Increase infrastructure resilience

How to deal with failure of critical infra and cascading effects

Nico van Os

Safety Region South-Holland South
Safety regions

Average 664.000 inhabitants (SHS: 480.000)

Board of Mayors

Responsible for:
- Fire brigade
- Crisis and disaster management
- Medical emergency management
- 112 emergency room
- Advice on risk management
Safety region SHS
Safety region SHS

- 478,000 inhabitants
- 2 main rivers
- 2 important railways for dangerous substances
- 5 important highways
- Pipelines, Gas transport, drink water supply
- Heavy industry within the region and close to the border

- Staff: 300 fte. & ca. 835 volunteers (fire brigade)
## Disaster management structures

<table>
<thead>
<tr>
<th>Overall responsible:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>local incidents:</td>
<td>Mayor</td>
</tr>
<tr>
<td>Incident with impact in more municipalities</td>
<td>chairman board safety region</td>
</tr>
<tr>
<td>Incident with impact in more regions</td>
<td>One of the chairmen involved coordinates</td>
</tr>
<tr>
<td>National impact:</td>
<td>Ministers</td>
</tr>
</tbody>
</table>
## Disaster management structures

Other bodies with responsibilities:

<p>| | |</p>
<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Different ministries</td>
<td>I&amp;M, EZ, V&amp;J, VWS</td>
</tr>
<tr>
<td>Other government bodies</td>
<td>OM, Waterboards</td>
</tr>
<tr>
<td>Private companies</td>
<td>Water, electricity, transport</td>
</tr>
</tbody>
</table>
The Dutch list of "Vital Infrastructure"

- Chemical & Nuclear industry
- Drinkwater supply
- Energy (gas & electricity)
- Finance
- Food
- Healthcare
- Justice
- Public administration
- Public order & Safety
- Telecom / IT
- Transport
- Water management
Safety & Critical Infra

Concern

- Local / central government
- Safety region / safety experts
- Suppliers Critical Infrastructure
- Users Critical Infrastructure
- Citizens / industry / government

Risk assessment
Cooperation in chains
Improved information exchange
Partnerships
Safety & Critical Infra

Concern

Protection

Risk assessment

Cooperation in chains

Improved information exchange

Partnerships

Prediction

Vulnerability reduction

(preparedness on) Crisis management
- No gas pipelines in regular flooded areas
- Electricity / drinkwater / gas network follows dike areas
- Main roads on high level
- Self protection Industry
- Self supporting citizens / industry / organizations
Questions?