Dutch All hazard approach

National Risk Profile and the capability assessment method - work in progress

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Analyst Network on Safety and Security
National safety and security strategy

**GOAL**
- To increase our national resilience and capabilities
- To prevent disasters or minimize their consequences
- To minimize societal disruption

**Vital interests**
(undisturbed functioning of society)

1. Territorial security
2. Physical safety
3. Economical security
4. Ecological security
5. Social and political stability

National risk assessment

**Threats and hazards**

**Resilience Capabilities**
National safety and security strategy

- Multi-sector approach
- Ministries remain primarily responsible – for prevention and preparation and – in cooperation with the ministry of Security and Justice – for response
- Ministry of Justice and Security and is primarily responsible for crisis management
- Government-wide cooperation based on equality
- Public-private cooperation
Workprocess

Which threats do we face?

What is the impact?

Risk Assessment

Risk/Risk Analysis

What do we need to do?

Tasks

What do we need to have?

Capabilities

Capabilities Analysis

National Risk Assessment

Policy initiatives

Political Decision
NRA: All hazard approach

Aim:

- identifying what types of risk may affect Dutch society
- comparing and prioritising these to identify high-priority risks
- NRA results: input to capabilities assessments
Analyst Network National Safety and Security

Ministerial Steering Committee (incl. all ministries)

National Focal Point
Min. Security and Justice (NCTV)

Etc.

Secretary

RIVM
AIVD
TNO
WODC
Clingendael
ISS/Erasmus

Consortium

Methodology workgroup

process

content

Critical Infrastructure sector
Industry, Private sector
Universities and Research institutes
Insurance companies
Consultancy firms
Emergency response services
Safety regions
National Risk Profile

Developments per threat theme → Threat themes

Autonomous developments → Assessments risks for national security

State-of-art existing capabilities → National Risk Profile

Existing set of scenarios

National Risk Profile
All-hazard overview
Threat themes

- Threats to public health and the environment
- Natural disasters
- Disruption of critical infrastructure
- Major accidents
- Cyber threats
- Subversion, extremism and terrorism
- Financial and economic threats
- Geopolitical threats
# Impact criteria

<table>
<thead>
<tr>
<th>Vital national interest</th>
<th>Impact criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Territorial security</td>
<td>1.1 Infringement of territorial integrity</td>
</tr>
<tr>
<td></td>
<td>1.2 Infringement of the international position of NL</td>
</tr>
<tr>
<td>2. Physical security</td>
<td>2.1 Fatalities</td>
</tr>
<tr>
<td></td>
<td>2.2 Seriously injured or chronically ill</td>
</tr>
<tr>
<td></td>
<td>2.3 Physical suffering (lack of basic necessities)</td>
</tr>
<tr>
<td>3. Economic security</td>
<td>3.1 Costs</td>
</tr>
<tr>
<td></td>
<td>3.2 Deterioration of economic vitality (new)</td>
</tr>
<tr>
<td>4. Ecological security</td>
<td>4.1 Long-term impact on environment and nature</td>
</tr>
<tr>
<td>5. Social and political stability</td>
<td>5.1 Disruption of everyday life</td>
</tr>
<tr>
<td></td>
<td>5.2 Violation of the democratic system</td>
</tr>
<tr>
<td></td>
<td>5.3 Social-psychological impact</td>
</tr>
</tbody>
</table>
# Impact criteria: two examples

<table>
<thead>
<tr>
<th>Class</th>
<th>Example criterion: Number of fatalities</th>
<th>Example criterion: Violation of democratic system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited</td>
<td>Less than 10</td>
<td>Limited violation of the functioning of a couple of institutions</td>
</tr>
<tr>
<td>Substantial</td>
<td>10 to 100</td>
<td>Limited violation of the functioning of several institutions</td>
</tr>
<tr>
<td>Serious</td>
<td>100 to 1,000</td>
<td>Considerable violation of the functioning of several institutions and/or violation of freedoms, rights and core values</td>
</tr>
<tr>
<td>Very serious</td>
<td>1,000 to 10,000</td>
<td>Structural violation of the functioning of several institutions and freedoms, rights and core values</td>
</tr>
<tr>
<td>Catastrophic</td>
<td>More than 10,000</td>
<td>Structural violation of the functioning of institutions and freedoms, rights and core values</td>
</tr>
</tbody>
</table>
## Likelihood

<table>
<thead>
<tr>
<th>Category</th>
<th>Quantitative (% per 5 years)</th>
<th>Qualitative (threat)</th>
<th>Qualitative (general)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&lt; 0,05</td>
<td>No concrete indication; event is not conceivable</td>
<td>Very unlikely</td>
</tr>
<tr>
<td>B</td>
<td>0,05 – 0,5</td>
<td>No concrete indication; event is far-fetched but conceivable</td>
<td>Unlikely</td>
</tr>
<tr>
<td>C</td>
<td>0,5 – 5</td>
<td>No concrete indication; event is conceivable</td>
<td>Moderately likely</td>
</tr>
<tr>
<td>D</td>
<td>5 – 50</td>
<td>Event is very conceivable</td>
<td>Likely</td>
</tr>
<tr>
<td>E</td>
<td>50 – 100</td>
<td>Concrete indication that the event will take place</td>
<td>Very likely</td>
</tr>
</tbody>
</table>
Example: flood from river

<table>
<thead>
<tr>
<th>Likelihood assessment</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likelihood of the scenario occurring between now and 5 years.</td>
<td>Based on the probability of failure of dykes in the area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Impact assessment</th>
<th>Security Interest</th>
<th>Criterion</th>
<th>Limited</th>
<th>Substantial</th>
<th>Serious</th>
<th>Very serious</th>
<th>Catastrophic</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Territorial</td>
<td>Territory</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Concerns an area of 600 km² with a duration of longer than 6 months.</td>
</tr>
<tr>
<td></td>
<td>International position</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td>Fatalities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Several hundred fatalities (bandwidth 326-625 fatalities).</td>
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<tr>
<td></td>
<td>Seriously injured and chronically ill people</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Several hundred injured</td>
</tr>
<tr>
<td></td>
<td>A lack of life’s basic necessities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>More than 100,000 will not have any water and food for several days.</td>
</tr>
<tr>
<td>Economic</td>
<td>Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The total damage is estimated at 12 billion euros.</td>
</tr>
<tr>
<td></td>
<td>Violation of vitality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ecological</td>
<td>Violation of nature and the environment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socio-political</td>
<td>Disruption to daily life</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A total of 325,000 affected people are in the area, experiencing the consequences in the fields of education, employment, etc.</td>
</tr>
<tr>
<td></td>
<td>Violation of constitutional democratic system</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Societal impact</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>There is temporary social unrest.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Security interest</th>
<th>Vital interests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Territorial</td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td></td>
</tr>
</tbody>
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National Risk Profile

- Threats to public health and the environment
- Natural disasters
- Disruption of critical infrastructure
- Major accidents
- Cyber threats
- Subversion, extremism and terrorism
- Financial and economic threats
- Geopolitical threats

Catastrophic
- Flood - severe (sea)
- Nuclear disaster (the Netherlands)
- Earthquake - severe (gas extraction)
- Chemical accident (industry)

Very serious
- Cascading effects of power supply failure
- Criminal subversion of critical business - severe
- Criminal foreign concern
- Cyber attack financial system
- Influenza pandemic - severe
- Disruption of power supply
- Extreme weather
- Subversion foreign actors
- Subversive enclaves

Serious
- Zoonosis outbreak (AI)
- Disruption Internet
- Satellite disruption
- Multiple terrorist attack
- Destabilisation of financial system
- Cyber attack - disruption critical infrastructure
- International conflict
- Resource scarcity
- Wildfire
- Animal disease outbreak (foot and mouth disease)

Substantial
- Earthquake (natural)
- Financial and economic threats

Limited
- Very unlikely
- Unlikely
- Somewhat likely
- Likely
- Very likely

Violent loner
Autonomous developments

- Ecological, climate change
- Geopolitical
- Economic
- Technological
- Demographic and societal

→ Effect on risks within and between threat themes
→ Interconnectivity / dependencies
GOAL: Identifying capabilities that help to prevent disasters to occur or reduce the impact and/or likelihood of a threat.
### Method capability assessment - work in progress

**Risk category x**

<table>
<thead>
<tr>
<th>List of capabilities (guideline)</th>
<th>Relevant?</th>
<th>Current situation?</th>
<th>Affecting the relevant risk factors?</th>
<th>Also relevant for other categories?</th>
<th>Potential space for improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Yes</td>
<td>Cap. X</td>
<td>Yes, affect impact 2.2.</td>
<td>No</td>
<td>Improve existing?</td>
</tr>
<tr>
<td>Proaction / prevention</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Preparation</td>
<td>No</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td></td>
</tr>
<tr>
<td>Response / repression</td>
<td>Yes</td>
<td>Cap y</td>
<td>Yes, affect impact 5.1</td>
<td>Yes, cat. i</td>
<td></td>
</tr>
<tr>
<td>Aftercare</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Example: floods

World Risk Index 2016
The Netherlands without defences

- 10 million people and € 2000 billion invested capital behind the dikes and dunes.

Developments

- climate change
  - Sea level rising
  - Rivers: peak discharges will increase this century

- socio-economic
  - Population growth
  - Growth economic activities.
Examples existing capabilities
Example: Capabilities – flood (1)

General: Legal and regulatory framework

**Delta Programme 2015**
- Flood Protection Programme
- the Delta Act
- the Delta Fund which provide the legal foundation and financing of the (implementation of the) Delta decisions.

Example: Capabilities – flood (2)

New flood defence standards
• Water Safety Delta Decision are new standards for water safety.
  – risk-based approach: likelihood and impact
  – aimed at the year 2050
  – primary flood defences, along the coast, major rivers and large lakes.
  – Climate adaptation: Expected climate change, soil subsidence, socio-economic developments are taken into account.

Example: Capabilities - flood (3)

- **Space for rivers**
  - Thanks to a large number of river-widening measures, the discharge capacity has increased in recent years.

- **Multilayer security**
  - Strengthening flood defence (layer 1)
  - Water-robust spatial lay-out (layer 2)
  - Disaster management (layer 3)

General Proaction – *prevention – preparation* – response - *aftercare*
Example: Capabilities - flood (4)

Large-scale evacuation
- Large-scale Evacuation Framework
- Great Flood Evacuation Module (incl. the role of the main national infrastructure)

Aftercare
- Flood insurance (2015)
- Disasters and Major Accidents Act
In summary

- Vital interests
- Threats hazards
- Resilience Capabilities
- Potential space for improvement

Risk assessment

Developments

Capabilities