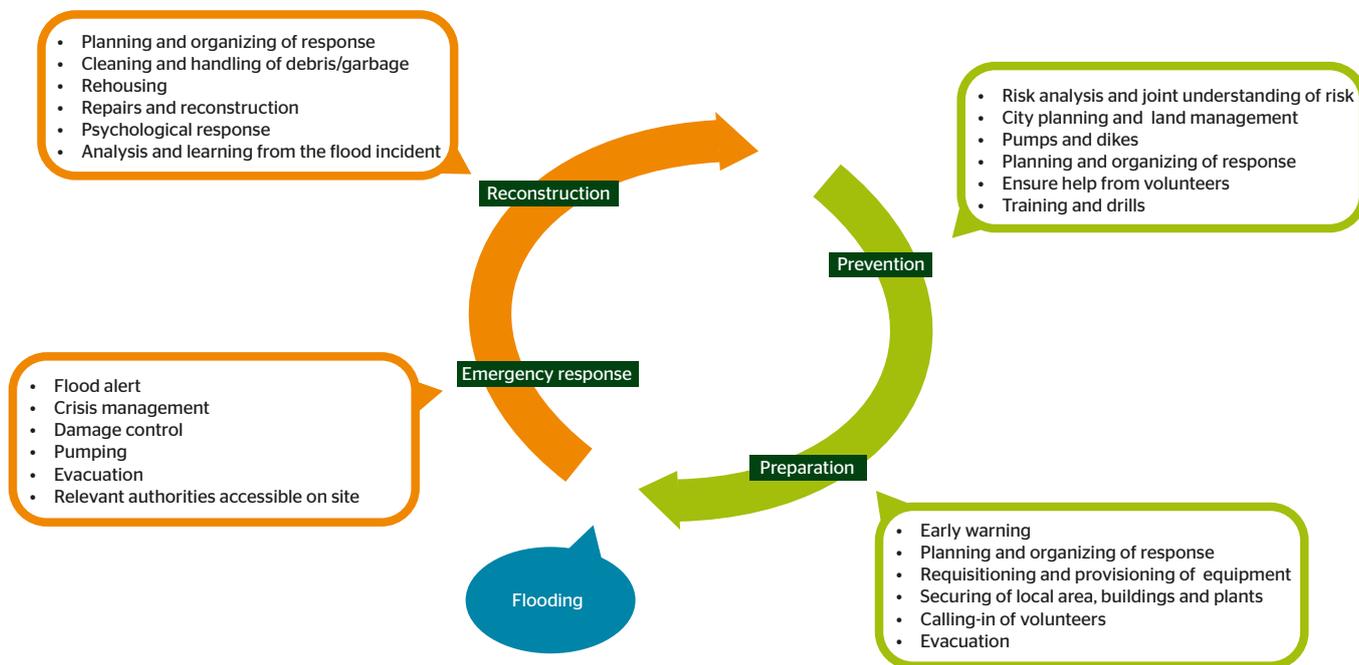


Figure 2: Emergency preparedness process for floods

## Recommendation

- Ensure there is a system in place for evaluation after all incidents.
- Ensure that the evaluation does not just become a report, but that it generates actual learning and changes to practice and plans..

# Who can help with the rebuilding?

Different organisations and authorities have an influence on ensuring the rebuilding of a residential area is done in the best way possible. In some areas of this work the roles are defined by law, but many of the initiatives that are required depend on the decisions that are made by local organisations and authorities before and during the rebuilding process.

The diagram below shows which stakeholders contributed towards the rebuilding process after Storm Bodil.

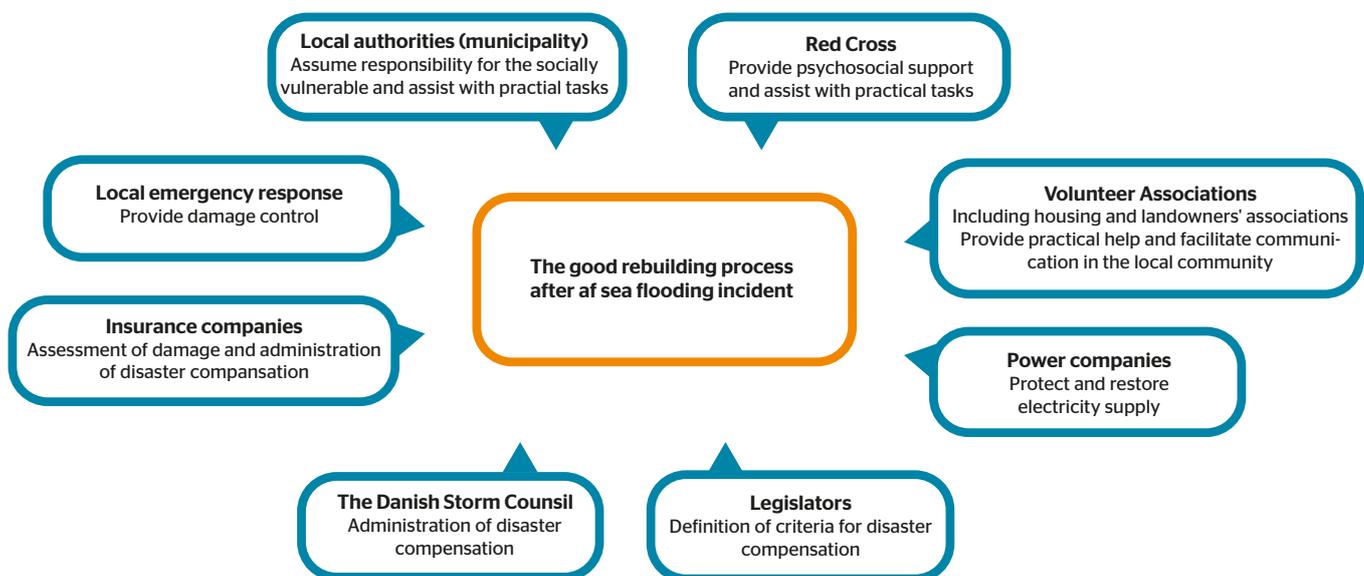


Figure 3: Authorities and organisations, which contributed towards the rebuilding process after Storm Bodil.

The study shows that attention is especially directed towards the municipality when flooding creates chaos. There is an expectation from residents that their local municipality in particular will take responsibility and have an overview - even if the municipality has no actual formal responsibility.



## Which tasks, when - a timeline

When a flood hits a residential area, there are many tasks that authorities and organisations can assist with to create the best possible rebuilding process for those residents affected. While many of these will not be 'necessary' tasks, they are jobs where it will mean a great deal to the residents involved if someone takes on the responsibility and does them.

Anything that removes the uncertainty and 'not knowing'... That's it, really.  
Anything that can help soften the turmoil of the experience is welcomed.  
(Resident)

Some tasks need to be done as soon as the water recedes. Other tasks stretch out over months and others several years into the future. The following model provides an overview of the many tasks that must be completed during the period after flooding.

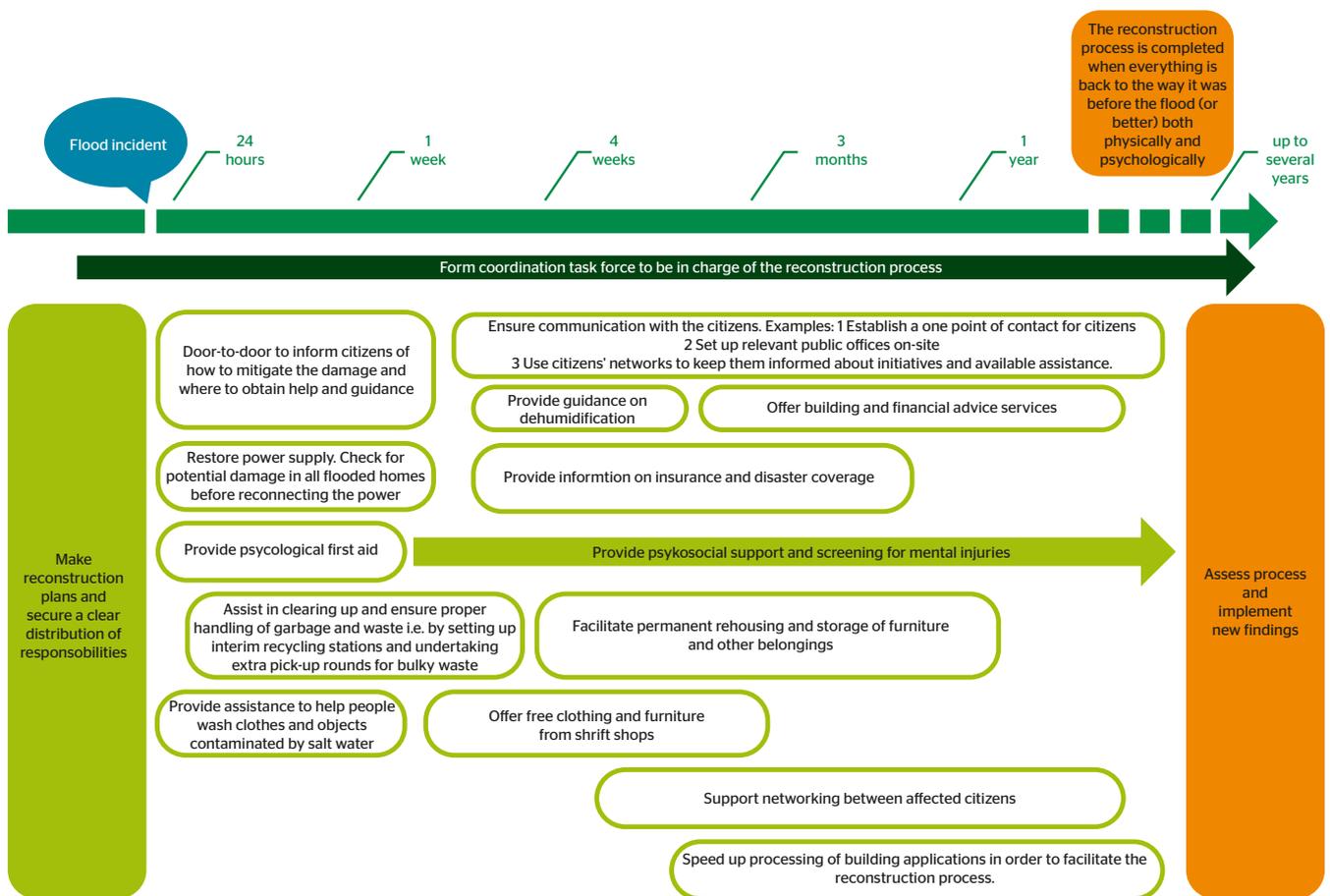


Figure 4: Timeline of the tasks that must be completed during the period after flooding.



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