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**Disaster  
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## NUWCREN SYMPOSIUM 2012

'POST-(FLOOD) DISASTER RESPONSE, RECONSTRUCTION AND RECOVERY'

# Outline

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- ❖ Introduction
  
- ❖ Recap NUWCRen symposium 2012: *'post-(flood) disaster response, reconstruction and recovery'*
  - The Opening...
  - WORKSHOP Resilient Cities
  - WORKSHOP Creating a process to learn from disasters
  - WORKSHOP Community disaster recovery: Dimensions, domains and critical issues
  - WORKSHOP Whole community approach
  - The Closing...

# Introduction

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A flood disaster isn't over when the flood water has subsided or the water has been pumped out of an affected region. Experience reveals that the impact of any disaster will be felt for weeks, months and sometimes even years to come. An appropriate response to the immediate disaster is therefore not just eliminating the cause, but rather ensuring the mitigation of medium and long term adverse effects.

Post-disaster recovery therefore invariably presents a number of challenges and dilemmas, and understanding these issues in advance can assist decision-makers and professionals to better navigate the recovery process. Depending on the nature and scope of the adverse event at hand, the post-disaster phase can be very intensive and complex. A coastal flood in the Netherlands would be a very extensive and complex event. There's a multitude of issues that need to be dealt with and the recovery time will take years. *The goal of the symposium was to exchange knowledge on this subject with different parties (internally as well as externally).* This report is a very brief recapitulation of the symposium and in particular of the workshops that were held.

To all participants of the workshop: ***On behalf of all NUWCRen partners we would like to take this opportunity to thank you once again for your participation and input. Because of you we look back at the symposium as a great success. Thank you!***

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NUWCRen symposium, 2012: *'post-(flood) disaster response, reconstruction and recovery'*

## RECAP



## The opening...

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After Marco Zannoni, Director of COT Institute for Safety, Security and Crisis Management opened the symposium and Roel Feringa, Director of Water as well as Deputy Director General Water and Spatial planning of the ministry of Infrastructure and Environment, Jack Harrauld, Ph.D., of Virginia Tech presented the ministry of I&M with the recently finished NUWCRen booklet *Flood preparedness in The Netherlands: a US perspective*\*.

Then Marco Zannoni opened the floor for the key-note, Kathleen Tierney, Ph.D., professor of sociology and director of the Natural Hazards Center at the University of Colorado at Boulder. In her key-note she eloquently discussed not just crucial elements of recovery processes, but also important misconceptions regarding recovery processes.

Following her key-note, she was briefly interviewed by Arjen Boin, professor of Public Governance and Crisis Management at the Utrecht School of Governance and an Adjunct Professor at the Public Administration Institute, Louisiana State University. The interview was critical and brought to light important realities that have to be dealt with, even though they might not be ideal.



\* '*Flood preparedness in The Netherlands: a US perspective*' can be ordered free of charge by contacting [Saskia Hommes](#), Deltares, phone 088-3357754. This is also the address for more information.

## WORKSHOP *Resilient Cities*\*

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This workshop brought together urban development and emergency management professionals, in order to contemplate the design of flood resilient cities. The workshop consisted of a theoretical introduction, followed by a more practical part, in which the attendants were split into two working groups, to discuss a scenario.

Georg Frerks did the kick-off of the meeting, by introducing the concept of resilience. He argued that a resilience approach required a different form of disaster governance, including the recognition of people's agency and an emphasis on process. He further looked into the physical, social and institutional-organisational characteristics of cities, arguing that these constituted simultaneously a strong need as well as a challenge for resilience-based approaches to disaster. Resilience should, however, be defined beyond mere self-reliance. He recommended 1) to make an inventory of ongoing studies and approaches (indicator-based and qualitative work); 2) to study experiences abroad (US, Asia); 3) to carry out case studies with regard to Dutch situation; and 4) carry out a pilot project in a suitable Dutch location, building on recent experiences gained.

Following this introduction, Joe Trainor described various research approaches to resilience based on a paper DRC professor Benigno Aguirre is writing. The presentation suggested that resilience is typically understood as a normative concept or used to justify the creation of measurable indicators. Trainor also suggested that a third approach is starting to emerge, one focused on the capacity for dynamic responses. This last approach draws heavily on community, networks, and high reliability organizational concepts. Rutger de Graaf then took a planner's approach to resilience, and described various ways in which the concept is a guiding principle in urban planning projects he is involved in. Finally, Chris Zevenbergen went into the difficulty of vulnerability assessments, as a 'terra incognita', as all probabilities are based on past events: what if the system changes? He stressed cities' capacity to resist, as highly dynamic systems, and explained how cities can be made more resilient through 'opportunistic adaptation', seizing the moment the possibly arises to adapt, using the autonomous processes of the city. For instance, 75% of the building stock of the NL will have to be replaced or upgraded in the coming 40 years.

After the theoretical and conceptual introductions, the practical part concerned building a more resilient city in the aftermath of a catastrophic flood, using a scenario in which the city of Dordrecht had been flooded. Interestingly, the two groups developed diverging courses of action, with one group determining that people had to be evacuated and focusing on establishing sufficient evacuation opportunities, while the other group focused on citizen participation, involving them in rebuilding the neighbourhood. This exercise demonstrated the discrepancy between the expectations of governmental actors and citizens. According to the judges, Georg Frerks and Chris Zevenbergen, a combination of the two approaches would probably lead to the most resilient situation.



\* This workshop was organized by COT Institute for Safety, Security and Crisis Management (lead), Disaster Studies (WUR), Disaster Research Center (University of Delaware)

## WORKSHOP *Creating a process to learn from disasters\**

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This session had three objectives:

- First we described the variety of the processes used to document lessons learned from major USA events, emphasizing the diversity of methodologies and organizations involved.
- Secondly we discussed some of the lessons learned archival resources maintained by the US government and US universities and described how to access them.
- Finally we discussed specific lessons learned from US events that may be most applicable to the Netherlands. The major item of interest for the Dutch participants were (1) the difficulty to determining applicable policy lessons due to the variety of sources and lack of meta data, (2) that some critical US resources are restricted to US citizens and would require a resource such as NUWCREN to access, and (3) that social science studies lead the US observers to believe that coastal flooding due to a failure in the protection system would be seen as a technological not a natural disaster. This could lead to difficult relationships between the government and communities/citizens.



\* This workshop was organized by Virginia Tech (lead), Institute for Crisis, Disaster, and Risk Management (George Washington University), Natural Hazards Center at the University of Colorado at Boulder, COT Institute for Safety, Security and Crisis Management

# WORKSHOP *Community disaster recovery: Dimensions, domains and critical issues\**

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Recovery is an under-studied and under-practiced process and important subject and that it a part of the safety chain. This workshop focused on key issues related to recovery at the community level and is intended for those who will be making decisions or providing decision support for post-disaster recovery. After defining recovery and presenting information on the various “domains” in which recovery takes place, the workshop focused on issues that need to be addressed in decision making during the recovery period, including challenges related to social inequality and vulnerability, post-disaster aid programs, financial assistance, recovery goals and objectives, and types of expertise that are needed over the course of the recovery process. Also discussed were overarching recovery considerations such as the need to enhance community resilience, incorporate the reduction of future losses into the recovery process, and encourage long-term sustainability. We talked about the differential nature of the disaster recovery process that involves restoring, rebuilding, and reshaping multiple aspects and domains of community life, including housing, economic activity, critical infrastructure, public and private structures, and ecosystems, as well as less tangible features of social life, such as the psychological well-being of community residents, social relationships, and overall quality of life. These different dimensions of recovery are interrelated, but coordination among them is often difficult to achieve. Post-disaster recovery invariably presents a number of challenges and dilemmas, and understanding these kinds of issues in advance can help decision makers better navigate through the recovery process. Post-disaster decision making can also be improved through pre-disaster recovery planning. Participants were presented with a post-flood scenario (Dordrecht is sinking) and a “damage and needs” report about the city of Dordrecht. Participants were asked to determine with us what strategic issues and dilemmas can be identified and what parties are involved in dealing with these issues and dilemmas. Discussion was about the role of the government in recovery planning and differences and similarities between US and The Netherlands.

## **Recommendations:**

- Increase knowledge, skills and attitude toward post-crisis damage and needs assessment and recovery and reconstruction planning.
- Focus on a holistic, comprehensive and whole of community approach.
- Identity lessons learned elsewhere and develop best practices for the Netherlands.
- Stimulate research, awareness raising, knowledge sharing, education, training and exercising.
- Develop a way to share information concerning post crisis damage and needs with community members.



\* This workshop was organized by Natural Hazards Center at the University of Colorado at Boulder (lead), TNO, COT Institute for Safety, Security and Crisis Management

## WORKSHOP *Whole community approach\**

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The workshop addressed the introduction of the whole community approach as a new emergency management philosophy in the USA and compared it to the Netherlands. The whole community approach was described by Lucia Velotti, explaining how the approach entails a new, holistic view of the community in disaster management, intended to overcome one-way, top-down decision-making processes, involving the community as co-creator of the disaster management system. Georg Frerks then described the situation in the Netherlands, how the government aims to increase the 'zelfredzaamheid', or self-reliance of citizens, and how there is no empirical basis for the myths about citizen behaviour during disasters. Still, however, disaster management is a strongly top-down process, and the relevance and advantage of citizens' involvement is only slowly being realised. There is much to be learned of the US and also the developing world in terms of involving the community.

Interestingly, behind the different approaches, there lie diverging understandings of the concept of community. In USA, the community refers to all those people working toward a common goal as members of a community, while in the Netherlands the concept is not clearly operationalised and so far hardly used in disaster management practice. Finally, the concept of 'zelfredzaamheid' shows an individualistic bias as compared to the wider, societal focus that community entails in the USA.

During the discussion, the whole community approach was deemed viable in the Netherlands, even if in need of further research aimed at understanding obstacles toward the creation of a more integrated and therefore resilient societal system. In particular, the discussion covered the use of social media on the part of the government to strengthen the relationships with citizens, the need of creating links with citizens without institutionalising them, how to identify hidden citizens' needs and how to recognise and strengthen what is already working well in a community.

The workshop further discussed experiences in the Netherlands such as the efforts of the Province of Zeeland in reaching out to businesses and the learning alliance formed in Dordrecht that could be seen as first steps in a whole community approach.



\* This workshop was organized by the Disaster Research Center (University of Delaware), Disaster Studies (WUR), COT Institute for Safety, Security and Crisis Management.

## The Closing...

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- The overall conclusion is that the NUWCREN project has resulted in a network of engaged professionals. This network will have to function on its own in the years to come.
- In the last three years, we have witnessed several important developments concerning flood safety and emergency management. The aftercare-phase is now firmly on the policy and planning agenda. The three layered approach has become part of our collective approach. Now the Law on Safety regions is implemented. Examples of topics that were underdeveloped at the start of the project.
- During the symposium various topics have arisen, that are well worth exploring further:
  - The aftercare phase regarding flood emergencies can be thought through. Ideally there will be a basic recovery plan in place. This will require international co-operation.
  - We recommend that the aspect of *whole community* is incorporated in the three layered approach. This could be seen as a fourth layer.
  - The concept of Resilient Cities seems very useful and helpful in thinking about the coming decades. By starting now, we can gradually make our cities more resilient: one building at a time.

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