

Working with scenarios, risk assessment and capabilities

in the National Safety and Security Strategy of the Netherlands

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Foreword and reader's guide

This is the revised practical guide of the National Safety and Security Strategy. The primary aim of this guide is to provide a user's guide for all those people working in whichever capability with the National Safety and Security Strategy.

Reader's guide

This guide is set out in four different levels. The first includes an Introduction of the National Safety and Security Strategy, which is intended to give a complete overview. The second contains a summary of the different roles and a description of the separate stages in the strategy. The third level comprises descriptions worked out in further detail, which are particularly relevant for those people who are directly involved with those parts of the strategy. The fourth level contains tools, such as formats and checklists and background information.

Using the guide digitally

When using the guide digitally, there are references in many places that enable you quickly to find the information you are looking for. Click on the link and you will go to the information you require. Using the keyboard combination Alt + arrow to the left, you can return to your previous place. If you read a paper version of the guide, then you can do so most easily by using the individual role description that suits your own situation the best for following a route through the document.

I am an interested party: what should I read?

You should start with the Introduction about the National Safety and Security Strategy and follow the references given thereby.

I play a role in the strategy: what should Tread?

You should start with the Introduction about the National Safety and Security Strategy and the summary of the different roles. Then go to the more detailed description of your own role. There you will find references to the texts that are relevant to you.

The National Safety and Security Strategy and the Regional Risk Profile

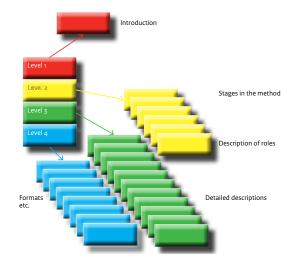
Following the example given by the government, the municipalities and safety regions are also using a similar method for making an inventory and analysis of risks and weighing up the necessary capabilities. This method is set out in the Regional Risk Profile Guide. Further information about this can be found here.

Responsibility for this document

This revised guide was compiled by the method group for national safety and security, consisting of:

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1 Introduction

The National Safety and Security Strategy

What is the National Safety and Security Strategy?

The National Safety and Security Strategy is the instrument used by the Government of the Netherlands for risk management in order to be able to protect the vital interests of Dutch society better and thereby help to prevent Dutch society becoming disrupted as the result of a crisis. The government uses the National Safety and Security Strategy to measure different types of disasters and crises under the same terms in order to be able to compare them, which enables the government to make policy choices that are better substantiated. Every type of crisis that can lead to social disruption (in other words, impairment of the vital interests) can be processed in the strategy (all-hazard approach). The probability that a particular crisis will occur is also assessed, as well as how great the impact of the crisis would be if the situation continued for a period of five years. The aim of the National Safety and Security Strategy is to identify those capacities that require increasing or developing in order to prepare the Netherlands better in dealing with crises and thereby prevent an undesirable level of social disruption. By annually assessing different scenarios for their probability and impact the government gains an increasingly better view of risks and is therefore able to set priorities more accurately in terms of the deployment of people and resources.

The Government of the Netherlands uses the National Safety and Security Strategy to investigate integrally, systematically and periodically which crises can occur and what impact these crises could have on Dutch society. The integral aim and the cross connections that can be implemented enable the government to compare possible threats with each other. This may involve malicious and non-malicious threats, incident scenarios and process scenarios. In order to be able to compare these threats under the same terms realistic, threat-specific scenarios are written and then given a score according to a uniform method. By using the outcome of the National Safety and Security Strategy then priorities can be set in the development and increase of capacities.

The Strategy is therefore set up in order to develop and to strengthen well-founded capacities that will make the Netherlands better able to defend itself against unforeseeable risks.

At which crises is the National Safety and Security Strategy aimed?

The National Safety and Security Strategy is aimed at crises that can lead to social disruption. An important focus thereby lies with the potential impairment to the vital interests of Dutch society. The five vital interests are: territorial safety, physical safety, economic safety, ecological safey and social and political stability. Impairment of the vital interests would occur to a greater extent if the vital infrastructure is affected by a crisis. Sectors included under the vital infrastructure are Electricity, Gas, Drinking Water, Telecommunications/IT, Finances and Transport. (Long-term) interference in these sectors can lead to social, economic and/or political disruption.

How is the National Safety and Security Strategy elaborated?

The Cabinet is responsible for the implementation of the National Safety and Security Strategy. The Minister of Security and Justice holds the portfolio. The implementation is carried out in collaboration with the other ministries, the Network of Analysts for National Safety and Security, decentralised governmental departments, the business community, knowledge institutions and planning

At the start of the annual cycle of the Strategy for National Safety and Security decisions are made within the interdepartmental Steering Group for National Safety and Security as to which scenarios will be elaborated. The Network of Analysts for National Safety and Security, which comprises a collaboration of knowledge institutions and scientific establishments, is then responsible for the development of the scenarios and assessment of the scenarios. The results of these risk assessments are included in the National Risk Assessment.

The National Safety and Security Strategy is not intended to contain predictions as to which crises the Netherlands may expect. The National Risk Assessment is not concerned with what will happen in the future, but with the question as to all that could happen in the unforeseeable future and, in such events, which capacities may be required.

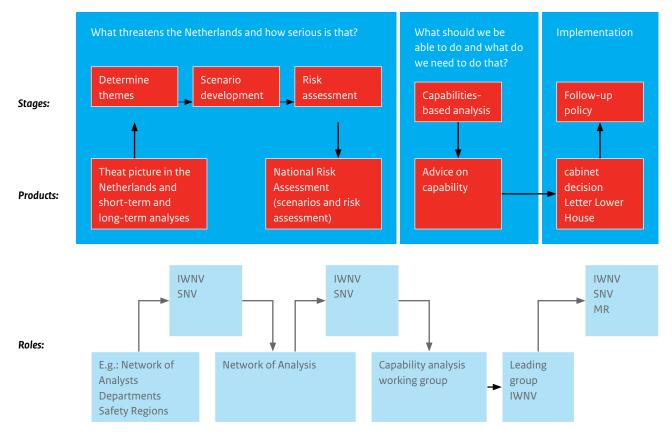
A capability analysis is carried out on the basis of the risk assessment. Investigations are carried out during the capability analysis as to whether the Netherlands has sufficient capacities available (people, machinery, knowledge, skills, agreements) in order to stand up to the threat and which capacities should be increased. The capability analysis is carried out under the responsibility of the professional area that is most involved. The Ministry of Security and Justice supports the process.

Finally, a report is compiled for the Cabinet, in which proposals are made for increasing capacities. The Cabinet decides which capacities will be increased and determines who will be responsible for this. The results of the National Risk Assessment and the capability analysis are reported annually in the Letter of progress concerning National Safety and Security to parliament.

Which functions does the National Safety and Security Strategy of the Netherlands comprise?

The strategy has various different roles; these are set out

The National Safety and Security Strategy set out diagrammatically

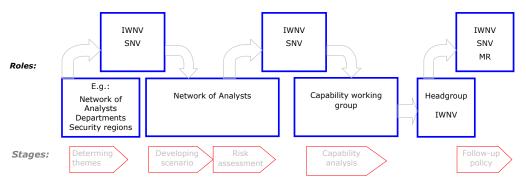


Summary of roles and stages in the method

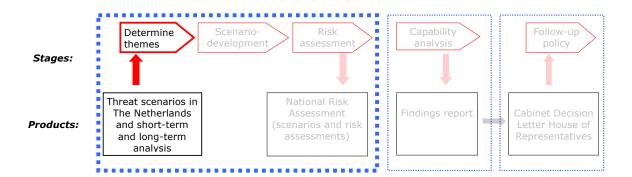
Roles

The National Safety and Security Strategy is a method of working used by policymakers, scientists and people involved in practice to collaborate in making Dutch society better able to defend itself. Several different roles exist within this methodology. The different parties appear in different places in the process, as shown in the figure below. The different roles are shown together with their functions and tasks.

Function	Who	Task
Commissioning party	Cabinet	Decision to increase capabilities
	Steering Group on National Safety and Security (SNV)	Consultation amongst high-level officials; policy decisions
	Interdepartmental Working Group on National Safety and Security (IWNV)	Preparatory body for SNV
Network of Analysts for	General Secretary Network of Analysts	Putting forward themes for new cycle
National safety and security (Network of Analysts)	Task Group member	Writing and assessing scenarios providing the national risk assessment
	Expert for writing scenario	
	Expert in assessing scenario	
	Project leader scenario	
	Working Group coordinator	
	Facilitator	Advising about (methodically) accountable execution of writing the scenario and carrying out the risk assessment
Working Group capability analysis	Chairperson of capability analysis Secretary of capability analysis Expert in capability analysis	Carrying out the capability analysis
	Facilitator	Advising about (methodically) responsible execution of capability analysis
Head group IWNV	Members of interdepartmental working group for national safety and security	Agenda-setting capabilities
Implementation of capabilities	Department or organisation that is most involved	Implementation of increasing capabilities
Working Group for Methodology for the National Risk Assessment	Experts in methodology National Risk Assessment	Developing and maintaining the method of the National Safety and Security Strategy



Process of choices for scenarios



A number of different scenarios are developed and analysed in every cycle of the National Safety and Security Strategy. The choice of themes for these scenarios to be elaborated is made by the Steering Group for National Safety and Security. There are various different ways in which themes for a scenario can be put forward:

- Members of the Steering Group can make proposals.
- The Steering Group asks the Network of Analysts for National Safety and Security to produce a substantiated proposal from the themes to be worked out, for example in the form of a longlist with a number of priorities. The Network of Analysts is pre-eminently suited in bringing together the variety of insights from the academic sector and the knowledge institutions.
- Security regions can put forward themes via the regional risk profile platform, which may be in the national interest.

Furthermore, there are two types of analyses from which the outcome can be included. Acutely felt risks can provide the reason for a global analysis. The outcome of such a short-term analysis can lead to a proposal to work out a theme in the form of a scenario according to the National Safety and Security Strategy. Analysis of long-term threats, for example from long-term surveys, can also lead to a proposal for working out a theme in the form of a scenario.

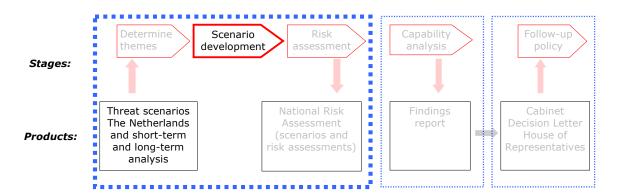
The proposals for themes to be worked out may involve new scenarios, scenarios that are a variation of previously developed scenarios (whereby the new details must show coherence with the previously developed scenarios) and also scenarios that were previously developed and which need to be brought up-to-date. The Network of Analysts assesses whether updating a scenario is desirable and, if this is the case, then includes this scenario (theme) in the proposal to the Steering Group.

When the Steering Group has chosen the themes to be worked out, then the Network of Analysts, in consultation with representatives from the departments most involved, can work on plotting every theme. The following questions are relevant at this stage:

- In which period of 5 years should the scenario be set?
- · What is the level of seriousness that the scenario should describe? A serious (and therefore less likely) variation, a probable (and therefore less serious) variation, or a variation somewhere in between?
- · Where should the scenario be positioned geographically, or should it be independent of location?
- · Which events should be included in the scenario in every case, and which should not?

The following step is the actual scenario development by the Network of Analysts.

Scenario development



The National Safety and Security Strategy is based on working with scenarios. There are different ways in which a scenario can be used. An explanation is given below as to what is included under the meaning of a scenario.

This is followed by a description of the process that can be used in order to reach a scenario. Finally, a description is given of the preconditions and demands to which theses scenarios must comply.

The first part of the National Safety and Security Strategy entails working out scenarios that could pose a threat to the national safety and security within a time horizon of five years (medium term).

A scenario offers a way to communicate about risks and to formulate (mutually) an image of the risks and factors that are important to the decisions being taken now. In the case of the National Safety and Security Strategy, this entails political decisions concerning supplementary investments in the various different phases of the security chains1 in different themes.

In the context of the National Safety and Security Strategy, a scenario is a description of:

- the incident or (gradual) process, meaning (the nature and extent of) one or more connected events, which have consequences for national safety and security and therefore have an impact at a national level;
- · the run-up to the incident or (gradual) process, comprising the (underlying) cause, and the trigger that actually causes the incident or brings the gradual process to light;
- · the context of the events, with an indication of general circumstances and the level of the vulnerability and resistance of the people, property and society, insofar as this is relevant to the incident or process described;
- the consequences of the incident or (gradual) process, giving an indication of its nature and size, and with a global description of the response and management
- The safety chain is made up of pro-action, prevention, preparation, enforcement and follow-up.

measures, and in the case of processes the (policy) interventions already taken or to be carried out during the scenario events;

in particular, the effects of the incident or (gradual) process on the vital interests of Dutch society.

The figure here shows the connection between the cited ingredients of a scenario. It is possible to take not just one single incident as starting point for a scenario, but a process that has been gradually smouldering under the surface. One example of a process scenario concerns the events surrounding asbestos in the 1970s, 1980s and 1990s.

It is impossible to point to one single

Context Climate, nature, society location Cause (trigger) Run-up and declaration "activate" Incident/events: danger, threat **Consequences** (impact) People, society, the Dutch State, the environment

incident through which the threat becomes visible. However, during the course of a series of events, the gradual process does become visible, for example due to a rise in the number of hospital admissions as a result of the process. Further explanation is given on the page Process scenarios.

How a scenario is formulated

After the Steering Group on National Safety and Security has decided about the choice of themes, then the Network of Analysts for National Safety and Security consults with the professional departments most involved concerning the delineation of the scenarios, so that the scenarios can provide the correct information for the capability analysis.

In order to develop a scenario, input is needed from experts from various different professional areas. This is naturally determined by the nature of the scenario and the choice for the reason, the context, the course of events and the consequences of the scenario.

The Network of Analysts for National Safety and Security is responsible for developing the scenarios. This involves collaboration in a multidisciplinary working group. There are representatives in this working group for writing from knowledge institutions and the academic world, who are included in the Network of Analysts, but representatives from the business community, departments and other government organisations can also participate.

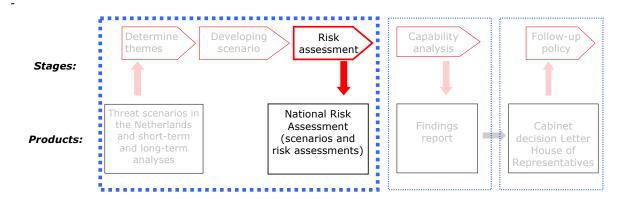
The (project leader of the) working group for writing is responsible that the developed scenario offers sufficient reference points so that the risk assessment can be carried out during the following step. For this reason it is a good idea to keep the 10 impact criteria and the probability requirements at the back of your mind when working out a scenario. The format developed for this purpose can be of help hereby. Besides this, the scenario needs to be sufficiently concrete in order to be able to assess during the capability analysis which capabilities are thereby necessary, which ones are already available and whether there are capabilities that should be increased.

The input from experts can be safeguarded by including these experts in the writing group. One possibility is simply to request the input of experts on a one-off basis, or perhaps at a limited number of well-chosen moments. The way in which the input of experts can be organised is given in greater detail here. So that the impact and likelihood of scenarios can be scored during the risk assessment, the scenarios need to be written in a comparable manner. You can read about the requirements of a scenario here.

Finally, the Steering Group is able to set out the final versions of the scenarios, which can be used in the capability analysis. It can happen that (part of) a scenario is not suitable for publication. The Steering Group decides in such cases which form of the scenario can be published, under the basic principle of 'open if possible, confidential if necessary'.

Once the scenario has been compiled, this is then followed by the risk assessment.

The National Risk Assessment



After the scenarios have been worked out, then they are scored for their likelihood and impact in the national risk assessment by the Network of Analysts for National Safety and Security. This makes the scenarios comparable with each other and they can all be placed in the same risk diagram. After a short introduction to the risk assessment and its place in the total working method, this is described in greater detail in terms of the method and the meaning of risk used. After a description of the final product, the steps are then described of the National Risk Assessment.

Definition and position

During the risk assessment the threats that have been worked out in the scenarios are compared against one rule of measurement on the basis of a previously agreed model. Scenarios are hereby assessed on all separate impact types and also on their likelihood. This allows all risks for national safety and security to be comparable.

The likelihood that a scenario will occur during a time period of 5 years (the coming 5 years or another period of 5 years) is considered during the risk assessment, as well as the impact of the events included in the scenario in terms of the five vital interests. The impact has a material component (for example, material damage and number of victims) and an immaterial component (for example, the public outcry or damage to the image of the Netherlands internationally). The factor of perception is therefore expressly included in the risk assessment. Even though fictional scenarios are assessed in terms of likelihood and impact, this does not mean that the scenarios are classic scenarios. As Van Asselt said (2013): "Although the threats are 'assessed' in classical terms (chance and effect), the National Risk Assessment is an updated method of thinking about an uncertain future.

This is not an inventory of risks that have manifested themselves sufficiently in the past so that these can be estimated with the help of statistics. On the contrary: scenarios are developed according to a growing number of safety and security themes in which, although undesirable, foreseeable images of the future can be thought through, after which they can be assessed by experts. That collection of scenarios is used to compare risks and to prioritise. That in turn is meant as input for a broader and more sober appraisal." This is so that in the end, on the basis of a sober appraisal, a decision can be made as to which capabilities must be increased in order to be able sufficiently to manage these possible risks.

The risk assessment subsequently becomes the basis for an analysis of available capabilities and for providing a recommendation to the Cabinet about the capabilities to be increased, and thereby gives direction to the decisionmaking about the extra input of capabilities (in nature and size) that strike against the threats analysed in the scenarios.

General characteristics of the method

The method assumes that threats to the national safety and security are described in the form of scenarios. This is in fact the basis for the application of the risk assessment. Besides the orientation by means of scenarios, the method also has the following characteristics:

- all types of threats to national safety and security can be processed and assessed, whereby a division can be made on a number of points between "natural" threats caused by unconscious human dealings ("dangers" or "hazards" in the form of floods, for example, or a serious accident in a chemical factory through technical or human error) and "malicious" threats plotted by people ("threats", conscious human dealings, for example in the form of terrorist attacks);
- the method of the national risk assessment is based on a composition of tested scientific methods (such as multi-criteria analysis, probability calculation, sensitivity analysis, scenario analysis), whereby the endeavour is made to handle the complex material as correctly as possible and in a way that is as transparent as possible for users:
- the scenarios that have been scored can be placed in order, by means of a multidisciplinary perspective, according to risk in risk diagrams, whereby space is left for administrative consideration regarding setting (policy) priorities.
- A division comprising five classes is used for the impact and for the likelihood (classes A to E):
 - class A represents a scenario with a very low impact, or respectively a scenario that qualifies as highly unlikelv.
 - class E represents a scenario with a catastrophic impact, or respectively qualifies as very likely.
- · An estimate is made of the uncertainty regarding the determination of the likelihood and impact for every scenario. This may involve uncertainty as a result of a difference of opinion between experts. For this reason, the score should be determined for the impact and the likelihood for:
 - the forecast value: this is the most likely score, but it could be a little higher or lower;
 - · the lower limit: the score is almost certainly equal to this or higher;
 - the upper limit: the score is almost certainly equal to this or less.

Final report

The final product of the National Risk Assessment is a report from the Network of Analysts for National Safety and Security, in which the following parts, provided with substantiation, are included:

- · the scenarios;
- a short description of the way in which the scenarios and the risk assessment was carried out and which parties were involved in that;
- the scores (i.e. the calculated impact and likelihood values) of the scenarios used in the risk assessment, with an explanation and substantiation;
- risk diagrams in which the scores of all the scenarios are set out against an impact and likelihood axis;
- · one or more sensitivity analyses.

The Steering Group on National Safety and Security is responsible for approving the final report and determines in which form this can be published. The basic principle hereby is: 'open if possible, confidential if necessary'.

Determining the impact

The ten impact criteria for the National Risk Assessment are derived from the vital interests that require protection in the Netherlands. Each of the five vital interests (territorial security, physical security, economic security, ecological security, social and political stability) is translated into one or more impact criteria. The ten chosen impact criteria are considered together to be representative for all aspects that could lead to social disruption.

Vital interest	Impact criterion
1. territorial security	 1.1 encroachment on the territory of the Netherlands 1.2 infringement of the international position of the Netherlands
2. physical security	2.1 fatalities 2.2 seriously injured and chronically ill 2.3 physical suffering (lack of basic necessities of life)
3. economic security	3.1 costs and impairment of the economy
4. ecological security	4.1 long-term on the environment and nature (flora and fauna)
5. social and political stability	5.1 disruption of everyday life 5.2 aantasting van de democratische rechtsstaat 5.3 social psychological impact and social unrest

The following steps lead to the impact score of a scenario:

- · determining which impact criteria apply in principle;
- finding out whether the information in the description of the scenario in sufficient, complete and comprehensible in order to be able to score the impact against the different impact criteria;
- analysing the scenario against each of the impact crite¬ria and scoring the criteria;
- finding out whether there is reason for uncertainty or difference of opinion to be translated into an upper limit and a lower limit;
- merging the ten impact scores using an aggregation procedure in order to arrive at a total impact score for the relevant scenario.

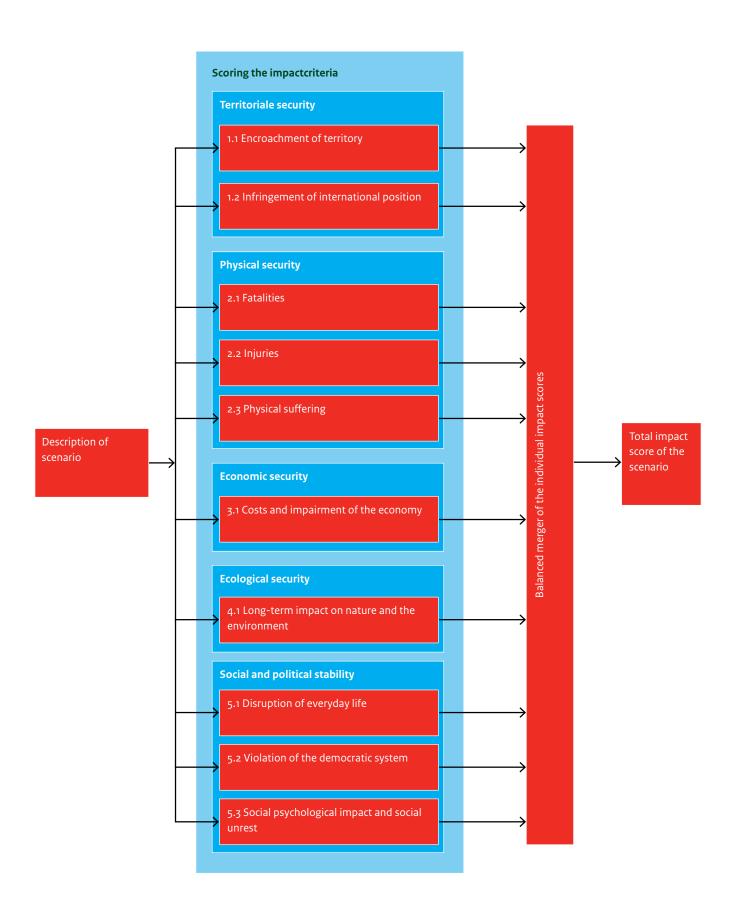
Assessment of likelihood

The likelihood is expressed as the likelihood that the scenario will occur during the chosen period of five years. In determining the likelihood of a scenario the following general basic principles are applied.

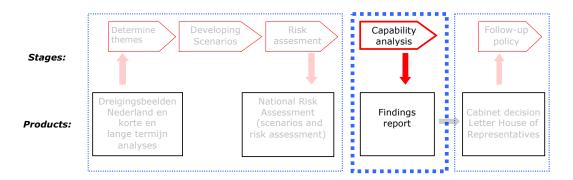
 Calamities that form a threat to the safety and security on a national scale mostly have a low level of likelihood of occurrence or they involve threats with which the Netherlands has never before confronted. This means that a clear and uniform line of reasoning must be followed when determining the likelihood whereby, besides the cause and consequences, also the context relating to the potential threat must be described. It is important to take into account thereby the specific characteristics of incident scenarios versus process scenarios, and also with nonwilful scenarios versus wilful scenarios.

- · Since we are concentrating on 'disruptive' incidents, there will be a lack of reliable case-based reasoning for a large portion of the scenarios. In addition, particularly in the case of wilful scenarios and process scenarios, these only occur in very limited circumstances.
- Characterisation through past experiences. The result is that determining the likelihood for the individual scenarios will be based on multiple sources of information:
 - · historical events, case-based reasoning;
 - probability model and design calculations;
 - expert opinions, trend analyses and threat analyses.
- The likelihood is not determined for the specifically written scenario, but for a cluster of scenarios within the theme and which have comparable serious consequences as those described in the specific scenario², a so-called fictional point of scenarios.

² Example: The likelihood is not determined for 'known person A is murdered at location B by terrorist group C, which has D characteristics', but for 'a known Dutch person is murdered by a terrorist group with D or similar characteristics.'



Capability analysis agenda-setting



Definition and position of the capability analysis

The capability analysis follows development of the scenario and the scoring of the scenarios in the national risk assessment. A capability is the ability to be able to do something. That entails tasks and other activities relating to preparation, prevention, combating and recovery. In order to carry out those tasks, a skill may be necessary or knowledge, but also material such as measuring apparatus, people to do things or legislation for preventing dangerous situations.

In the end, the capability analysis concerns in terms of the strategy: where are the weak points in our ability to reduce risks and what can we do to counteract these? In order to limit a risk, extra capabilities may be needed or existing capabilities may need to be increased.

General characteristics of the method

The capability analysis is carried out per scenario (or set of connected scenarios) by a working group of experts, which is chaired by a chairperson who is supported by a secretary. The following question is asked in the capability analysis: which capabilities should we increase in order to make the risk acceptable or good enough with which to be able to react?

This expressly concerns finding possibilities for improvement aimed at the two known dimensions of "risk": the reduction of the impact and the reduction of the likelihood.

The process of the capability analysis, together with the steps thereby entailed, is given in greater detail here.

End product

The different theme groups come up with different capability analyses. In a findings report compiled on the basis of the different capability analyses a recommendation is given to the Cabinet concerning which capabilities need to be increased in the interest of national security. Further information about this is given under Decisionmaking and implementation.

Decision-making and implementation

Head Group

The different theme groups come up with different capability analyses. On the basis of the different capability analyses, the Head Group makes proposals to the Cabinet about which capabilities should be increased in the interest of national security. This comparison is carried out on the basis of the risk diagram, (possible) political attention, quick gains and a costs and benefits analysis. A capability with a limited effect that requires increasing, whereby the that increase would cost a great deal of money, for example, will be given less priority than increasing a capability that can achieve a great effect through relatively little cost.

Attention is not only paid in findings report to the capabilities that are needed for one type of risk only. The Head Group also selects capabilities that could reduce the impact and/or the likelihood of different types of incident. The capabilities may be given no priority if they are only effective in reducing just one type of risk, but if they contribute to reducing multiple types of risk then this will earn priority.

Cabinet

After discussions in the Interdepartmental Working Group for National Safety and Security and the Steering Group on National Safety and Security, the Cabinet decides which recommendations it will take up and subsequently informs the House of Representatives about this in the Letter of Progress on National Safety and Security. Depending on the nature of the recommendations, then the implementation is carried out by the responsible party or parties within the government, the business community or other organisations. In a following letter of progress, the current situation concerning earlier recommendations will be reported.

Confidentiality

Confidentiality of information plays a role at two points during the implementation of the National Safety and Security Strategy: during the implementation and by the publication of the results.

This division is very important: the implementation profits from sharing information as much as possible between the parties involved during the implementation while, at the same time, care must be taken not to publish more information than is responsible.

Confidentiality during the implementation

For all people involved in the implementation of the National Safety and Security Strategy applies that the information shared with them is confidential. Therefore, this means that the information cannot be published. This safeguards the fact that as much knowledge as possible can be shared between the parties involved, which provides for high quality of the products. It may be that information provided by a knowledge owner is shared under certain conditions. One example of this might involve the use of classified information. The knowledge owner may set conditions as to with whom the knowledge may be shared and the way in which the information is shared, processed and kept. The parties involved may be required to sign a confidentiality agreement.

Confidentiality and publication

It is up to the Steering Group on National Safety and Security (and in the end the Cabinet) to decide which information that has been gained during the cycle can be published, and which information will remain confidential or must be given formal classification. The basic principle hereby is "open where possible, closed where necessary." Information will remain confidential in any case if the knowledge owner has indicated that the information is classified or cannot be published for another reason. There may also be other reasons for not publishing information, for example when the combination of parts of information, which in themselves are not classified. could damage the interests of the State. All information necessary for the description of scenarios and scenario scores remains available without limitations for the Network of Analysts and for the departments (under conditions, if necessary).

- 1. The Network of Analysts for National Safety and Security consults with representatives of the professional departments most involved and with the chairperson and secretary of the capability analysis in order to determine which information from the scenarios and the National Risk Analysis can be published (and to determine whether the scenarios and the risk assessment are of sufficient quality for a capability analysis, for example).
- 2. Preferably before the capability analyses begin, the Network of Analysts provides the Steering Group with two versions of the National Risk Assessment: one complete version, which is available for the capability analysis and which remains confidential, and one version for publication, from which all the information that may not be published has been removed.
- 3. Following approval from the Steering Group and the

- Cabinet, the publication version can be made public, preferably by sending the letter of progress to the House of Representatives.
- 4. If the Network of Analysts are not able to approve the demands attached to the text to be published, then the Steering Group can decide to publish the remaining text under its own responsibility (and therefore not as a text 'initiating from' the Network of Analysts) in the National Risk Assessment.

The results of the capability analysis are included in the report findings, which form an appendix to the letter of progress on national safety and security. Information that is necessary for the policy-making, but which cannot be published, will be marked as such.

Regional risk profile

The methodology used for the national risk assessment has been taken over by the security regions and has been adjusted to suit the regional risk profile. The regional methodology is set out in the Guide for regional risk profile. The regional risk profile is the statutory basis for the risk policy of the security regions. The profile comprises an inventory and an analysis of the risks that are relevant for the security region. Regional risks may be of a general national nature, or specific to that region and the neighbouring areas. The risk analysis is the basis for the management of the security region in order to assess the balance between risks and response and to determine the security ambitions. The risk profile also forms a basis for consultation with the municipalities and strategic partners, such as the police, the water boards, government officials and the province.

National security risks are included in the regional risk profiles insofar as the tasks involved affect the security region. For this purpose a summary has been compiled of the type of risks that may be involved at regional level. The security region focuses its objectives at risks with their own sphere of influence. Security regions cannot implement a risk policy for risks that are not included in their own risk profile, or they will need to apply for new insight.

The security region is responsible for compiling the regional risk profile and this is accomplished together with the security partners. Risks are analysed and positioned in collaboration with the parties responsible for the relevant sectors, for example flood risks together with the water boards and Directorate-General for Public Works and Water Management districts involved. The question thereby is whether intensification of policy (capability

analysis) is indicated for the risk in question and what the division of roles is thereby. The answer depends on the opportunities in terms of policy, management and politics.

The security region is set up as an extension of local government for carrying out tasks on behalf of and for the municipalities.

The risk profile is therefore discussed with all the participating municipal councils. The councils need to be able to see which risks are important for their own municipalities in the concept risk profile. The councils can supplement the risk profile with their own known risks and they can also indicate policy priorities.

The system for the regional risk profile is somewhat different than for the national risk assessment. A scenario approach is deployed in both cases, but a limited number of scenarios are chosen every year at national level, while the regions formulate and set out a summary of all types of security risks, which could lead to a large fire, disaster or crisis, once every four years at least.

An inventory is made of the risks and vulnerabilities for the regional risk profile, of which it is realistically possible or likely that they will occur during the coming policy period. The inventory is based to an important extent on the data provided by the provincial risk map. Security regions have access to the professional part of this map, but they depend on the municipalities to deliver the necessary data. The regional risk profile is mainly used for the development of policy. The provincial risk map is mainly aimed at the communication about risk with the public. The Guide for regional risk profile offers the security regions a uniform method for compiling a risk profile. This prevents double work and promotes the mutual comparability of the regional profiles. The connection with the national method helps to safeguard a consistent assessment and also offers the possibility of related security policies of the government and the regions. The first edition of the guide dates from 2009, but it is a dynamic instrument in which the regional risk profile platform is subject to continual adjustment.

Details

Steering Group and Interdepartmental Working Group on National Safety and Security

De Steering Group on National Safety and Security (SNV) is the decision-making consultation director generals of the professional departments involved. The consultation is prepared by the Interdepartmental Working Group on National Safety and Security (IWNV). Both consultations are prepared and chaired by the Ministry of Security and Justice / National Coordinator for Security and Counterterrorism (NCTV). The SNV is formally a preparatory body for the decision-making put before the Security Council and the Cabinet.

When does this function play a role during the process?

The IWNV and the SNV play a role during the whole process of the National Safety and Security Strategy.

What is the general assignment for this function?

As commissioning party for the Network of Analysts for National Safety and Security, the SNV chooses the themes to be worked out in scenarios for the National Risk Assessment, decides about the planning of a cycle, and accepts the products from the Network of Analysts. The SNV is also the commissioning party for the capability analysis and decides about acceptance of finished products, about sending the letter of progress on national safety and security to the House of Representatives and about publication of the background products.

What input does this function require?

The SNV (and the IWNV as preparatory body) are given input from their own departments, other parties and Network of Analysts for the choice of scenarios to be developed. The products provided by the Network of Analysts (scenario and scoring, in short the National Risk Assessment) must be accepted by the SNV as commissioning party and they form the start of the capability analysis. As preparatory body, the SNV is required to give final approval to the capability analysis, the findings report (an administrative recommendation about capabilities that need to be increased on the basis of the results of the cycle of scenarios, scoring and capability analyses) and the concept letter of progress on national safety and security to the House of Representatives, and steer these through to the Security Council and the Cabinet.

What does this function achieve?

Formal approval from the departments for the products of the National Safety and Security Strategy (from the Network of Analysts as well as the departments themselves) and for the implementation of the priorities identified in the strategy.

Who works together with this function?

IWNV/SNV work (partly on a daily basis through the Ministry of Security and Justice / NCTV) closely with the Network of Analysts and with the capabilities working groups and the Head Group. In addition, the members of the IWNV/SNV are the representatives on behalf of their own departments.

Who uses the output?

The results of the consultation in the IWNV are intended for the decision-making in the SNV or for the implementation by the departments. The results of the consultation in SNV are intended for the decision-making in the Security Council or the Cabinet or for the implementation by the departments.

What should I read?

Reader's guide; Introduction; Process of choices for scenarios; Scenario development; The national risk assessment; Capability analysis and agenda-setting; Decision-making and implementation; Confidentiality.

Network of Analysts for National Safety and Security

The Network of Analysts for National Safety and Security comprises a broad network of reputable institutions and organisations. Amongst the fixed Task Group of the Network of Analysts are the National Institute of Public Health and Environmental Protection (RIVM), Erasmus University Rotterdam, the General Intelligence and Security Service (AIVD), Netherlands Organisation for Applied Scientific Research (TNO), the Research and Documentation Centre (WODC) of the Ministry of Security and Justice and the Clingendael Institute. This Task Group is decked by a large number of knowledge institutes, offices, businesses and government services, which can provide the necessary expertise as required.

When does this function play a role during the process?

The Network of Analysts gives advice on making the choice of themes for each new cycle to the Steering Group on National Safety and Security (SNV) and the Interdepartmental Working Group on National Safety and Security (IWNV). The Network of Analysts is responsible for the content for the scenarios and their scoring in the National Risk Assessment.

What is the general assignment for this function?

The main task of the Network of Analysts is to develop scenarios for selected themes and to provide the National Risk Assessment. The Network of Analysts is able to mobilise knowledge from a wide variety of different areas.

In order to develop the National Risk Assessment, the Network of Analysts is responsible for developing scenarios within the frameworks and themes set by the SNV. The Network of Analysts is also responsible for the scoring on impact and likelihood of the designated scenarios. In addition, the Network of Analysts gives advice to the Steering Group and the IWNV about the choice of themes at the start of a new cycle.

What input does this function require?

In order to develop and score the scenarios, frameworks are set by the departments. The Network of Analysts needs the right expertise so that the scenarios can then be developed and scored.

What does this function provide?

Scenarios, assessment of the scenarios, the risk diagram.

Who works together with this function?

Various different roles work together with the Network of Analysts:

- General Secretary of the Network of Analysts
- Task group member
- · Project leader for scenario
- Expert by the development of scenario
- · Working group coordinator
- · Expert by the scenario scoring

Who uses the output?

The scenarios and scoring provided the input for the capability analyses. Prior to this a report is made in the findings report of the results to the IWNV, the Steering Group, MR and finally to the House of Representatives.

What should I read?

Reader's guide; Introduction; Process of choices for scenarios; Scenario development; the National Risk Assessment; Capability analysis en agenda-setting; Decision-making and implementation; Confidentiality; Steering Group and Interdepartmental Working Group on National Safety and Security.

Task Group member of Network of Analysts for National Safety and Security

When does this function play a role in the process?

The Task Group is active during the implementation of the National Risk Assessment.

What is the general assignment for this function?

- Giving advice to the Steering Group about new themes or reassessment of existing themes (annually);
- · Giving advice about maintenance and development of the National Risk Assessment methodology;
- Responsible for the content of the fixed themes;
- Making a proposal for the number of scenarios and the layout of the scenario in general terms;
- Setting up a project plan for the National Risk Assessment (annually) and providing the project leader (dependent on theme);
- · Obtaining and providing the necessary expertise;
- Setting out the annual National Risk Assessment;
- Setting up and monitoring a project plan per National Risk Assessment cycle;
- Supplying the Steering Group on the basis of ad hoc requests for scenarios outside the regular planning

What input does this function require?

The Task Group uses the decisions made by the Steering Group and the preconditions per theme from the departments. This is followed by the thematic project plans and the scored scenarios.

What does this function provide?

The Task Group is responsible for the annual National Risk Assessment. Through the continual involvement of the Task Group in every cycle, the Task Group is able to safeguard the quality and continuity.

Who works together with this function?

General secretary, project leaders, external experts, (members of) the methodology group for National Risk Assessment.

Who uses the output?

IWNV and Steering Group

What should I read?

Reader's guide; Introduction; Process of choices for scenarios; Scenario development; De national risk assessment; Capability analysis en agenda-setting; Decision-making and implementation; Confidentiality; Steering Group and Interdepartmental working group on National Safety and Security; Network of Analysts for National Safety and Security; Demands of a scenario; Assigning the impact scores; The meaning of risk.

General Secretary of Network of Analysts for National Safety and Security

When does this function play a role in the process?

The General Secretary of the Network of Analysts is involved in the whole process of the National Risk Assessment.

What is the general assignment for this function?

Responsible for the coordination of the production process of the National Risk Assessment and contact point for the commissioning party.

This entails specifically:

- Directing, coordinating and supervising the production
- Functioning as contact point for the IWNV and Steering Group (via the Ministry of Security and Justice) for the production process and the prompt delivery of the National Risk Assessment and other products;
- Managing the finances;
- Maintaining contact with all the organisations in the
- Chairing the meetings of the Task Group of the National Risk Assessment;

Representing the Network of Analysts in the working group on Methodology on National Safety and Security and also making suggestions for improvements and/or adjustments in the methodology of the National Risk Assessment.

What does this function provide?

The National Risk Assessment annually in collaboration with all parties. Safeguards, network and a well run process.

Who works together with this function?

Commissioning parties, Task Group members, Project leaders, Working Group coordinators, (members of) methodology group of the National Risk Assessment.

Who uses the output?

Commissioning party, IWNV, Steering Group on National Safety and Security.

What should I read?

The whole guide.

Project leader scenario

When does this function play a role in the process?

Once the themes have been set by the Steering Group, the project leader of the scenario working group starts to write the scenario. The project leader is appointed from within the Network of Analysts.

What is the general assignment for this function?

The project leader has the following tasks:

- · Compiling a project plan, following discussions with the departments involved;
- Developing one or more scenarios, and selecting/ appointing the correct expertise;
- Putting together a working group for writing and an assessment working group;
- Writing the scenarios and processing any comments made about the scenarios (including from the task
- Presenting the results of the scores together with motivation and explanation.

What input does this function require?

Before the scenario working group can start, the preconditions for the scenarios need to be set per theme by the departments (in IWNV/SNV).

What does this function provide?

One or more scenarios worked out in detail and scored on impact and likelihood.

Who works together with this function?

Experts, working group coordinator, general secretary of the het Network of Analysts.

Who uses the output?

The general secretary brings all the scenarios together so that these can be used for the capability analysis.

What should I read?

Reader's guide; Introduction; Process of choices for scenarios; Scenario development; The national risk assessment; Confidentiality; Network of Analysts for National Safety and Security; General secretary of Network of Analysts; Working group coordinator of Network of Analysts; Demands of a scenario; Scenario development and likelihood; Awarding the impact scores; The impact criteria; Guide for likelihood assessment; Format description of a scenario; The use of expert opinions.

Working group coordinator of Network of Analysts

When does this function play a role in the process?

After the themes have been set by the task group.

What is the general assignment for this function?

The working group coordinator supports the project leader in the production and assessment of a scenario. This involves him/her making contact with experts for participation in the working group. The coordinator also has the following tasks:

- · Organising, preparing and writing the minutes of the meeting of the working groups for compiling as well as assessing (scoring) the scenario;
- · Giving assistance in writing the scenario and processing the scores from the assessment;
- · Recording information, documents and reports;
- Providing support for the project leader;
- Reporting problems to the general secretary that have cropped up during the scenario development and assessment.

What input does this function require?

Assignment of a theme with motivation and the Task Group member who is thereby responsible.

What does this function provide?

The working group coordinator provides one (or more) scenarios that have been scored.

Who works together with this function?

Project leader for scenario, general secretary, facilitator from the methodology working group and the experts by the scoring of the scenarios.

Who uses the output?

Commissioning party (via the general secretary)

What should I read?

Reader's guide: Introduction: Process of choices for scenarios; Scenario development; The national risk assessment; Confidentiality; Network of Analysts for National Safety and Security; General secretary Network of Analysts; Project leader for scenario; Demands of a scenario; Scenario development and likelihood; Awarding the impact scores; The impact criteria; Guide for assessing likelihood; Format description of a scenario; The use of expert opinions.

Expert by compiling the scenarios

When does this function play a role in the process?

Once the Steering Group has determined the themes, then experts are brought together by the Network of Analysts for National Safety and Security, to write a scenario per theme.

What is the general assignment for this function?

Providing substantive knowledge and expertise on a specific theme over which a scenario is due to be written. The expert can participate on behalf of a particular organisation or under his/her own name. Indication must be given when an expert provides his/her opinion under his/her own name.

What input does this function require?

- The demands that are set for the scenarios.
- The preconditions that are set by the departments involved around the specific theme.
- · Substantive knowledge about the theme.
- Information about the working method of the National Risk Assessment, and particularly of the meaning of the impact criteria.

What does this function provide?

Together with the other experts within the scenario working group, the expert provides a scenario that can be scored on impact and likelihood. The scenario and the score together form the basis of the National Risk Assessment, which in turn forms the basis of the subsequent capability analyses.

Who works together with this function?

Project leader Working group Coordinator Other experts

Who uses the output?

The scenario is used by other experts for scoring in terms of impact and likelihood.

What should I read?

Reader's guide; Introduction; Scenario development; The national risk assessment; Confidentiality; Project leader for scenario; Demands of a scenario.

Expert by the assessment of scenario

When does this function play a role in the process?

The scenario-scoring expert can start his/her tasks once the scenario working group has written the scenario.

What is the general assignment for this function?

Providing substantive knowledge and expertise on the theme of the relevant scenario. Where possible, the expert should provide substantiation for his/her opinions and/or comments. The scenario should be scored on impact and likelihood according to the methodology set out for this purpose in the National Risk Assessment.

The expert can participate on behalf of a particular organisation or under his/her own name. Indication must be given when an expert provides his/her opinion under his/her own name.

What input does this function require?

- The scenario and its related scoring (from the Network of Analysts via the chairperson and/or secretary).
- Information about the background and the scoring of the scenario (preferably by the coordinator of the scenario working group).
- · General information about the National Safety and Security Strategy (from the secretary and possibly also the chairperson).
- Information about the method of working in the assessment of scenarios and the expected output (by the secretary and possibly also the chairperson).
- Information about the role of experts by the National Risk Assessment (by the secretary and possibly also the chairperson.

What does this function provide?

Together with the other experts, the secretary and the chairperson, the expert provides the National Risk Assessment. The expert achieves this by participating in the expert meetings and possibly also by individual interviews or e-mail contact. The expert will contribute his/her own expertise to the discussions and enables, together with other experts, a summary to be compiled of the capabilities to be increased and a more in-depth description of the capabilities with the highest priority for being increased.

Who works together with this function?

Project leader Working group coordinator Experts

Who uses the output?

Chairperson Secretary **Head Group**

Interdepartmental working groups and steering groups (e.g. IWNV, SNV, IOCB, GCT)

Department that is responsible for the follow-up policy with regard to the capability analysis The Cabinet

What should I read?

Reader's guide; Introduction; Scenario development; The national risk assessment; Confidentiality; Project leader for scenario; Vital products and services; Awarding the impact scores; The impact criteria; Guide for assessing likelihood.

Chairperson of capability analysis

When does this function play a role in the process?

The chairperson is involved in writing the scenario from its compilation by the scenario working group, as well as the

The chairperson is involved as listening participant.

What is the general assignment for this function?

The chairperson is always appointed from the department or part of an organisation that is responsible for policy. This means that the chairman functions as coordinator and has final responsibility for the capability analysis. More specifically, the tasks of the chairperson include:

- Putting together a group of experts;
- Organising the experts' meetings (together with the secretary);
- · Chairing the experts' meetings;
- Writing the final report (together with the secretary);
- If necessary, giving an explanation of the final report to the Head Group (together with the secretary).

What input does this function require?

- National Risk Assessment
- Scenario working group (scenario and scoring and relevant background information)
- Secretary (support in practice and method by the experts' meetings and writing the final report)
- Experts (substantive)
- Head Group (substantive, procedural and political

What does this function provide?

The chairperson has the final responsibility for providing the capability analysis.

In other words, the final report and the recommendation to the Head Group about the generic and specific capabilities that require priority attention.

The chairperson also plays a role by the changeover from capability analysis to actual follow-up policy. This role is more informal and is aimed at chasing up and facilitating (with background information) the follow-up policy.

Who works together with this function?

National Risk Assessment scenario working group Secretary

Experts

Head Group

Own department or part of an organisation

Who uses the output?

Head Group

Interdepartmental working groups and steering groups (e.g. IWNV, SNV, IOCB, GCT)

Department that is responsible for the follow-up policy with regard to the capability analysis

The Minister of Security and Justice The Cabinet

What should I read?

Reader's guide; Introduction; Scenario development; The national risk assessment; Capability analysis and agenda-setting; Decision-making and implementation; Confidentiality; Steering Group on National Safety and Security and IWNV; Network of Analysts for National Safety and Security; Secretary of Capability analysis; Expert by the capability analysis; The meaning of risk; The risk diagram; Reading the risk diagram; Steps in the Capability analysis; The use of expert opinions; Protocol working method for Capability analysis; List of capabilities; Blank format for the details of prioritised capabilities; Final report of the capability analysis.

Secretary of the capability analysis

When does this function play a role in the process?

The role of secretary starts before the actual capability analysis. The secretary is involved from the time of the agenda-setting for a theme. He/she helps the Network of Analysts by finding contact persons from the departments who should be present during the exploratory discussions with the Network of Analysts. He/she is also present during these discussions so that he/she can give an explanation, if desired, about the methodology of national safety and security. The secretary is also present as listening participant at the scenario meetings organized by the Network of Analysts. The aim of this is to become accustomed to the subject.

What is the general assignment for this function?

The secretary facilitates the chairperson in producing the capability analysis. He/she is responsible (in collaboration with the chairperson) for inviting the right experts; timely organisation of inspiring meetings; the participants' knowledge of the methodology of national safety and security; taking minutes at the meetings; supporting the chairperson in compiling the final report and delivering the report (together with the chairperson) as well as explaining the report to the Head Group. He/she also helps (together with the chairperson) in making the agendasetting, put forward by the Head Group, concrete.

What input does this function require?

The National Risk Assessment scenario and the related scores; the chairperson's network for use in sending invitations and in relation to any professional literature, reports, parliamentary documents, media reports, etc., in order to gain insight into the subject.

What does this function provide?

Insight into the defences against the analysed threat and giving a proposal for what could be increased (in terms of prevention as well as response). Who works together with this function? Collaboration with the Network of Analysts during the phase of the National Risk Assessment. During the capability analysis there is collaboration with all the relevant partners who can help in achieving an insight into the defences against the threat to be analysed. This includes representatives from government, the business

Who uses the output?

community and the academic community.

The output is intended for the Head Group on national safety and security. The final report from the working group is delivered by the Head Group. The Head Group makes an overall analysis of the reports provided by the various different working groups and makes a proposal for the agenda-setting for the capabilities to be increased. Sharing the final reports from the working groups and the overall analysis and the proposal for agenda-setting for the Head Group are processed in the findings report on National Safety and Security and the letter of progress to the House of Representatives.

What should I read?

Reader's guide; Introduction; Scenario development; The national risk assessment; Capability analysis and agenda-setting; Decision-making and implementation; Confidentiality; Steering Group on National Safety and Security and IWNV; Network of Analysts for National Safety and Security; Chairman of capability analysis; Expert by the capability analysis;

The meaning of risk; The risk diagram; Reading the risk diagram; Steps in the capability analysis; The use of expert opinions; Protocol for working method of capability analysis; List of capabilities; Blank format for the details of prioritised capabilities; Final report of capability analysis.

Expert by the capability analysis

When does this function play a role in the process?

From the start of the capability analysis. The capability analysis starts with bringing together a group of experts by the chairperson and the secretary of the capability analysis.

What is the general assignment for this function?

Providing substantive knowledge and expertise on the theme of the relevant capability analysis. Where possible, the expert should provide substantiation for his/her opinions and/or comments.

The expert can participate in the capability analysis on behalf of a particular organisation or under his/her own name. Indication must be given when an expert provides his/her opinion under his/her own name.

What input does this function require?

- Information about the background and the scoring of the scenario (preferably by the coordinator of the scenario working group).
- The scenario and its related scoring (by the Network of Analysts via the chairperson and/or secretary).
- · General information about the National Safety and Security Strategy (by the secretary and possibly also the chairnerson).
- Information about the working method of the capability analysis and the expected output (by the secretary and possibly also the chairperson).
- Information about the role of experts by the capability analysis (by the secretary and possibly also the chairperson).

What does this function provide?

Together with the other experts, the secretary and the chairperson, the expert provides the National Risk Assessment. The expert achieves this by participating in the expert meetings and possibly also by individual interviews or e-mail contact. The expert will contribute his/her own expertise to the discussions and enables, together with other experts, a summary to be compiled of the capabilities to be increased and a more in-depth description of the capabilities with the highest priority for being increased.

Who works together with this function?

Project leader Working group coordinator Experts

Who uses the output?

Chairperson Secretary **Head Group**

Interdepartmental working groups and steering groups (e.g. IWNV, SNV, IOCB, GCT)

Department that is responsible for the follow-up policy with regard to the capability analysis The Cabinet

What should I read?

Reader's guide; Introduction; Capability analysis and agenda-setting; Decision-making and implementation; Confidentiality; Steps in the Capability analysis.

Facilitator

When does this function play a role in the process?

The facilitator plays a role in different parts of the National Safety and Security Strategy.

He/she supports the chairperson/secretary of the working group in compiling the agenda and determining the approach. The facilitator is responsible for providing explanations during the work meetings and for the correct manner of applying the methodology.

What is the general assignment for this function?

Improving the quality and standardisation of the processes by the assessment of the scenario and the capability analysis. The facilitator also gives advice by the development of a scenario, so that the scenario is suitable for assessment

What input does this function require?

Insight into the description of a scenario and the scenario scores, including the relevant motivation. Knowledge of the step plan for the capability analysis and the list of capabilities. In order to be able to write scenarios, the facilitator should have sufficient knowledge of the demands that are set on a scenario. The method of scoring on impact and likelihood is important for the National Risk Assessment process.

What does this function provide?

Improvement in the quality of the capability analysis and the National Risk Assessment and improved possibility to compare the results from the capability analysis and the National Risk Assessment between the different working groups (scenarios). The facilitator also provides support for technical sections of the National Risk Assessment. Who works together with this function? The Network of Analysts and the chairperson and secretary of the working groups for the capability analysis.

Who uses the output?

The members of the working groups.

What should I read?

The whole guide.

Head Group

When does this function play a role in the process?

At the end of the capability analysis.

What is the general assignment for this function?

The Head Group comprises a few members from the Interdepartmental Working Group on National Safety and Security (IWNV). The departments that are represented by these members are those most involved with the national safety and security. The secretarial work is carried out within the Ministry of Security and Justice. The Head Group views the different capability analyses in relation to each other, makes a proposal for prioritising the increase of capabilities (including capabilities that are relevant to multiple scenarios), writes the findings report and the letter of progress and supervises the process in the direction of the House of Representatives.

What input does this function require?

The Head Group uses the capability analyses and the National Risk Assessment on which it is based. The Head Group also has an overview of the presence of knowledge from the letters of progress from previous years (for the benefit of maintaining consistency over the years).

What does this function provide?

The Head Group provides the findings report and the letter of progress. In addition, the Head Group is responsible for a smooth process towards IWNV, SNV, the Cabinet and the House of Representatives.

Who works together with this function?

The Head Group is the connection between the coordinators and secretaries of the capability analyses and the IWNV. Together with the coordinators and the secretaries of the capability analyses, the Head Group holds consultations in order to identify white spots and any lack of clarity in the capability analyses.

The Head Group consults with the IWNV about the contents of the findings report and the letter of progress.

Who uses the output?

The output from the Head Group is sent to the House of Representatives via the Steering Group on National Safety and Security and the Cabinet.

What should I read?

Reader's guide; Introduction; Process of choices for scenarios; Scenario development; The national risk assessment; Capability analysis and agenda-setting; Decision-making and implementation; Confidentiality; Steering Group on National Safety and Security and IWNV; The risk diagram; Reading the risk diagram.

Time horizon

The basic principle in the development and assessment of a scenario forms the time horizon of 5 years. The meaning of the time horizon of 5 years varies for incident scenarios and process scenarios.

Incident scenarios

Incident scenarios are assessed over a period of 5 years. This may refer to now until 5 years time, but can also refer to a period of 15 to 20 years from now. Assessments over the distant future have a purpose in the case of trends (for example, the rise in sea levels) or if there are indications that investments in the necessary capabilities cost too much time.

The impact of an incident scenario is determined primarily by the characteristics of the incident and the indicators that apply to a specific impact criterion. In case the time period has an influence on the size of an impact criterion and is not defined by the indicators in use, then the size will be estimated over a period of up to 5 years. Example: the financial consequences of a calamity through market/production losses for a period of up to 5 years.

The likelihood is determined by answering the question: what is the probability that the scenario occurs during the chosen period of 5 years?

Process scenarios

Process scenarios are characterised by the expectation that the impact and/or likelihood increases over time. For this reason the time horizon under consideration may be different: the coming 5 years (o-5 years), but also over a period between 10 and 15 years, or between 20 and 25 years.

In terms of a process scenario, it is so that the extent of several of the impact criteria will increase during the period. The extent of the impact is estimated on the basis of the expected increase of the time period of 5 years in question. Multiple different time periods will often be assessed for process scenarios.

The likelihood is determined by answering the question: what is the probability that the scenario will occur during a period of 5 years starting at the present time, over 10 years or over 20 years.

The risk assessment of the process scenarios in the longer term can be useful and necessary, since the development of the necessary capabilities costs (a great deal of) time and needs to be started straight away.

Vital products and services by the scoring

The vital infrastructure, vital sectors and their vital products and services deserve explicit attention. For this reason the vital products and services are taken into consideration both in working out the scenarios as well as in the scoring.

In order to achieve a correct score and substantiation of the impact, it is important to assess whether the vital infrastructure will be impaired and to what scale this will happen. This is particularly relevant in determining the economic damage/costs and for the impact on everyday

The table below shows which of the vital products/services thereby cited will be impaired in the scenario. By "impaired" is meant: complete breakdown or to such an extent that this has negative consequences for the provision of services and therefore also for the functioning of (parts of) society.

This does not involve a score; it simply involves the principle of breakdown. That may be an effect of primary order in a scenario, but it may also be an effect of the secondary order. The condition for a check in the table is that the breakdown takes place in an automatic causeeffect chain and that there is a direct relation to the cause. It is assumed that the direct order is no longer so clear from the third order.

Example:

• Breakdown of an electricity power station (primary order effect of an incident) also leads more or less automatically, due to the power cut, to the breakdown of other vital products and services (second order effect). This leads to checking those other vital products and services in the table. Breakdown of those other products and services can also have consequences for yet other vital products and services (third order); however, these are not checked.

The table is used by the scoring of the actual impact criteria. The idea behind this is that the impact criteria cover all the consequences that may arise through the breakdown of vital products and services; the table with vital products and services (see below) can be used thereby as a checklist.

Sector	Product or service
1) Energy	1. electricity 2. natural gas 3. oil
2) Telecommunication/IT	4. landlines for telecommunication provisions5. mobile telecommunication provisions6. radio communication and navigation7. broadcasting services (crisis communication)8. internet access
3) Drinking water	9. provision of drinking water
4) Food	10. provision and security of provision of food
5) Health	11. emergency care and other hospital care12. medicines13. serums and vaccinations14. nuclear medicine
6) Financial	15. payment services / payment structure16. governmental financial transfers
7) Controlling the flow of and managing the surface water	17. managing the water quality18. controlling the flow and managing the quantity of water
8) Public Order and Security	19. maintaining public order20. maintaining public safety and security
9) Legal system	21. dispensation of justice and detention22. law enforcement
10) Public administration	 23. diplomatic communication 24. provision of information from the government 25. armed forces 26. decision-making in public administration
11) Transport	 27. main port Schiphol 28. main port Rotterdam 29. main roads and main sailing routes (government infrastructure) 30. railway system
12) Chemical and nuclear industry	31. transport, storage and production/processing of chemical and nuclear substances

Demands of a scenario

Once the choice of theme has been made by the Steering Group on National Safety and Security, then follows the scenario development. However, not every scenario is suitable for the National Safety and Security Strategy. Here follows a description of the demands set on a scenario in order for it to be suited to the National Safety and Security. This is followed by the demands that are set for a scenario concerning the practicability and consideration is given to the choice of a scenario in relation to the complete set of scenarios.

Basic principles for a scenario

One important first principle is that all scenarios are possible (i.e. plausible), but they do not all need to have the same level of likelihood as other scenarios. A second basic principle for the development of scenarios is that the prior expectation is that the scenario has an impact on a national scale and causes impairment to at least one of the vital interests (territorial security, physical security, economic security, ecological security, and social and political stability). The list of separate impact criteria should continue act as the basis.

The third basic principle is that the scenario should contain sufficient information in order to be able to score in terms of likelihood and impact according to the criteria set thereby. This does not mean that the scenario must give the exact scores for the different criteria, but offers handles for the scoring experts in order to be able to apply the criteria.

In addition, the following demands are applied to a

- the scenario is a plausible story, with factually supportive information; or, in other words: a report of events that could occur;
- the scenario is written uniformly (according to an outline), and can vary in seriousness up to the worst possible situation;
- it is compiled consistently and logically;
- it is manageable mentally;
- the scenario is concrete enough that it is possible to be able to deduce as to which capabilities will be needed in that scenario;
- existing policy is included in the development of the scenario.

Demands on information

In addition, demands must be set for a scenario in order to make the analysis and scoring of it actually possible. It should also be possible to determine whether a specific impact criterion applies in the scenario. This means that the following demands are set for a scenario:

- it must contain enough background data (from the real or fictive past) to be able to substantiate the context, the trigger and the lead up to the scenario;
- · it contains concrete information about the nature and extent of all types of consequences that could ensue from the described (series of) event(s); the list of impact criteria, with its accompanying measurement quantities and indicators, can serve hereby as a checklist;
- it contains no information that is irrelevant before the red line of the described (series of) event(s) and which would therefore divert the attention;
- it contains supplementary information specifically about geographical location, weather/climate conditions, number of people, type of buildings, or suchlike, if that is important in determining the nature and extent of the scenario, including, for example, an indication as to whether in principle there would be fatalities or the seriously injured who may still die.

Scenario as fictional point of possible scenarios

It must apply that the whole collection of scenarios must be mutually distinguishable and cover the potential scenario space in terms of gradations of risk; the scenarios are "fictional points" in the continuum of variations and possibilities. The variation in the seriousness of a scenario between a "minimum" and a "maximum" variation can be achieved in a number of different ways. This means that more serious and less serious scenarios may be possible, just as more likely and less likely scenarios. Development of different variations of a scenario only applies if it is expected that the variations will provide other insights about the capabilities required. This can be achieved, for example, by thinking up a number of sufficiently different variations per theme or by working out in detail completely different scenarios, as long as these are mutually distinguishable in relation to the capabilities thereby required.

Scenarios can vary from each other, for example in size and intensity of the events and their consequences, and possibly other circumstances. By changing the events in a scenario, this will also change the likelihood of the scenario.

If the scenario only describes one incident, then the nature of the incident (and its direct cause) will initially determine the level of seriousness. By adding more or less favourable circumstances (such as numbers of people, wind direction, proximity of crucial facilities, whether or not the service/ business effected is of a vital nature), the seriousness of the scenario as a whole will be influenced.

Also in the case of a series of events, by making careful choices about those events and their accompanying aggravating or mitigating circumstances, the seriousness of the whole scenario will be influenced and can be positioned between a realistic minimum and maximum.

The enclosed form has been developed as an aid in the development of scenarios. By using this form, the scenario group can check whether all the elements necessary for the scoring of the scenario are present.

Scenario development and likelihood

The National Safety and Security Strategy is based on the development and assessment of scenarios that form a threat to the vital interests of the Dutch state and/or society. The scenarios are assessed in terms of likelihood and of impact. In relation to the likelihood, when developing the scenarios the following three categories of guiding principles should be taken into account:

- · general
- description of scenario
- data analysis

General guiding principles

The likelihood is not determined for the specifically written scenario, but for a cluster of scenarios within the theme with comparably serious consequences as described in the specific scenario³.

In order to determine the likelihood, a division of five classes is deployed (classes A to E).

Within this division, class A represents a scenario that is classified as highly unlikely, and class E represents a scenario that is classified as highly likely. The relationship between the classes has been kept as equal as possible. If it is possible to make quantitative estimations of the likelihood, then the distance between the classes amounts to a factor of 10.

The difference between the classes (on the basis of a factor of 10) also allows for a certain robustness in relation to the estimate of chance, which does justice to the imprecise nature of the estimate of chance.

The likelihood is expressed as the likelihood that the scenario will occur during a period of five years. In relation to incident scenarios, in many cases this period corresponds to the coming 5 years; motivation may be given to vary this.

In the case of process scenarios, the 5-year period is normally placed at a later time horizon (for example 10-15 years, 20-25 years from now), and moreover multiple periods can be taken into consideration. Further details about this are given under "Scenario as fictional point."

Guiding principles by the description of scenario

Scenarios are distinguished mutually under:

- 1. incident hazard scenarios
- 2. incident threat scenarios
- 3. process scenarios
- 1. The likelihood of an incident hazard scenario is primarily determined by (the nature of) the incident and its consequences. For this reason it is important that the scenario provides a good description of the events that lead to the incident, as well as a clear description of all the consequences. The likelihood is also influenced by the context within which the incident scenario takes place. This means that the description of the scenario must give insight into relevant technical/technological or social developments, relevant legislation, compliance with the legislation and risk management measures taken.
- 2. The likelihood of an incident threat scenario is determined by the fact that the proposed (terrorist) threat will be successful. This means that the likelihood is primarily determined by the nature of the threat and the envisaged consequences. For this reason it is important that the scenario provides a good description of the capabilities and intentions of the threatening party, as well as a clear description of the envisaged consequences. Incident threat scenarios are very much bound by time. This means that it is important that the context of the scenario is clearly written: the historical development, social conditions, etc. The likelihood that the threat is successful is partly determined by the vulnerability of the envisaged targets. The appendix gives insight into the nature of the vulnerability for various different envisaged targets; as the occasion arises the scenario will need to provide information about the level of vulnerability.

³ example: The likelihood is not determined for 'known person A is murdered at location B by terrorist group C, which has D characteristics', but for 'a known Dutch national is murdered by a terrorist group, which has D or similar characteristics'.

3. The likelihood of a process scenario is determined by the described development of the scenario within the time. A process scenario is characterised by the fact that the hazard or threat is already present, but is expected to lead to a greater negative impact on the vital interests during the course of time. This process is gradual and possibly not immediately identifiable. The likelihood of a process ¬scenario is primarily determined by the nature of the process, the consequences described, the time period and the policy measures described by the government or other relevant parties. The description of the process scenario should give insight into the above-mentioned aspects.

Guiding principles by data analysis

Since we aim at 'disruptive' incidents, there will be a lack of reliable case-based reasoning for a large proportion of the scenarios. In addition, particularly in the case of threat scenarios and process scenarios, these can only be characterised to a very limited extent by past experiences. The result of this is that determining the likelihood for the individual scenarios will be based on several different sources of information:

- · quantitative:
 - · historical (analogue) events, case-based reasoning;
 - · probability model and design calculations,
 - · failure data of elementary events in combination with network analyses / decision charts.
- qualitative:
 - expert opinions;
 - trend analyses;
 - · threat analyses.

Explicit attention should be given in the description of scenario to the available sources of information, both quantitative as well as qualitative.

The Vulnerability score chart gives insight into the level of vulnerability for the distinguished categories.

		Vulnerability HIGH	Vulnerability LOW
Threat from external source	Locations	Multiple unchecked entrances; no complete fencing Public highways on location No CCTV	Completely closed location; limited number of entrances Entry control and registration CCTV or other form of intrusion security
	Insufficient control and registration No security against forced entry Multiple users		Security against forced entry, engine immobilisers GPS Security training for drivers Procedures relating to route, changes of route, incidents, parking Use of secure car parks
	Means of transport	No security No specific training for drivers No procedures relating to route, parking, incidents, etc.	Security against forced entry, engine immobilisers GPS Security training for drivers Procedures relating to route, changes of route, incidents, parking Use of secure car parks
	IT systems	No information policy Large quantity of internet access to systems No/ limited policy and compliance relating to anti-virus security, firewalls, passwords Not BS 7799 certified No disaster plan; no decent back-up Incompetent members of staff or staff shortages	Information policy on paper and communicated Controlled and secure access to systems Anti-virus security, firewall, compliance with password policy BS 7799 certified Disaster plan in place and practised Active involvement in the exchange of security information
	People	No security measures	Personal security 24 hours per day CCTV home security, security against forced entry Route plans, accommodation, etc.
Infiltration		No screening, criminal records investigation Frequent use of contractors, temporary workers Bad personnel policies, bad working atmosphere No supervision/procedures in relation to sensitive information	Screening of personnel and temporary workers, third-party employees Strict rules governing the hiring in of contractors, temporary workers Open communication, good personnel policies Personnel well aware of deviation of the norm

Awarding the impact scores

Assessing the impact of a scenario according to the impact criteria is achieved in a number of steps:

- 1. is the information in the description of scenario sufficient, complete and comprehensible in order to be able to score the impact?
- 2. which vital products and services will be impaired?
- 3. does an impact criterion apply?
- 4. what does the impact criterion score?
- 5. should uncertainty lead to lower and upper limits?
- 6. finding out whether a correction of the valuation label (or interval) is necessary.
- 7. translating the scoring information to a valuation label, possibly a label interval.

Explanation of 1. is the information in the scenario sufficient?

The scenario must contain sufficient information in order to enable scoring in the correct manner. Check for the presence of sufficient specific information, including background details (from the past, for example, or fictional).

Explanation of 2. which vital products and services will be impaired?

In all cases it must be found out (with the help of the table) which vital products and services will be impaired. Include this information when scoring each of the impact criteria.

Explanation of 3. does a criterion apply?

It is possible that an impact criterion does not apply at all to a particular scenario. In this case the score is marked with 'X' (or 'NA'). This means that the impact criterion in question is not included in the final assessment for such a scenario.

Example:

A terrorist attack on people or buildings generally speaking has no influence at all on the ecological security. Therefore the score X ("not applicable") will be awarded for the impact criterion for long-term impact on the environment and on nature (flora and fauna).

A large riot leads to a number of seriously injured, but no fatalities. The score for fatalities is therefore o (falling under the interval o to 10 fatalities, see by impact criterion C2.1) instead of X ("not applicable"), because there is the potential for fatalities as a result of the incident. The impact criterion therefore does apply, but is given the value of o in the specific scenario, which will lead to being awarded the label A (see step 5).

Explanation of 4. what does the impact criterion score?

Scoring an impact criterion is carried out with the help of quantitative or qualitative indicators. In many cases this will involve numbers of people, the size of an area, a period of time or combinations of these. In the case of qualitative indicators, it must be determined to what extent an indicator applies.

One important rule is that only effects of the 1st or 2nd order are scored, meaning the effects that occur directly as a result of the events in the scenario or in an automatic cause-result chain. Once the point is reached when there is decision-making concerning response measures, for example, which could in turn lead to undesirable effects, then the latter effects will not be scored.

Example:

Following a serious accident at a chemical plant, the decision is taken by the authorities for a partial evacuation. The consequences of that evacuation may be partly negative, but this is not included in the scoring because evacuation is not an automatic consequence of an accident and requires careful decision-making. N.B. The consequences of an evacuation are included, however, if the evacuation is part of the storyline of the scenario.

In the scoring mechanism for some of the impact criteria the period of time is included explicitly as the size of the measurement. If this is not the case (for example by C3.1.A Costs), then a 5-year period should be taken.

The blank forms can be used by the experts for setting down the scores.

Explanation of 5. Uncertainty

A table is included for every impact criterion. Indication should be given in the table of the following:

- V (forecast value: it is most likely that the score from the measurement sizes or the indicator score will be included in this box, but it could be a little more or a little less):
- O (lower limit: the score is almost certainly equal to or more than O);
- B (upper limit: the score is almost certainly equal to or less than B).

The V, B and/or O may be included in the same box when the lower limit and the upper limit are close to the forecast value.

These limits provide a way of modelling various types of uncertainty, such as when the experts do not know exactly what an effect could be or there is a difference of opinion between the experts about the correct values of

the score. In case of the latter, the V (forecast value) might represent the majority point of view and B and/or O the different opinions. This results in the total interval [O..V..B] covers the breadth of opinions. Argumentation and explanation of the scoring should be added to the scoring report and should be based on the storyline of the scenario.

The limits are used in a sensitivity analysis in order to investigate to what extent this uncertainty influences the final assessment of the impact. However, the importance of uncertainty in the National Risk Assessment goes further than just this uncertainty analysis. As Van Asselt (2013) commented, the National Risk Assessment is in fact an attempt "with the help of prospective study to investigate relevant uncertainties and to discuss these thoroughly" so that policy choices, which are as wellfounded as possible, can be made about capabilities to be increased.

Example

area →	Local max. 100 km²	Regional 100-1000 km²	Provincial 1000 – 10.000 km²	National > 10.000 km²
time period↓	(< 0,25% aerea)	(0,25% - 2,5% area)	(2,5% - 25% area)	(> 25% area)
2 to 6 days				
1 to 4 weeks	0	V		
1 - 6 months		В		
½ year or longer				

Explanation of 6. Is a correction necessary?

The possibility for correction is indicated by almost all the impact criteria. This means that the final score to be recorded of an impact criterion can be corrected to a higher or lower value on the basis of an additional consideration. The possibility for correction can be recorded separately, if necessary, for the lower limit, the forecast value and the upper limit.

Example

If the population density of the affected area is very low, then the consequences of a crisis will be less than in an area of average population density. Another example is if the expressions of social unrest are large-scale and long-term, the valuation of the social psychological impact will be increased.

Argumentation and explanation of the argumentation that leads to the score, the award of lower and upper limits and the application of a correction factor should all be included with the scoring report.

Explanation of 7. Awarding a label

The experts score in the manner set out above in the table belonging to each specific criterion and they determine the uncertainty and the correction factor. The chairperson of the working group then converts the scores into labels (A-E) using the tables that can be found here.

The division of classes is as follows:

A. Limited consequences

B. Substantive consequences

C. Serious consequences

D. Very serious consequences

E. Catastrophic consequences

If the impact criterion does not apply, then the score will be X.

Impact criterion 1.1 Encroachment on the territory of the **Netherlands**

Impact criterion 1.1 concerns the vital interest of territorial security:

"The peaceful functioning of the Netherlands as an independent state in the broadest sense, or the territorial integrity in the narrow sense."

Impact criterion 1.1 reads: "The actual or functional loss, or out of action and/or access or the loss of control over parts of the Kingdom of the Netherlands (including territorial areas overseas and including territorial waters and airspace)."

Under functional loss particularly means the loss of the use of buildings, residences, infrastructure, highways and ground.

Examples of causes of threat include: flooding from rivers, terrorist attack in the Netherlands, separation of a region, outbreak of an animal disease, attack by a foreign power, damage or loss of control over and/or possession of Dutch embassies, chemical/biological/nuclear contamination. The following are used as indicators for measuring the impact:

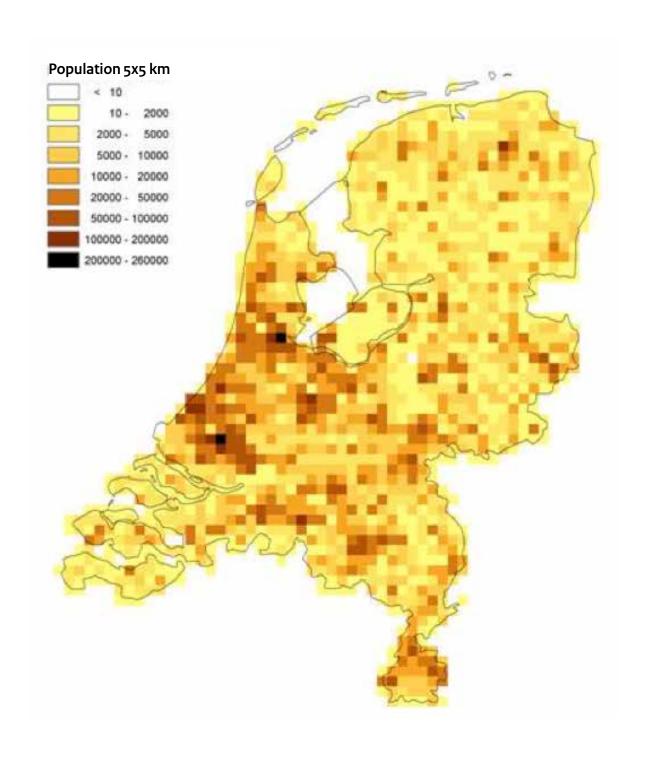
- the surface area of the threatened or affected area (geographical demarcation);
- the time period during which the area is threatened or affected;
- the population density of the affected area.

The creterion does/does ot apply

area→ time period↓	Local max. 100 km² (< 0,25% area)	Regional 100-1000 km ² (0,25% - 2,5% area)	Provincial 1000 – 10.000 km² (2,5% - 25% area)	National > 10.000 km ² (> 25% area)		
2 to 6 days						
1 to 4 weeks						
1 - 6 months						
½ year or longer						
Is the population density in the area on average < 250 people / km2? Yes/No						
	Is the population density in the area on average > 750 people / km2? Yes/No					

Impairment of the use of digital space (cyber space) is not scored under this criterion. This aspect falls under "access to internet" as one of the vital products and services and is cited as indicator under criterion C_{5.1} insofar as the (virtual) accessibility and communication is concerned.

The following map can be used in order to determine the population densities in the Netherlands (source RIVM).



Impact criterion 1.2 Infringement of the international position of the Netherlands

Impact criterion 1.2 concerns the vital interest of territorial security:

"The peaceful functioning of the Netherlands as an independent state in the broadest sense, or the territorial integrity in the narrow

Impact criterion 1.2 reads: "The damage to the reputation or the influence or appearance of the Netherlands abroad."

Examples of causes of threat include: terrorist attacks on embassies, collapse of international organisations, Srebrenica scenario, increasing numbers of Dutch nationals misbehaving elsewhere, remarks made by Dutch nationals or the Dutch media which are taken to be (extremely) provocative by certain groups. Also remarks made by Dutch politicians, in Dutch foreign policy and/or Dutch ethical policy (regarding for example soft drugs, abortion and euthanasia) can impair the international position of the Netherlands.

There are other causes imaginable that can have a negative influence on the functioning of the Dutch embassies and other representatives abroad: floods, diseases, other non-wilful accidents. Such cases do cause (possibly serious) hindrance, but the integrity of the international position or influence of the Netherlands will not be infringed thereby. Usually other embassies (of friendly countries and/or organisations) will take over the tasks temporarily. Therefore these cases do not lead to a relevant impact score on this criterion, although possibly on criterion 1.1.

The opposite can lead these causes to a relevant impact score if these events actually take place within the Netherlands and therefore affect foreign embassies and representatives. This could have an influence on the reputation of the Netherlands.

There are several indicators that give additional information to this criterion. These are divided up into categories as follows:

- 1. Actions
- demonstrations aimed against the Netherlands/EU/ NATO/the West;
- threats aimed against embassies/representatives (including property and/or personnel) and/or other targets belonging to the Netherlands/EU/NATO/the West (including attacks on Dutch missions);
- · negative publicity and/or hate campaigns in the media and/or websites and/or cyber attacks, etc. against the Netherlands/ EU/NATO/the West;
- pronouncement of one or more "fatwas" against influential/reputable people in the Netherlands/EU/ NATO/the West.
- 2. Political functions
- · expulsion of diplomats and/or termination of diplomatic relations with the Netherlands/EU/NATO/the
- · refusal or cancellation of important visits by representatives of the Netherlands/EU/NATO/the West to other countries, or by foreign representatives to the Netherlands/EU/NATO/the West;
- formation of a bloc against the Netherlands/EU/NATO/ the West:
- · cancellation or boycott of international political conferences in the Netherlands organised by the Netherlands or other countries/organisations.
- 3. Non-political functions (N.B. the financial damage of these fall under criterion 3.1)
- boycott of goods from the Netherlands/EU/NATO/the
- · refusal or cancellation of trade agreements and/or other (commercial) agreements with the Netherlands/EU/ NATO/the West;
- boycott of cultural events (e.g. performances, exhibitions, sport) organised by the Netherlands/EU/NAT/the West abroad, or in the Netherlands/EU/NATO/the West by countries other than the Netherlands;
- refusal or cancellation of cultural agreements with the Netherlands/EU/NATO/the West;
- reduced tourism in the Netherlands/EU/NATO/ the West;
- and other (e.g. academic) events.

The division of classes is then based on: the number of indicator categories that apply; the number of indicators per relevant category that apply; the extent of the seriousness to which the indicators are impaired.

The gradation "limited" applies if per relevant category there is only one indicator applicable and if this indicator does not apply to a serious extent.

The gradation "substantial" applies if added up over the relevant category more than half of the above-mentioned individual categories apply, irrespective of the level of their seriousness.

The gradation "average" applies to the other (in between) cases.

Impact criterion 2.1 Fatalities

Impact criterion 2.1. concerns the vital interest of physical security:

"The peaceful functioning of the people in the Netherlands and surrounding areas."

Criterion 2.1 reads: "Fatal injuries, immediate fatality or early fatality within a period of 20 years."

Examples of causes of threat include: accident at a chemical plant, large-scale dyke breaks, terrorist attack, outbreak of an epidemic, large-scale disturbances. Indicators to be used in measuring the impact are:

- the number of fatalities as a result of the incident;
- the time of fatality.

The creterion does/does not apply

number → time ↓	< 10	10-100	100- 1000	1000-10.000	> 10.000
Immediate fatality (within 1 year)					
Early fatality (within 20 years)					

In case both categories (Immediate fatality and Early fatality) are applicable, the score goes for the highest impact class.

Impact criterion 2.2 Seriously injured and chronically ill

Criterion 2.2. concerns the vital interest of physical security:

"The peaceful functioning of the people in the Netherlands and surrounding areas."

Criterion 2.2 reads: "Cases of injury in the categories T1 and T24, and people with long-term or permanent health problems such as breathing difficulties, serious burns or skin disorders, damage to hearing, suffering post-traumatic stress syndrome (PTSS). Victims in the categories T1 or T2 need immediate medical assistance and should be treated immediately (T1) or must be kept under continuous observation and be treated within 6 hours (T2). Chronically ill people who experience limitations over a long period (> 1 year): needing medical care, being wholly or partially excluded from participating in their work, experiencing difficulties in their social functioning due to their illness. "

If it appears from the scenario that a number of victims, which fall under the categories T1 or T2 cannot be given suitable assistance within 1 hour (T1) or within 6 hours (T2) because they cannot be reached by the emergency services or through lack of decent equipment, then the victims should be considered as 'immediate fatalities' and therefore counted in that category. It should always be explicitly stated in the description of the scenario how many victims are cases in the categories T1 and T2, even if these fatalities are as a result of the lack of timely assistance, because this can provide a point to pick up on in the strategic planning.

Examples of the causes of threat include: accident at a chemical plant, terrorist attack with biological or chemical weapons, large-scale disturbances, Srebrenica scenario.

The number of chronically ill and seriously injured is taken as indicator for measuring the impact.

The creterion does/does not apply

Number	< 10	10-100	100-1000	1000-10.000	> 10.000

⁴ T1 and T2 are triage classifications taken from emergency medicine

Impact criterion 2.3 Physical suffering (lack of basic necessities of life)

Criterion 2.3. concerns the vital interest of physical

"The peaceful functioning of the people in the Netherlands and surrounding areas."

Criterion 2.3 reads: "Exposure to extreme weather conditions, as well as a lack of food, drinking water, energy, housing, basic sanitary provisions or other primary necessities of life."

The criterion does/does not apply Examples of causes of threat include: terrorist attack on the drinking water provisions or energy provisions, long-term contamination of the surroundings, radiation leak as a result of an incident at a nuclear power plant, toxic cloud or biological agent, large-scale destruction following a natural disaster, explosion or fire in a densely populated area.

Indicators used for measuring the impact are:

- number of people affected;
- time period.

The creterion does/does not apply

number → time eriod↓	< 10.000 affected	< 100.000 affected	<1.000.000 affected	>1.000.000 affected
2 to 6 days				
1 to 4 weeks				
1 month or longer				

Impact criterion 3.1 Costs and impairment of the economy

Criterion 3.1 concerns the vital interest of economic security:

"The undisturbed functioning of the Netherlands as an effective and efficient economy."

Impairment of the economic security is measured according to two aspects:

A. costs: the amount of money in terms of the costs of repair of damages suffered, extra costs and lost income B. impairment of the vitality of the Dutch economy

Criterions 3.1a and 3.1b should be scored and the highest score processed.

N.B.: When scoring the impairment to the economic security, both aspects should be assessed firstly and scored in the tables. The highest label values thereby will apply as label value for the criterion 3.1 for the scenario in question. Both impact scores and their motivations will be taken into consideration, however, when looking into the measures to be taken and the capabilities needed thereby. It is therefore necessary that the complete set of data should be given for both impact criteria, and that these are provided with well-reasoned substantiation.

A Costs

Criterion 3.1. A reads: "An amount of money in terms of repair costs for damage suffered, extra costs and lost income."

Possible causes of threat

Examples of causes of threat include: large-scale streams of refugees, pandemic causing massive reduction in the workforce, infectious animal diseases (foot and mouth disease), armed conflict in a region from which the Netherlands acquires its raw materials, large-scale breakdown in the payment systems, collapse of the financial markets.

This criterion deals with the costs over the period of five years described in the scenario. The indicators used for measuring the impact are:

- · material damage and costs;
- · damage to health and associated costs;
- · financial damage and costs;
- costs of combating, assistance and recovery.

The impact is based on the total amount of damage suffered in terms of money; the damages from the separate categories 1 to 4 are added together.

The criterion does/does not apply

Costs in €	< 50	< 500 million	< 5	< 50	> 50
	million		billion	billion	billion
1. material damage					
2. damage to health					
3. financial damage					
4. costs of combating and recovery					
total economic damage					

Explanation of the individual indicators for damages and costs of an incident. See the appendix for the key indicators that can be used in estimating the costs.

- 1. Material damage
- · Material damage to buildings, residences and infrastructure premises;

Value appraisal: rebuilding costs (including costs of clearing up)

· Material damage to inventory, machines, installations, transport vehicles for highways and waterways, stock; loss of livestock;

Value appraisal: replacement value

- · Reconstruction costs (IT) databases. Costs: integral cost price for administrative/IT staff
- 2. Damage to health
- · Costs of payments in case of fatality;
- Extra costs of healthcare;

Cost elements

- gross costs of hospital admissions (including treatment and ambulance);
- long-term care in nursing homes, rehabilitation clinics;
- possible correction for reduction in the normal care requirement in case of fully deployed healthcare
- · Extra costs of disability to work and surviving partners' and/or orphans' pensions.

Cost elements

- benefit payments for victims of disability to work;
- benefit payments for surviving relatives' (pre)-pensions.
- 3. Financial damage
- Immediate damage to business as a result of material damage and/or drop-out rate of employees and/or inability to use a location;
- recovery period represents the measurement for the time period of the damage to business;

Value appraisal

- net added value (excluding depreciation) of material damage:
- · gross added value of drop-out rate of employees, inability to use location;
- indirect damage to business as a result of the loss of demand for deliveries (materials, raw materials, energy carriers), or loss of communication/transport/main services;

Value appraisal

- gross added value of possible correction for substitution effects (replacement demand or new demand);
- · direct damage to business assets as a result of claims, fines or disposal (for example, through the nationalisation of a business), or direct damage to personal assets (for example, through compulsory purchase of home).

- 4. Costs of combating
- · Total costs of the deployment of operational services for the combating, provision of assistance, relief and evacuation;

Costs

- integral cost price of deployment of operational
- · costs of clearing up and restoration as a result of damage to nature and the environment.

Costs

• integral cost price of deployment of personnel and restoration services.

B Impairment to the vitality of the **Dutch economy**

Criterion 3.1. B reads: "Impairment to the vitality of the Dutch economy."

Examples of the causes of threat include: disappearance of outlets, great scarcity of raw and ancillary materials, collapse of the E(M)U, insufficient supervision of the financial markets, the creation of (state) monopolies, insufficient transport mobility, impairment to the consultation structures between the government, employers and employees.

In case of impairment to the vitality of the Dutch economy, this involves on the one hand the financial resilience of the economy (which is the ability to adjust and to absorb external shocks) and on the other hand production-related factors, such as access to markets, access to knowledge and availability of production factors. What is also important to the vitality is the spread within which the national production is affected: is the problem concentrated or is it spread over a wide spectrum of economic activities?

Indicators used for measuring the impact are:

- decrease in real income per capita of the population;
- · increase in the budget deficit as percentage of the GDP (national government; EMU definition);
- increase in unemployment (international definition).

The following additional criterion also applies:

• share of the sectors affected in the national production (gross added value) together with the duration of the interference.

The impact is based on the number of indicators that apply, as well as the extent of these indicators.

Assessment of the extent of the separate indicators can be made according to the table given below.

The explanation given by the impact criterion gives an insight into the definitions used, and also provides substantiation for the chosen boundary values of the separate indicators.

Extend	Decrease in real income per capita of the population	EMU deficit (national government)	Increase in unemployment
Limited	decreases by 0-1% during 1 year at least	increases to 4-6% of GDP during 2 years at least	increases by 2% to 3% in 1 year
Average	decreases by 1-2% during 1 year at least	increases to 6-8% of GDP during 2 years at least	increases by 3% to 5% in 1 year
Substantial	decreases by more than 2% during 1 year at least	increases to more than 8% of GDP during 2 years at least	increases by more than 5% in 1 year

The following table provides a translation of the number and extent of the indicators to the impact class:

The criterion does/does not apply					
Number of relevant indicators	1 indicator	2 indicators	3 indicators		
Extent					
all indicators score max. limited					
1 indicator scores max. average					
2 or more indicators score max. average	-				
1 indicator scores substantial, the rest max. limited					
1 indicator scores substantial, the rest max. average					
2 or more indicators score substantial	-				
Is the share of the gross added value of the sectors affected	more than 10% of the	gross domestic product	(see appendix)? Yes / No		
Is the time period of influence at least one month? Yes /	'No				

The lower limits of the indicators as given in the category 'Limited extent' should be taken as the 'baseline', therefore dated 2012.

This means that the final assessment of this criterion is an A, as long as:

- the real income per capita of the population increases,
- the EMU deficit remains under 4% of the GDP, and
- the unemployment increases by less than 2%, assuming that the criterion in principle applies to the scenario in question (otherwise the final assessment will

be NA).

The result of the impact score is then corrected:

• if the share of the gross added value of the sectors affected rises to more than 10% of the gross domestic product (see the explanation) and the time period of influence is at least one month, then +1 (e.g. C becomes D).

Impact criterion 4.1 Long-term impact on the environment and on nature (flora and fauna)

Criterion 4.1 concerns the vital interest of ecological

"The undisturbed continuation of the natural environment in and around the Netherlands."

Criterion 4.1 reads: "Long-term or permanent impairment to the quality of the environment, including contamination of the air, water or ground, and long-term or permanent disturbance of the original ecological function, such as the loss of diversity of types of flora and fauna, loss of special ecosystems, being overrun by foreign types."

Examples of causes of threat are: incidents whereby large quantities of toxic substances are leaked into the environment, such as by an accident in a chemical plant or at a nuclear power plant, an oil spill in the North Sea, or an armed conflict involving the use of CBRN weapons. Besides this, also incidents whereby nature areas are subjected to enormous physical damage, for example due to fire, incidents that are the result of climate change, such as breakdowns in the management of surface water (flooding) and the ensuing consequences (such as salinisation of the ground), storms (tornados). Impairment of the ecological security is measured according to two aspects:

A. impact on areas of nature and landscape that have been designated as being worthy of protection

B. impact on the environment in general, also outside the areas of nature and landscape already cited

N.B.: When scoring the impairment to the ecological security, both impact criteria must first be assessed and scored in the tables. The highest label value acquired hereby applies as the label value for the criterion 4.1 for scenario in question. However, both of the impact scores and their respective motivation will be taken into consideration when looking into the measures to be taken and the capabilities required thereby. This means that it is necessary for the full details relating to both criteria are provided, together with motivated substantiation.

The criterion applies if there is serious impairment of the nature and environmental values cited under A and B. It has been agreed in the methodology of the National Risk Assessment that when a criterion does not score in the scenario in hand, but a more serious variation of that same scenario could possibly lead to an impact score, then the criterion does apply, and in such cases the lowest impact score should be applied (label A).

In determining the impact score, the forecasted period of time of the impairment plays a general role. If the forecasted period of time is less than a year, the lowest score should be applied for all cases (label A); in the case of a forecasted period of time of longer than ten years (a 'permanent impairment'), then the label values should be raised by one step.

A Impact on specific areas of nature and landscape (flora and fauna)

Damage to the areas of flora and fauna that are designated by law or policy as worthy of protection (hereinafter referred to as 'nature areas'). In determining the seriousness of the effect it must be assumed that the nature area in question is damaged to such an extent that the area and its characteristic types of flora and fauna no longer remain in a 'favourable state of conservation'5, and that 'natural regeneration'6 of a favourable state of conservation can only be expected in the long term. This means, in fact, that the nature area can be considered to be 'lost' for the foreseeable future.

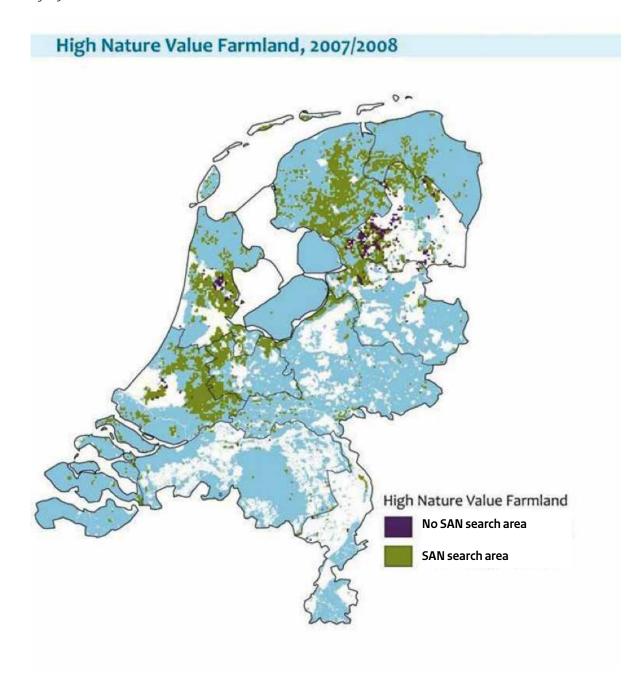
A differentiation is made between three different types of nature areas according to policy terms: breeding grounds of countryside birds (in agricultural sector, the so-called 'high nature value' areas); the Ecological Main Structure (EHS): that includes the EHS nature areas excepting the EHS areas which are also included under Natura 2000, hereinafter referred to as 'EHS areas'; and the nature areas designated in the Natura 2000 regulation, hereinafter referred to as 'Natura 2000 areas'. An overview of the three types is given in the maps in the figures 5.2 and 5.3.

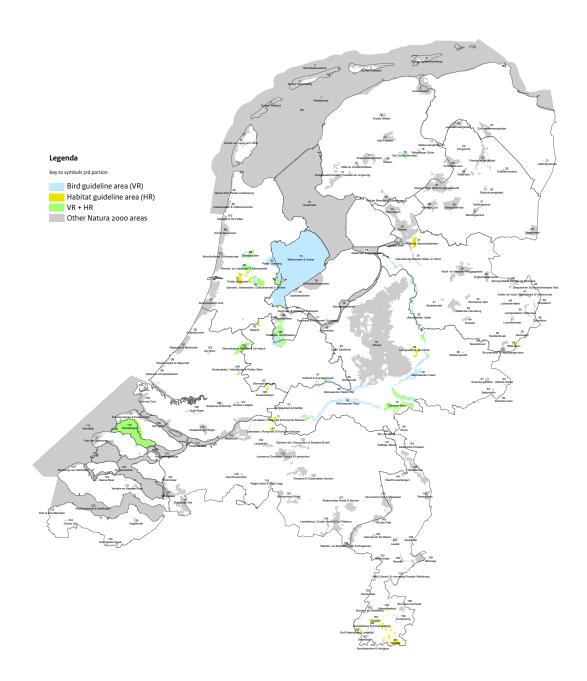
⁵ For further explanation of the meaning of 'state of conservation' see the Council Directive 92/43/EEC (http://eur-lex.europa.eu/ LexUriServ/LexUriServ.do?uri=CONSLEG:1992Loo43:20070101:NL:P

⁶ Under 'natural regeneration' is understood 'the return of damaged natural wealth and/or ecosystem functions to the state of reference' (see Directive 2004/35/EC, http://eur-lex.europa.eu/LexUriServ/ LexUriServ.do?uri=OJ:L:2004:143:0 056:0075:nl:PDF).

Overview of the breeding grounds of countryside birds, the so-called 'high nature value' agricultural areas. These breeding grounds of countryside birds are indicated on the map in dark blue and green.

Figure 5.2





Commissioning party



Agriculture, nature and food quality
Ministry of Agriculture, Nature and Food Quality
Directorate of Regional Affairs
Map production: Directorate of Knowledge

Overview map showing Natura 2000 areas

The borders of the areas of which the draft decisions relating to previous portions were made available for public inspection is in accordance with those of the draft maps of the relevant areas or of the final decisions (100, 101, 113). The remaining areas are marked out according to the indication (VR, 1986-2005) or the report

The damage to nature areas must be determined as the actual damage that is caused: it is assumed that the relevant nature area must be considered lost for the foreseeable future. The fact that a nature area is lost represents a consideration here; the seriousness of the loss is then expressed according to the type of nature area that is lost, as well as the surface area of the lost area.

Another factor that plays a role in determining the seriousness of the loss is the expected duration of the impairment. This depends on the question as to whether, and over which period, there could be natural regeneration.

Considerations regarding the nature and the possible value of a new, different type of ecosystem that could be created after the incident do not play any role at all: considerations that 'in place of a lost ecosystem, another ecosystem will come in its place' are not relevant to this consideration; in such cases there would be no 'regeneration'.

Indicators used for measuring the impact are:

- Type of the nature areas that lie within the affected area: it should be looked into whether there are nature areas within the affected area that are breeding grounds for countryside birds, areas included in the EHS or the Natura 2000 areas, or whether there is any contamination of the Wadden Sea. Impairment in these areas is estimated to be more serious in the given order.
- Relative surface area of the affected area: it should be determined regarding each type what percentage of the total surface area of the Netherlands is affected.

The criterion does/does not apply

Relatieve oppervlakte à					
Beleidscategorie ↓	<3%	3-10%	>10%		
Breeding grounds for countryside birds					
EHS areas					
Natura 2000 areas					
Wadden Sea					
Is the duration of the impairment less than 1 year?					
Is the duration of the impairment more than 10 years? yes / no					

The relative surface area can be calculated from the surface area in hectares as follows: for the breeding grounds of countryside birds: 3% = 7500 ha (8.5 by 8.5 km), 10% = 25,000 ha (15 by 15 km); for the EHS areas: 3% = 10,400 ha (10 by 10 km), 10% = 43,710 ha (21 by 21 km); for the Natura 2000 areas: 3% = 8,750 ha (9 by 9 km), 10% = 29,000 ha (17 by 17 km).

1.

When applying the table, the following considerations should be taken into account:

• The Wadden Sea is considered to be a separate nature area, which is of great importance because of its function as 'nursery' for sea life. For this area the line in the table for Natura 2000 areas is applied, therefore: 3% and 10% of the Wadden Sea is equal to 7,200 ha (8.4 by 8.4 km), respectively 24,000 ha (15 by 15 km).

⁷ The following values apply hereby: for the breeding grounds of countryside birds: 3% = 7,500 ha (8.5 by 8.5 km), 10% = 25,000 ha (15 by 15 km); for the EHS areas: 3% = 10,400 ha (10 by 10 km), 10% = 43,710 ha (21 by 21 km); for the Natura 2000 areas: 3% = 8,750 ha (9 by 9 km), 10% = 29,000 ha (17 by 17 km).

B Impact on the environment in general, (outside the areas of nature and landscape already cited)

Contamination of the environment in the general sense will usually lead to impacts that need to be scored under one or more of the impact criteria other than criterion 4.1. Examples include:

- If the impairment is so serious that there is a functional loss of the affected area, then this will fall under impact
- Impact of leaked chemical substances on public health: fatalities, (chronically) ill, physical suffering falls under impact criterion 2.
- A large number of environmental impacts must be placed under impact criterion 3; this relates, for example, to the costs in relation to:
 - restoration of the impairment to the environment
 - evacuation of people and (agricultural and pet) animals following environmental impacts
 - loss of the use of the environment for agriculture, stock breeding, fish farming and for 'ecosystem services'
 - loss of other 'use' functions of the environment, such as availability of surface water for water purification, recreational functions (for example, swimming water, tourism)
- Impairment of the environment may have a disruptive effect, with impairment to the air quality, whereby (some groups of) people will no longer be able to move about freely (impact criterion 5.1)

More explicit attention should to these considerations in the scenario.

Attention is also given to impairment of the environment

within criterion 4.1. This has been met in part, namely for the specific nature areas cited under A. In the areas that are not specifically designated as protected nature area the ecological effects are not measured against individual objectives for protection, but to the same generic ecological functioning as basis for the functioning of protected nature areas. It is considered permissible hereby that certain types will be impaired, if in the long term there also remains a functioning ecosystem with a wide diversity of flora and fauna. A good functioning ecosystem is thereby defined as a system that can maintain itself sustainably through a redundant composition of types, whereby the recycling of all kinds of materials is facilitated and energy streams remain in balance.

When formulating a scenario whereby impact on the environment is expected, the following considerations concerning the extent of the impact of an incident will play a role. It should be realised that the extent of that role is especially sensitive for choices that are made in the description of the scenario. This mainly involves the following choices:

- The nature of the disruptive factors, the types of disruption are:
 - leakage of toxic and/or radioactive substances and exposure to ionising radiation, fire, floods (which may possibly lead to salinisation of the ground or changes to the water quality);
 - mechanical damage (natural disasters such as storms, explosions, and also vandalism, wilful damage);
 - being overrun by foreign flora and fauna.
- In the case of substances:
 - The physical chemical and (eco)toxicological qualities of the leaked materials;
 - The quantities of leaked materials
 - The speed of the leak.
 - The receiving environmental compartment.
 - The place and nature of the incident.
 - The precise circumstances under which the incident occurs.

On the basis of the chosen scenario and the choices made thereby, the seriousness of the impairment to the environment that will ensue will be determined. A serious impairment to the environment either involves:

- that the intervention value that applies in the case of a chemical contamination is exceeded by the impairment,
- that the conditions for a functioning ecosystem are no longer satisfied for other reasons.

The seriousness of the impact is scored according to the absolute surface area of the affected area, as well as the time period.

The criterion does/does not apply

Aboslute surface →	lokaal	regional (30 - 300 km2)	provincial	national (> 3000 km2)
Time period ↓				
Less than one year				
More than one year, less than 10 years				
More than 10 years				

Impact criterion 5.1 Disruption of everyday life

Criterion 5.1 concerns the vital interest of social and political stability:

"The peaceful continuation of a social climate in which individuals can function peacefully and groups of people can live together well within the achievements of the Dutch democratic system and shared values thereby."

Criterion 5.1 reads: "The infringement of the liberty to move about freely and to gather in public places and spaces, whereby participation in the normal social existence is hindered."

Participation in normal social existence is hindered in the context of this criterion by external factors, such as the closure of shops or services, imposition of a curfew, blockades, etc. If impairment to personal health (physical, psychological) hinders participation in normal social existence, then this falls under criterion 2.2.

Examples of causes of threat include: impairment of the vital infrastructure, such as power cuts of gas or electricity, mass fatalities or drop-out rate amongst the population due to a pandemic, occupation, large-scale disturbances, The indicators cited are valued on the basis of:

- numbers affected;
- time period;
- · number of indicators applicable.

dyke break, terrorist attack, large-scale strike amongst civil servants, in the education system or public transport. The following six indicators are used for measuring the impact:

- · no education can be followed;
- · not being able to go to work;
- · not being able to use the social provisions of sport, culture or healthcare;
- · reduced accessibility due to blockades on highways and cancellation of public transport services;
- · reduced virtual/social accessibility due to loss of the internet (e-mail correspondence), telecommunication (TV, telephone, etc.);
- · not being able to make necessary purchases due to shop closures.

number affected \rightarrow time period \downarrow	< 10.000 affected	< 100.000 affected	< 1 million affected	> 1 million affected
1-2 days				
3 days to 1 week				
1 week to 1 month				
1 month or longer				

Impact criterion 5.2 Violation of the democratic system

Criterion 5.2 concerns the vital interest of social and political stability:

"The peaceful continuation of a social climate in which individuals can function peacefully and groups of people can live together well within the achievements of the Dutch democratic system and shared values thereby."

Criterion 5.2 reads: "The impairment in the functioning of the institutions of the Dutch democratic system and/or the infringement of rights and liberties and other core values bound to the Dutch democratic system as set out in the Constitution."

This criterion concerns the disruption to the functioning of the essence (meaning the democratic rights and liberties), the character and the functioning (institutional processes and policy, management and implementation organisations) of the democratic system of the Netherlands. Examples of causes of threat include:

Attack on the Binnenhof (Dutch Parliament), occupation by a foreign power, a coup, undermining of the independence of the legal system, conflict of interests amongst public officials, public hate and intimidation campaigns, through which people or organisations are discriminated against structurally, insufficient accessibility to the governmental apparatus (for example, as a consequence of flooding), threats from journalists, the creation of a parallel society within which the government's authority is denied, disruption of social cohesion through the structural discrimination of certain groups, calls for and/or other expressions of antidemocratic (extremist) activities and/or views.

Impairment is understood to mean a structural (therefore not incidental) hindrance to the functioning with the level of impact being on a national scale. 'Undermining' is also an impairment whereby the impact will not manifest itself immediately, but will only be expressed at a later stage. The following six indicators are used for measuring the

- · Impairment to the functioning of political representation. This impairment may arise:
 - · through an actual, physical hindrance of parliamentarians or local government officials from carrying out their work;
 - through intimidation, extortion, hate campaigns relating to parliamentarians or local government
 - through conflict of interests, corruption practices, etc., which impair the integrity of parliamentarians or local government officials and the decisions they make based on unequal grounds;

- · through a lack of trust by a substantial proportion of the population about the general functioning of the political representation.
- Impairment to the functioning of the government and its public servants. This impairment may arise:
 - · through an actual, physical hindrance of parliamentarians or local government officials from carrying out their work;
 - through intimidation, extortion, hate campaigns relating to parliamentarians or local government officials:
 - through conflict of interests, corruption practices, etc., which impair the integrity of parliamentarians or local government officials and the decisions they make based on unequal grounds;
 - · through a lack of trust by a substantial proportion of the population about the general functioning of the political representation.
- Impairment to the functioning of public order and the security systems. This impairment may arise:
 - · through an actual, physical hindrance of parliamentarians or local government officials from carrying out their work;
 - through intimidation, extortion, hate campaigns relating to parliamentarians or local government officials:
 - · through conflict of interests, corruption practices, etc., which impair the integrity of parliamentarians or local government officials and the decisions they make based on unequal grounds;
 - through the undermining of the government's monopoly on the use of force;

- through a lack of trust by a substantial proportion of the population in the general functioning of the government in maintaining public order and security.
- Impairment to the functioning of an independent legal system. The impairment may arise:
 - through an actual, physical hindrance to judges in practising their work;
 - through an impairment to the division of power (political pressure on judges);
 - · through intimidation, extortion, hate campaigns or serious pressure relating to the public opinion of judges;
 - through conflict of interests, corruption practices, etc., which impair the integrity of judges and the decisions they make based on unequal grounds;
 - · through a lack of trust by a substantial proportion of the population about the general functioning of the legislative authority.
- Infringement of liberties and rights as set out in the Constitution and legislation (freedom of religion, speech, association, right to vote, etc.);
 - this indicator speaks for itself. See also the definition of 'impairment' above.

This aspect does not concern the limitations covered under impact criterion C.5.1.

- Impairment to the core values that form the basis of a democratic system and a democratic society. This not only entails regulation of the relationships between the public and government in well functioning democracy (the vertical dimension of a democratic system), but also the mutual relationships between citizens (the horizontal dimension of a democratic system). Impairment may arise:
 - · through a high level of social mistrust occurring between citizens or groups of citizens;
 - through the core value of tolerance is put under pressure;
 - · through the respect for diversity and other orientations of life are put under pressure;
 - through an insufficient level of solidarity within society.

The division of classes is then based on:

- number of indicators applicable;
- the time period;
- the extent to which an indicator is impaired.

The criterion does/dos not apply

Number of indicators →	Max 1 out of 6 indicators	Max 2 out of 6 indicators	3 or more out of 6 indicators
Extent_\(\psi \)			
Limited			
Average			
Substantial			
Does the impairment only last	for a few days? Yes/No		
Does the impairment last for h			

The extent of impairment to an indicator (limited, average or substantial) is scored on the basis of an estimation of the scale of the impact. An estimation is also made of the size of the group of players who cause the impairment and the size of the group of players who are victim of the impairment; for example, is there a limited, average or substantial proportion of public officials involved in a conflict of interests? Or, for example, are the rights and liberties of a limited, average or substantial proportion of the population/population groups impaired?

In case 2 or more indicators are relevant, then the correct final gradation in table can be achieved as follows:

- The final gradation "limited" applies if the extent of the impairment of each of the relevant indicators is "limited" at most.
- The final gradation "substantial" applies if the extent of the impairment of at least one of the relevant indicato¬rs is "substantial".
- The final gradation "average" applies for the remaining cases.

Impact criterion 5.3 Social psychological impact and social unrest

Criterion 5.3 concerns the vital interest of social and political stability of the democratic system of the Netherlands:

"The peaceful continuation of a social climate in which individuals can function freely and groups of people can live together well while maintaining the achievements and shared values of the democratic system of the Netherlands."

Criterion 5.3 reads: "The reaction of citizens who are characterised by negative emotions and feelings (such as fear, anger, dissatisfaction, sadness, disappointment, panic, disgust, and resignation/apathy). This concerns the population as a whole, therefore besides those people directly affected also citizens who experience the incident or process via the media or other means. The expressions of these emotions and feelings may or may not be perceptible (i.e. audible, visible, readable)."

Expressions of negative emotions and feelings may include protests, demonstrations, disruptions to public order, vandalism, calls via the media (also partly fuelled by media attention), expressions made in social media, 'hacking' as an act of protest, Twitter or e-mail 'bombarding', and other forms of social unrest. Other types of behaviour may include attempts to escape or avoid the situation, deviant actions outside the normal pattern, taking obviously unreasonable decisions, no longer be able to operate (being struck dumb).

N.B.: This criterion includes psychological effects that may be of a temporary nature. In the event of chronic disorders (psychological traumas), then criterion 2.2 applies.

Examples of causes of threats include: terrorist attack, political assassination, abduction, hostage taking or attack on political leaders or members of the Royal Family, dominance of an undemocratic political party, a coup, explosion at a nuclear power plant, pandemic with (the possibility of) mass fatalities.

There are several indicators that lie at the basis of the negative emotions and feelings, together with their related expressions, described above. These are called "drivers" (determining indicato-rs). The choice was made to base the scoring mechanism primarily on the applicability or not or these "drivers" in principle. In addition to this, the level of perceptible expressions of social unrest as strengthening or weakening mechanism is used.

The indicators are divided up into the three categories cited below. Despite the different number of indicators per category, the categories are considered to be of equal importance. The categories partly overlap each other and will therefore commonly occur in combination.

To begin with this concerns whether an indicator can occur in principle as a result of the event(s) that are described in the scenario, at the same time or as a consequence. This does not yet involve the number of people for whom an indicator is perceptively applicable, nor the time period involved.

The three categories comprise the following indicators.

- 1. Perception of the event(s) in the scenario by the population:
 - uncertainty regarding the nature or the cause of the

this may lead to fear (the greater the uncertainty, the more afraid people become)

· uncertainty regarding the level of threat or danger and also about the possibility that someone may personally be affected by this;

this may lead to fear or panic (greater uncertainty about a person's own exposure to threat/danger leads to an increasing feeling of fear or panic)

• the level to which the event(s) in the scenario are unnatural;

this may lead to fear or anger (the more unnatural the cause, i.e. the greater the malicious influence on people, the more afraid people are for the consequences and the more angry people are at those people causing the situation)

• the extent to which specific groups or vulnerable groups, such as children, the elderly, the sick or the poor, are **dis**proportionally heavily affected.

this may lead to anger or sadness (the more specific groups or vulnerable groups are victims, the greater the feeling of injustice, which in turn leads to anger and sadness

- 2. Trust in the dealings of (governmental) bodies and/or businesses by the population:
 - · level of the blame (failure) felt by relevant businesses and (governmental) bodies by the occurrence of event(s) in the scenario or the occurrence of undesirable consequences thereby (relationship with prevention);

this can lead to anger (the greater the feeling that a failures are to blame, the more anary people become)

• the extent of the loss of trust in the actions of the government and businesses involved and other institutions (N.B. not the emergency services) concerning, on the one hand, the management of the event(s) in the scenario and, on the other hand, the provision of information about the situation and its/ their causes (relationship with preparation and initial response);

this can lead to anger as well as fear or panic (the greater the lack of trust and adequate information, the more angry the people are due to expectations of shame and disappointment and the more afraid due to loss of mental stability)

• the extent to the loss of trust in the actions of the emergency services in managing the event(s) in the scenario, for example in the case of exceeding standards in arrival times, shortage of capabilities, inadequate/incorrect treatments, etc. (relationship with preparation and initial response).

this can lead to anger as well as fear or panic (the greater the lack of trust, the more angry people are due to expectations of shame and disappointment and the greater the fear and panic due to loss of the prospect of help)

- 3. Perspective of dealings as estimated by those who are directly affected as well as the rest of the population on the occurrence of the event(s) in the scenario:
- level of uncertainty and/or inexperience with possible forms of self-reliance in the specific situation (forms of ignorance);

this can lead to fear (the greater the ignorance of ways of being able to positively influence one's own situation, the more afraid people are)

• extent of personal inability to manage one's own situation (forms of self-reliance).

this can lead to fear or panic (the less able to be self-reliant, the more afraid people are and the greater the feelings of panic will become due to the feeling of being dependent on others).

It is recorded per indicator whether that indicator is applicable or not. Not applicable means that there is no logical relationship with the event(s) in the scenario or its causes. If the indicator does apply (in principle), then there is a choice of four intensities ('level') in which the indicator can occur.

An intensity has nothing to do with the period of time of perceptible expressions of negative emotions and feelings or with a number of people for whom the indicator applies, but rather with the estimation whether the indicator, taken on average (over the population) occurs to a certain extent.

When determining the intensity per indicator, one should bear in mind that a scenario is constructed out of different events. In the case of process scenarios, these events may follow each other over an extended period of time. The (intensity of an) indicator can be determined by the scenario as a whole, but can also be determined by a specific event. The maximum intensity of the indicator at any given moment during the scenario determines the score.

The following intensities are recognised:

- 'none', i.e. that the indicators do not occur in this scenario (but could occur in principle);
- 'limited', i.e. that the indicator occurs to a limited extent:
- 'average', i.e. that the indicator is clearly visible, but does not appear very strongly;
- 'substantial', i.e. that the indicator occurs to a (very) great extent.

The division of classes is based on the number of indicator categories that are 'significant', and on a final assessment over 'gradation' that is based on the intensity of the separate indicators.

An indicator category (perception, pattern of expectations or perspective of dealings) is 'significant' if:

- at least one indicator has a 'substantial' intensity in the category, or
- the following two conditions are met concurrently:
 - at least half of the indicators score a 'limited' or 'average' intensity, and
 - there is at least one indicator with an 'average' intensity in the category.

A category that, for example, only scores 'limited' in its indicators, is not significant.

If none of the indicators applies (NA) then the whole criterion scores 'NA' (label X), if none of the indicators occurs ('none') then this criterion scores label A

	Indicator	irrelevant	t relevant and therefore applicable, whether or not it oc			r or not it occurs
	(see notes)					
		NA	none'	'limited'	'limited'	'substantial'
1 Pe	rception					
1a	ignorance					
1b	uncertainty					
1c	unnaturalness					
1d	disproportion					
Sumi	med up per intensity:					
Cate	gory 1 is significant (see notes)					yes / no
2 Pa	ttern of expectations					
2a	blame					
2b	loss of trust in government/ businesses/official bodies					
2c	loss of trust in emergency services					
Sumi	med up per intensity:					
Category 2 is significant (see notes)						yes / no
3 Pe	rspective of dealings					
3a	ignorance					
3b	no self-reliance					
Sumi	med up per intensity:					
Category 3 is significant (see notes)						yes / no
Total	number of significant categories					1/2/3
Are there indicators that score 'average' or 'substantial'?						yes / no

The final assessment of the gradation is based on the prevention of certain intensities of the separate indicators in the categories:

- 'low' if there are no relevant indicators with 'average' or 'substantial' intensity;
- 'high' if one of the following two situations occurs:
 - there is only one significant category and all the indicators in this one have a 'substantial' intensity;
 - there are two or three significant categories and each of these contains at least one indicator with a 'substantial' intensity, and 'average' intensity in the other cases.

Number of sign. cat. →	0 significant	1 significant	2 significant	3 significant
Final graduation↓	categories	category	categories	categories
Low		-	-	-
Average				
High	-			

(the dashes indicate combinations of situations that cannot occur)

Perceptible negative emotions and feelings of < 10,000 people for one week at most?				
	Yes/No			
Perceptible negative emotions and feelings of > 1,000,000 people				
(including in 2 or more large cities) for at least one week?	Yes/No			

In all cases a maximum reviewing period of 1 month per event is applied. It is increasingly difficult after this point to measure behaviour, as meant in the criterion, that is as a direct result of specific event(s) in the scenario. Nevertheless, as a result of a series of events, an increasing general unrest can build up, which continues over a longer period of time; this is then the cumulative effect of a series of events. This phenomenon should be scored in the correction.

Likelihood assessment for non-willful scenarios

General guiding principles

- In order to determine the likelihood, a division of five classes is used (classes A to E). Class A represents an incident scenario that is qualified as highly unlikely, class E represents an incident scenario that is qualified as highly likely.
- If a quantitative estimation of the likelihood is possible, then the possibility is offered for the classes A to D to use a division into three subclasses: low - middle - high, and for class E an extra subclass low, to enable the creation of a greater and more continuous outcome perspective.
- A (sub)class division should be determined for every incident scenario for:
 - the forecast value for the likelihood of the incident
 - the lower level for the likelihood of the incident (O);

- The large difference between the classes applies to
- the uncertainty of the estimate of chance in many scenarios. In only a limited number of the scenarios can use be made of reliable statistical data.
- the upper level for the likelihood of the incident (B).
- The lower level (O) and the upper level (B) represent an estimation of the uncertainty regarding the determination of the likelihood class, whether due to the likelihood not being known or due to a difference of opinion between experts.
- The likelihood is expressed as the likelihood that the scenario will occur during a time period of five years.

Division of likelihood classes

• The following division of classes applies to the estimation of the likelihood of a non-wilful scenario.

Class	% per 5 jaar		Quantitative (%)	Qualitative description of the danger
А	< 0,05	A-low A-middle A-high	< 0,01 0,01 – 0,025 0,025 – 0,05	highly unlikely
В	0,05 – 0,5	B-low B-middle B-high	0,05 – 0,1 0,1 – 0,25 0,25 – 0,5	unlikely
С	0,5 – 5	C-low C-middle C-high	0,5 – 1 1 – 2,5 2,5 – 5	likely to a certain extent
D	5 – 50	D-low D-middle D-high	5 – 10 10 – 25 25 – 50	likely
Е	50 – 100	E low E	50 – 66 66-100	highly likely

The large difference between the classes applies to the uncertainty of the estimate of chance in many scenarios. In only a limited number of the scenarios can use be made of reliable statistical data.

In many cases use will have to be made of incomplete data combined with expert opinions.

Determination of the likelihood class

In scoring the likelihood, two guiding principles are important:

- the likelihood of an incident scenario is scored for the scenario as a whole. This means: the likelihood that the defined events (incident) will take place and will result in the described results (impact).
- the described scenario is a unique chain of events (more or less simultaneous); the likelihood is not scored in relation to this unique chain, but is score for a cluster of comparably serious scenarios within the scenario theme.

In scoring the likelihood of a non-wilful scenario, the following set of steps is applied:

 making an inventory of the available data relating to information/experience in the description of scenario concerning the determination of the likelihood. If case-based reasoning is available, an inventory should also be made as to what extent the circumstances are changed in relation to the possible causes, the affected management measures, or otherwise;

- on the basis of the available data the members of the working group determine the individually the score for the likelihood in relation to forecast value (V);
- the results are evaluated in a plenary session in the working group, whereby the individual members will explain the scores (if necessary);
- 4. the individual members score in the 2nd round;
- on the basis of that result, the forecast value (V) is determined, as well as the upper limit (B) and the lower limit (O);
 - (V): most scored class
 - (B): highest scored class
 - (O): lowest scored class
- 6. a plenary evaluation is made is made to what extent the (B) and (O) are sufficiently representative for the uncertainty in relation to the estimation of the likelihood; if necessary, these values can be adjusted;
- the scores are determined including the argumentation and motivation of the choices made.

A further explanation of the steps plan and the use of expert opinions can be found here.

Examples relating to the scoring of the likelihood can be found here.

Likelihood assessment of wilful scenarios

General guiding principles

- A division of five classes (classes A to E) is used in order to determine the likelihood. Class A represents a scenario that is classed as highly unlikely, class E represents a scenario that is classed as highly likely.
- For every incident scenario the (sub)class division should be determined for:
 - the forecast value for the likelihood of the incident (V);
 - the lower level of the likelihood of the incident (O);
 - the upper level for the likelihood of the incident (B).
- The lower level (O) and the upper level (B) are an estimate for the uncertainty in relation to the determination of the likelihood class.
- The likelihood is expressed as the likelihood that the scenario will occur during a time period of five years

Division of likelihood classes

The wilful scenario assumes that the expected (terrorist) threat will be successful. For this reason the likelihood will be determined primarily by two factors:

- the likelihood that a specific threat will lead to an attack; this aspect is mainly determined by the type of threat and the capabilities and intentions of the terrorist
- the likelihood that the attack is successful; this aspect is mainly determined by the vulnerability of the expected objectives.

The following division of classes is used for the estimation of the likelihood of the wilful scenario.

Class	Qualitative description of the threat
Α	no concrete indications and the scenario is not considered to be conceivable
В	no concrete indications, but the scenario is considered to be possibly conceivable
С	no concrete indications, but the scenario is conceivable
D	the scenario is considered to be highly conceivable; there are some indications that the scenario will actually occur,
E	concrete indications that the scenario will occur;

Depending on the vulnerability of the expected objective(s), the The following division is used for determining the vulnerability class can be adjusted. If the vulnerability is estimated as being 'high': then the class will be raised by one category (e.g. C will become D). If the vulnerability is estimated to be 'low': then the class will be lowered by one category (e.g. C will become B).

Score	Description of vulnerability	
Low	A high level of resistance to the threat. Management measures are put in place.	
Average	Sufficient resistance against the threat, but with several weak points in relation to measures and/or compliance.	
High	Insufficient or no resistance against the threat. No measures are taken.	

Examples for determining the vulnerability for division of types of threat are given in the outline on page 4.

Since the likelihood is determined on the basis of a qualitative (rough) division of scale, then the chosen class will in principle be set in the middle of the class.

In order to determine the forecast value (V), a deviation can be made here if the result for the lower level (O) and upper level (B) give an asymmetrical picture. For example: Lower level class C; Forecast value class D, Upper level class D. In this case the Forecast value can move to the class D low.

Determining the likelihood class

Two basic principles are important by the scoring of the likelihood:

- the likelihood of an incident threat scenario is scored for the scenario as a whole. In other words, the likelihood that the defined threat (incident) will be carried out and result in the envisaged consequences (impact).
- the scenario described is a unique chain of (more or less simultaneous) events; the likelihood is not scored according to this unique chain, but scored instead for a cluster of comparably serious scenarios within the scenario theme.

The following steps should be followed in order when scoring the likelihood:

- 1. make an inventory of the available information (social trends, threat analysis) in the scenario description in relation to determining the likelihood.
- 2. on the basis of the available data, the members of the working group individually determine the forecast value (V) for the likelihood.
- 3. the results are evaluated in a plenary session of the working group, whereby individual members have the opportunity (if necessary) to explain the score.
- 4. the individual members score in the 2nd round.
- 5. the final forecast value (V) is determined on the basis of the result, as well as the Upper level (B) and the lower level (O).
 - (V): most scored class
 - (B): highest scored class
 - (O): lowest scored class
- 6. an evaluation is made during a plenary session as to what extent the (B) and (O) are sufficiently representative for the uncertainty in relation to the estimation of the likelihood; these values may require adjustment.
- 7. the scores are recorded as well as the supporting information and motivation for the choices made.

A further explanation of the step-by-step plan and use of expert opinions can be found here.

Examples relating to the scoring of the likelihood can be found here.

Assessment of likelihood for process scenarios

General guiding principles

- A division of five classes (classes A to E) in used in order to determine the likelihood. Class A represents a process scenario that is qualified as highly unlikely, class E represents a process scenario that is qualified as highly
- In case a quantitative estimation of the likelihood is possible, then there is the possibility for the classes A to D to use a division of three subclasses: low - middle high, and for class E an extra subclass low, in order to create thereby a greater and more continuous outcome.
- The (subclass) division should be determined in the case of every process scenario for:
 - the forecast value for the likelihood of the incident
 - the lower level for the likelihood of the incident (O);
 - the upper level for the likelihood of the incident (B).
- The lower level (O) and the upper level (B) are an estimation of the uncertainty concerning the determination of the likelihood class.
- The likelihood is determined for a continuous period of 5 years, whereby the time horizon may lie in the long term (o-5 years, 10-15 years, 20-25 years or even later). Various different time periods can also be considered, which can also be scored separately.

A process scenario may be characterised by the fact that there is the development of a trend. This development may be visible, but it may start 'in concealment' and become visible at any given moment. Process scenarios may result in incidents, but there may instead be an insidious impairment to the vital interests. Further information about process scenarios is given here.

One result of the development of a trend is that the reaction of the government (and possibly other stakeholders) to the development described forms part of the description of scenario.

Process scenarios are distinguished by danger or threat.

Division of likelihood classes and determining likelihood class

If a process scenario presents the characteristic of danger (e.g. extreme warm weather and drought or Lyme disease) then the division of likelihood classes and the method for determining the likelihood class for non-wilful scenarios is

If a process scenario primarily presents a wilful character (e.g. misuse of raw materials, scarcity in producing countries) then the division of the likelihood classes and the method for determining the likelihood class for wilful scenarios is followed.

The meaning of risk

The method is aimed at assessment and positioning of risk scenarios. Since every scenario describes a specific type of risk (danger/threat of a certain level and with certain consequences), then the method is actually aimed at the assessment of risks.

The meaning of "risk" is defined as a composition of "impact" (the total of the consequences of the scenario) and "likelihood" (a forecast concerning the occurrence of the scenario). Please note that this definition varies from the classical one-dimensional definition of "chance x consequence".

The figure given below shows that the assessment of impact and likelihood takes place separately to begin with. Once the scenarios have been assessed on both of these risk components, then they are merged in order to give a two-dimensional total picture of the different types of incident scenarios to be created.

The separate presentation of both risk components impact and likelihood is based on at least two reasons:

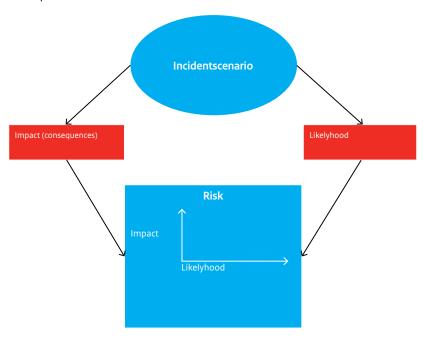


Figure: Every scenario is assessed on the two risk components

- 1. A conscious choice has been made not to follow the traditional "risk is chance times consequence" because this suggests too concrete an interpretation and also because the conversion of "risk" into just one number distracts the view of the two actual dimensions. Furthermore, the impact and likelihood are not always weighed up equally in our experience of risk, which is presumed in the formula "risk is chance times consequence".
- 2. The uncertainty in relation to the estimation of both risk components may vary. Often the likelihood of occurrence cannot be estimated on grounds of historical data because this is unavailable, or because circumstances cannot be compared, or because the scenario comprises a complex set of events. Particularly in the case of incidents caused wilfully caused incidents, a qualitative estimation of likelihood is usually made on the basis of "intelligence". It is generally not possible in most cases to quantify the consequences of an incident since we distinguish ten impact criteria, each with its own likelihood of occurrence and its own data basis.

Sensitivity

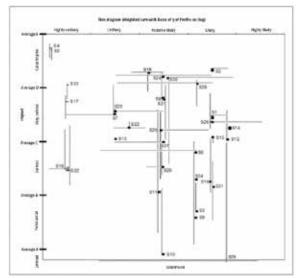
Although the National Risk Assessment methodology is based on methodological choices according to the most recent scientific insights and the forecast scores of National Risk Assessment scenarios are estimated with a certain amount of precision by experts, nevertheless these still remain choices and estimations. In order to place the influence of the choices made and the estimations of the final scores - and therefore the value of the final scores and the positioning in the risk diagram - in a broader perspective and to estimate how robust these are, the sensitivity of these final scores should be tested for small changes to the estimated National Risk Assessment scores, other relative criterion weighting, and in the quantifying of the impact labels. The following sensitivity analyses are carried out on a standard basis in the National Risk Assessment:

- Calculation of the total scores according to the upper and lower level estimations: Since the scenario groups provide an estimate of the lower level, forecast value and upper level for both the impact as well as the likelihood assessments, these lower level and particularly the upper level values can be used to test whether the total scores and the positioning of the scenarios changes significantly in the risk diagram. The figure below shows the way in which these lower and upper levels can be made visible.
- Application of different weighting profiles: The standard practice is to award an equal weighting to all ten impact criteria in order to calculate the total impact. Since it is possible, however, to attach different levels of importance to the ten National Risk Assessment criteria, four weighting profiles with varying weights are calculated into the ten criteria. The weighting profiles were originally intended to give an impression of the diversity of values in Dutch society. Research carried out by the Research and Documentation Centre (WODC) was unable to confirm the validity of this, however. Calculation on the basis of different weighting profiles can still draw attention to scenarios that are of greater or lesser importance due to certain value profiles than in the original calculation.
- Equal weighting of the vital interests: Since the choice of equal relative weighting for the ten criteria is a methodological choice, the influence of the award of equal weights to the vital interests instead of the ten criteria can be calculated into the National Risk Assessment's sensitivity analyses. The calculation on the basis of equal weighting of the vital interests draws the attention to scenarios that, according to the equal weights of the vital interests, are of greater or lesser importance than equal weights awarded to the ten criteria.

• Different quantification of the ordinal impact labels: Since the choice of quantification of the A-E impact labels is a methodological choice on the basis of an exponential value function with a basis of 3, the influence of the quantification of these impact labels is calculated into the National Risk Assessment's sensitivity analyses on the basis of a linear value function and an exponential value function with a basis of 10. In concrete terms, a linear value function means that 1 E score counts for the same as 5 A scores, 1 D score counts for the same as 4 A scores, etc.; therefore the differences between the consecutive labels is the same. A basis of 3 means that 1 E score counts for the same as 3 D scores, 1 D score counts for the same as 3 C scores, etc., and a basis of 10 that 1 E score counts for the same as 10 D scores, 1 D score counts for the same as 10 C scores, etc. The calculation in the National Risk Assessment's sensitivity analyses based on a basis of 10 directs the attention particularly towards scenarios with catastrophic impact scores, while the linear value function directs the attention particularly towards scenarios that score relatively heavily in many criteria.

The final objective of the sensitivity analyses is to investigate whether the positioning of the scenarios in the risk diagram changes significantly by slightly different assumptions, or the selection of scenarios is robust, and whether it is therefore necessary to give (more) attention to certain scenarios in the capability analysis.

Risk diagram with levels of uncertainty



Risk diagram

Presentation of the outcome of the risk assessment in the risk diagram is explained below. This is followed by an explanation as to how the risk diagram can be read and used. Finally, attention is given to the analyses in order to gain an impression of how robust the positioning of the scenarios is in the risk diagram.

The report of the risk assessment shows what the outcome is of the National Risk Assessment and includes the following sections:

- summary of the impact and likelihood scores of scenarios with explanations;
- a risk diagram with explanation (see figure 7-1);
- an number of sensitivity analyses;
- an assessment of how robust the results are.

The risk diagram

The standard risk diagram as shown below is based on:

- equal weights for all ten impact criteria;
- quantification of the ordinal labels X,A,B,C,D,E using the exponential value function with a basis of 3 (1 x E = $3 \times D$ $= 9 \times C = 27 \times B = 81 \times A$).

The National Risk Assessment provides a forecast final score of the aggregate impact, a lower level score of the aggregate impact, and an upper level score of the aggregate impact for each of the scenarios, each of these with their relevant likelihood scores.

The forecast scores for the aggregate impact with relevant likelihood scores of the scenarios is shown graphically in the logarithm risk diagram. The aggregate impact is shown on the vertical axis. The maximum value of the axis is the same as a (fictional) scenario that scores E in all the criteria.

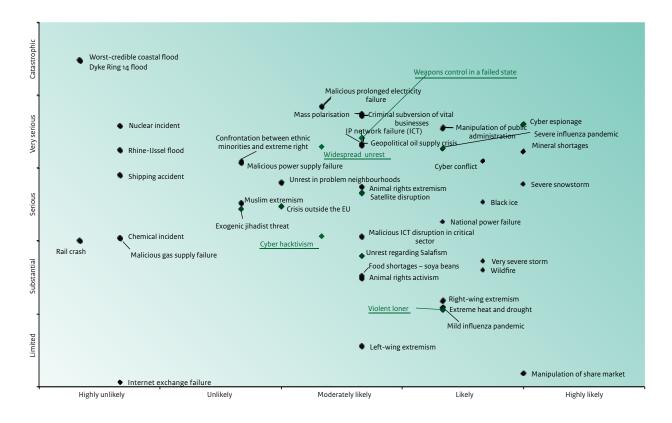


Figure 7.1 Risk diagram with logarithmic axes

How the risk diagram can be read and used

In which way can the risk diagram be read?

Since both axes of the risk diagram have logarithmic scales, the equal distances between scenarios is not equal (unless the scenarios also have equal scores): in fact, equal distances increase exponentially when taken from the origins of the graph. The difference between 'catastrophic' and 'extremely serious' is far greater than the difference between 'substantial' and 'limited'. Although the distances between scenarios does not corroborate our everyday understanding of distance, the relationships do match, and the class labels match our everyday understanding. It is therefore better when reading such risk diagrams to focus on the qualification of the risks according to the classes and the class labels than the exact positioning in the diagram and the distance in relation to other risks.

What does the place in the risk diagram say about a scenario?

The score of a scenario in the risk diagram is based on the specifically detailed scenario, bearing in mind similar scenarios. The choices that are made when composing a scenario determine the final scores. Two extremes of a scenario type are: a scenario with a high likelihood of occurrence, but (because of that fact) a small impact and a scenario with a large impact, but (because of that fact) a small chance of occurrence. All scenarios in between are also possible. The most representative scenario lies somewhere in between, where the seriousness and the likelihood of the scenario are in balance.8 Consideration of a specific scenario is therefore necessary in order to be able to determine where other scenarios of the same type can be placed in the total spread of possible scores of the relevant type of scenario.

In which way can the risk diagram be used for prioritising for the benefit of the capability analysis?

The way in which the risk diagram can be used for prioritising for the benefit of the capability analysis depends on a number of factors (aspects). The most important aspects with regard to the information from the risk diagram are:

1. Risk as function of impact and likelihood

On the basis of the classic concept of risk, risk comprises impact and likelihood whereby both are equally important. Following this classic concept of risk, priority should be given to scenarios that are characterised in high level classes for both impact and likelihood.

2. The possible seriousness of the aggregate impact

However, the selection of scenarios in the National Risk Assessment is not randomly made: only scenarios that pose a threat to the national safety and security are relevant from the perspective of the National Risk Assessment. A partial collection is formed by the 'real' catastrophic risks: for example, enormous floods or a nuclear disaster. This type of scenarios is characterised by a (very) small likelihood and a very high impact. From this perspective the risk is mainly formed by the impact. Therefore priority should be given from this perspective to scenarios that are characterised by a catastrophic or very highly aggregated impact.

3. The possibility of risk reduction

The question as to which scenarios should be given priority depends not only on the risk assessment, but also on the question for which scenarios can profits be gained in a relatively simple way, on a large scale, and with a strong likelihood through the deployment of additional capabilities. In many cases this mainly involves the risks with a high level of likelihood. From this perspective priority should therefore be given to scenarios that are characterised by a high level of likelihood.

⁸ The highest score i.e. the largest distance above the line between the two extremes.

4. All the previous perspectives together and more

Priority can also be given on the basis of the three perspectives together: from this perspective the risks with a high impact and/or high likelihood should be taken into consideration in the capability analysis.

This risk diagram is only one of the factors, however, in prioritising the risks for the benefit of the capability analysis. Other factors that can be taken into consideration include:

- the current reality and expected developments;
- political motives;
- the possibility of relatively simple improvement in the risk image through the deployment of additional capabilities;
- the grade of uncertainty of risks;
- the outcome of the analyses into uncertainty and robustness.

Process scenarios

Basic principles

The assessment of scenarios described as incidents has the disadvantage that insidious developments or those led by trend ('processes'), which could lead to a threat precisely in the long term, remain underexposed. If such developments should lead to choices in the short to middle term in relation to possible capabilities to be deployed, it is not acceptable for this type of scenarios to remain underexposed. The deployment of preventive capabilities in particular, in order to influence the underlying developments, can give rise to urgency.

Scenarios with insidious/trend-led processes earn a place in the National Risk Assessment methodology. Three basic principles are used hereby:

- 1. The identified insidious/trend-led processes are recorded in a broadly based scenario line whereby the most important 'drivers' and uncertainties are cited and probably also, in some cases, the influence variables and their mutual connections. Variations can be developed from such a broadly based scenario line, which cover the range between a process with 'minimal' impact and a process with 'maximum' ("worst credible") impact. The long-term scenario from 2009-2010 for mineral shortages is a good example of such a description of scenario.
- 2. Since insidious/trend-led processes mainly have long development lines, in practise it may be that policy measures may be taken "along the way" in order to change the course of the undesirable development. Scenarios about such processes can therefore also include a description of (the effects of) policy measures. This means that policy is then regarded as an influence variable in a process scenario, with its own associated uncertainties, for example about the level of intervention and affect on the normal course of events, or about the level of success of the policy. It is quite possible that variations of a scenario can also differ from each other in this respect.
- 3. The analysis of the insidious/trend-led processes provides a scenario that with the help of the same impact - criteria as for the incident scenarios is assessed, and for which on the basis of the same uniform label valuation system (A to E) for impact and likelihood the position in the risk diagram is determined. This is important for the intended mutual comparability and the prioritising based on that, which then forms the basis for the choice of capabilities.

Click here for a more detailed characterisation of insidious/trend-led processes.

Principle for the assessment of insidious/trend-led processes

The assessment of insidious/trend-led processes is based on the series of steps given below:

- 1. The scenario working group puts together a first general description of the scenario line for an identified insidious/trend-led process on the basis of an initial exploration of the scenario theme.
- 2. On the basis of the first general scenario line as described, then the drivers or influence variables are determined for every impact criterion that could have consequences for the relevant impact criterion. The relationship between influence variables and their associated class labels (A to E). More than one type of influence variable can be determined for any given impact criterion.
- 3. Once all the impact criteria have been scored, then the 'choice process' is carried out: the influence variables are now filled in. If it is important to choose different values for influence variables, then this can result in multiple scenario variations, which provide not only a more detailed and coherent description of the insidious/ trend-led developments, but which are also internally consistent. Some of the previously determined influence variables are given a logical place within the broad entirety of the detailed scenario line in every scenario variation.
- 4. The final class label is determined for the individual impact criteria for every scenario variation (on the basis of the influence variables actually included in the scenario, as well as the actual circumstances caused thereby) and then the total impact score is set.
- 5. Then the likelihood is determined for every scenario variation, depending on the time period of five years in which the insidious/trend-led process is being considered.

The use of system dynamic modelling in steps 2 and 3. If the influence factors and 'drivers' described, as well as their effects, are characterised by a high level of uncertainty, complexity and mutual influences, then the development of a system dynamic model, in which the influence factors and the mutual relationships are described and are quantitavely calculated in, is a possible solution for arriving at relevant scenario variations.

The conclusion to follow this alternative approach should be reached during the working tasks as described in 3, but possibly already during step 2. In that case the process will have to be repeated from the start of step 2, but then with the development and application of a system dynamic model as guideline.

Characterisation of insidious/trend-led processes

This concerns processes that cannot be described by a defined incident with its negative consequences, but which develop over time and the consequences of which, as time progresses, have an increasingly negative effect on the functioning of (sections of) Dutch society. The character of such a process can be identified by two groups of aspects.

In the first place, there are the identifying characteristics that:

- it continues unnoticed, driven by underlying influence factors that are not yet recognised as such, or
- it is possibly noticed, but then still continues unavoidably due to influence factors on which the relevant actors have an insufficient grip, or
- it is possibly noticed, but the necessary 'interventions' have serious negative consequences in the short term, meaning that the urgency and feasibility of the interventions are lacking, or
- it is (partly) recognised and tackled, but not yet over the full breadth of the effects and/or suchlike.

In all cases, the current impact on national safety and security is still limited, but the impact can be substantial in the long term and vital interests in the Netherlands can be damaged.

The process can become visible sooner or later due to:

- an incident (a sudden escalation), and/or
- a very clear transgression of a standard or threshold value or acceptance limit, and/or
- media or (academic) institutions, etc. give (large-scale) attention to the situation, whereby relevant actors are forced to take measures.

N.B.: This may lead to a choice arising during the scenario development whether to handle the phenomenon under consideration still as an 'incident scenario' or as a 'process scenario', as described in this document.

Moreover, an insidious/trend-led process is characterised

- the fact that the process is not only to be seen in the Netherlands, but also manifests itself internationally;
- the consequences being strategic in nature, in the sense it concerns the fundamental changes to existing (social) structures, organisations, institutions, social status quo,
- the fact that complex relationships exist between the influence factors and high levels of uncertainty about the actual scenario development over the course of

Steps in a process scenario

The following gives a more detailed description of the step

This is supported and further explained using a scenario that has been rudimentarily worked out of 'Development of Lyme disease'.

Step 1: Setting the scenario line

The scenario working group compiles a first description of the scenario line for an identified insidious/trend-led process. On the basis of the first exploration of the scenario theme, a description is given of:

- the nature of the theme and the potential social (and geographical) spread of influence,
- a general process line with possible alternatives,
- potential influence factors that could determine relevant developments,
- uncertainties surrounding factors and developments,
- · relevant factual information.

Setting the scenario line is described in greater detail using a scenario that has been rudimentarily worked out of 'Development of Lyme disease'.

Scenario line 'Lyme disease'.

Lyme disease is caused by bites from ticks that are infected with the Borrelia bacteria. These bites occur in (nature) areas with high or low plant growth, as well as in inner-city parks. Ticks are becoming infected in (highly) increasing amounts, as well as people being bitten by infected ticks. Not only in the Netherlands, but throughout western Europe and elsewhere in the world. There are no satisfactory means for diagnosis unless a characteristic red mark is noticed (erythema migrans or migrating redness). The number of infections on the basis of diagnosis of this red mark has increased over the last 15 years from 6,500 cases in 1994 to 22,000 in 2009. The treatment is also insufficiently effective. In some countries, such as Austria, there is a general vaccination programme. The disease often goes unnoticed in the first place, but only diagnosed as such at a (far) advanced stage. The consequences for health can be (very) serious, resulting in not only personal suffering but also a burden on the healthcare system and its associated costs.

Thus far, this concerns an insidious/trend-led process involving a highly increasing health risk of which the broader public is not sufficiently aware, and that the disease is not sufficiently under control in medical terms (and also in the areas of prevention and combat). Because of the uncertainties, the developments involved around Lyme disease are difficult to predict.

The scenario might describe a fast through to explosive increase in infected ticks and therefore infected people, with a variation of inadequate through to adequate preventive measures deployed by the government. A variation in the development of adequate medical knowledge can also form part of the scenario, as well as (the success of) the possibilities for improvement in the awareness and (preventive) self-reliance or attentiveness on the part of the general public. Development of the variations cited will lead to scenario variations.

See Appendix C for supplementary information about Lyme disease

Step 2: Scoring individual impact criteria

In principle, the same impact criteria are used for the process scenarios, including the indicators and class labels, as for the incident scenarios. Because of the more general description of the (process) scenario line, the assessment is more exploratory by nature and encompasses three partial steps per impact criterion:

- identification on the basis of the process line, influence factors and other fixed information described - of the types of circumstances (one or more) that could give reason for a certain level of impact and the intensities (nature, expanse) of the circumstances per type;
- composition per identified circumstance the values considered possible thereby of the criterion indicators;
- determination the label spread (impact classes A to E) for every identified circumstance that is considered possible on the basis of the indicator values described.

The example of Lyme disease is worked out in detail below for two impact criteria. For the first impact criterion there is only one type of circumstance identified; for the second criterion there is none99.

⁹ For this and the following tables, which have been compiled according to the example of Lyme disease, should be included in the formal National Risk Assessment guide to general tables (neutral details and/or definition of table framework).

Impact criterion	Territorial security - Encroachment on the territory of the Netherlands (1.1)
Type of circumstance	Area closures: It is conceivable over the course of time that cases of the disease increase to such an extent that consideration may be given to temporarily close off areas which have a high 'tick density'; this measure could apply nationally or locally (because of a local epidemic); the closure would concern wooded areas, with the duration varying between a number of days (if combating the ticks is possible) and a whole (summer) season.
Label spread	Indicator values
A	local closure for up to one month
В	local closure for summer season; up to one month nationally
С	national closure (>100 km2) for the summer season

Impact criterion	Territorial security - Infringement of the international position of the Netherlands (1.2)
Type of circumstance	None: There is no circumstance identified for this scenario that gives cause for the infringement of the international position of the Netherlands
Label spread	Indicator values
0	-

The result can be summarised as an overview in table format, such as is worked out concisely for Lyme disease in Appendix D. In this Appendix D there are two types of circumstances identified for a few other impact criteria, each with a summary of the possible details and associated indicator values and class labels.

A summary of the relevant types of circumstances is useful for the following step and is worked out below for the example of Lyme disease.

	Circumstance Impact criterion	Diagnosis / Symptoms	Closure of areas	Combating tick plague	Government approach
1.1	territorial security		Χ		
1.2	international position				
2.1	fatalities	Х			
2.2	chronically ill	Х			
2.3	physical suffering				
3.1	costs	X	Х		
4.1	flora and fauna			Χ	
5.1	everyday life		Χ		
5.2	democracy				
5.3	psycho-social				Χ

Example: no diagnosis of Lyme disease on the appearance of the 'red mark' (erythema migrans) results in the number of cases of the disease is estimated to be twice as high and consequently means a doubling in the number of 'fatalities' and 'chronically ill', but also leads to a doubling of the estimated costs for healthcare.

On the basis of the analysis carried out in this step it appears that the description of the impact criteria (and indicators) requires adjustment in a few parts. See Appendix E concerning this.

Step 3: Determining the scenario variations

A summary is achieved per impact criterion in the previous step of the number of possible combination of circumstances with a class label associated for every possibility and the indicator (values) that give the connection between circumstances and label value. On the basis of the insight gained and the information that has already been determined, a maximum of three scenario variations will need to be described, which must comply with the demands set out below.

- The scenario variations cover a spread of the minimum to the maximum impact. One of the variations is a so-called "forecast" scenario variation. The mini¬mum and maximum scenario variations are selected on the basis of the impact, whilst the forecast scenario variation is selected on the basis of likelihood.
- The scenario variations must be internally consistent; i.e. there can be no contradictory circumstances existing within the variation, and account should be taken of the dependencies between the different circumstances and label choices. The risk of contradiction is present because circumstances that are influential are searched for per impact criterion; it is therefore perfectly conceivable that circumstances are identified that in combination are conflicting and mutually exclude each other. It is just as conceivable that the same circumstance has an influence on multiple impact crite-ria. The choice for a label value for impact criterion A therefore helps to determine (or directly determines) the label choice for impact criterion B.

Types of circumstances: ↓ is /is not dependent on conflicting with →	Diagnosis/Symptoms	Closure of areas	Combating tick plague	Government approach
Diagnosis/ Symptoms			А	
Closure of areas			А	А
Combating tick plague	А			А
Government approach	Α		Α	

The following partial steps must be followed:

3.1 compiling a confrontation table in which all types of circumstances identified in step 2 are set out alongside each other; the following table is compiled on the basis of the example of Lyme disease.

It can be deduced from the system that no circumstances have been identified for the chosen scenario theme here. which would lead to mutual exclusion. There are circumstances, however, that influence various different impact criteria (see the relevant table in step 2) and of which the label values are therefore mutually dependent (A).

3.2 combination of specifically chosen circumstances on the basis of the tables in step 2 (circumstances - indicator values - label spread) and step 3.1 (confrontation table).

The minimum variation is achieved by choosing the minimum value considered possible per type of circumstance for every impact criterion for which that circumstance is relevant, taking into account the elements that are dependent on the situation and the mutual exclusions. The basic principle of the maximum variation is choosing the maximum value considered possible, and the forecast variation chooses per circumstance the value that is considered most realistic and/or likely (distinguished, if necessary, by the time period under consideration of 5-15-25 years). It is conceivable that the minimum or maximum variation coincides with the forecast variation.

The results of these partial steps are clarified below for the Lyme disease scenario.

Minimum scenario: the number of cases of the disease increases by 2000 annually up to 2025, then stabilises on the basis of improved diagnosis and combating of the disease (inoculation of risk groups); the government and healthcare sector improve and intensify the counselling, whereby the closure of (particularly wooded) areas is unnecessary. Maximum scenario: the diagnosis and combating of the disease does not improve and the number of cases of the disease increases exponentially (2015: 3000 per year; 2020: 4000 per year; 2025: 6000 per year) resulting in acutely increasing costs of healthcare due to the chronically ill; the government reacts too late and too drastically on the basis of incidents (closure of wooded areas for a summer season, combating tick plague) which leads to serious unrest amongst the public and loss of income for the recreation sector.

Forecast scenario: = minimum scenario

Step 4: Determining the class label and total impact

The total impact score should be determined for each of the separately distinguished scenario variations. In step 3 it is determined per impact criterion which circumstances with associated class label are included in the variation. This means that the label value is known for all the impact criteria per scenario variation. With the help of these label values, the usual MCA aggregate can then be carried out for the incident scenarios

(a balanced sum over the criteria of the quantified forecast label values).

This results in a total forecast impact score, lower and upper levels for every scenario variation.

The label score is given below for the minimum scenario variation for the theme 'Lyme disease'. A summary of the considerations is given in the explanation in Appendix D.

		Class label	Explanation
1.1	territorial security	Α	areas should be closed off, but this measure is not deployed
1.2	international position	0	NA
2.1	fatalities	Α	there will be early fatalities, max. several dozens of early fatalities over a period of 5 years
2.2	chronically ill	E	increase in the number of chronically ill amounts to 100 per year (5% of cases of disease); therefore 500 over 5 years; in concrete numbers, more than 10000 chronically ill in 2015
2.3	physical suffering	0	NA
3.1	Costs and impairment to the economy	В-С	almost only concerns the costs of healthcare: 40 to 50 thousand cases of the disease annually, of which 5% are chronic; increase in the costs over a period of 5 years is estimated to cost 10 million euros, total costs amount to an estimated 150 million euros annually (750 million over the 5 year period)
4.1	flora and fauna	A	no combating of the ticks is carried out
5.1	everyday life	Α	since no areas are closed off, the influence on everyday life is nil
5.2	democracy	0	NA
5.3	psycho-social	А	government reacts adequately in providing information

Step 5: Determining the likelihood

Determination of the likelihood of every scenario variation is carried out in a similar way to that for the incident scenarios. See the text under "Guide for the assessment of likelihood in process scenarios" for further

The likelihood must be established for three periods (o-5 years, 10-15 years, 20-25 years) with lower and upper levels where relevant.

The minimum scenario as formulated for Lyme disease corresponds with the forecast scenario for the periods up to 2020-2025; the likelihood class for this scenario is estimated to be class D.

Step 6: Visualisation in the risk diagram

This happens in the same way as for the incident scenarios. The developed scenario variations are each positioned separately in the risk diagram.

An additional aspect concerns the time period(s) to which the scenario relates. A summary of the final impact and likelihood scores per time period and per scenario variation is desirable. The visualisation of this can either happen in three separate risk diagrams, one for each time period, or in a diagram. In case of the latter there are three positions per variation, namely one for each time period. For the sake of insight, these references can be connected with each other in order to indicate any increase or decrease in the risk.

One important aspect concerns the sensitivity analysis, or at least the explicitly indication of bands of uncertainty in the risk diagram. However, this is not fundamentally different to the uncertainty analysis in the case of incident scenarios.

Steps in the capability analysis

Preparations for the capability analysis

A. Form a working group with experts who have knowledge of the possible capabilities involved in the given scenario.

Items for consideration:

- The composition of this working group may comprise different experts to those in the Network of Analysts who wrote the scenario or carried out the risk assessment. After all, we are in fact looking for capabilities to be increased.
- Take care that all the interests and aspects associated with the scenario are represented in the working group. As many arguments as possible must be put forward for discussion that are either for or against the increase of a certain capability.
- When compiling the working group, look for experts at ministries, decentralised government departments, knowledge institutes (including planning offices and universities) and the business community.
- The working group should be chaired by a representative of the department most involved. Secretarial support for the working group will be provided by the Ministry of Security and Justice.
- See Appendix A Capability analysis for items for consideration and tips when using expert opinions in the National Safety and Security Strategy.
- Enter in Appendix B Capability analysis which experts are involved with which area of expertise and in which part of the capability analysis.
- A facilitator supports the working group in the correct use of the list of capabilities.
- B. Determine the layout of the process that will lead to the capability analysis.

Items for consideration:

- Consciously choose a suitable time plan for carrying out the analysis. Can the analysis be carried out during a two-day workshop, or is it better to meet up with each other once a fortnight over a period of two months? How much can you ask of the experts? Does the attention wane over an extended course?
- Choose a working form that delivers the greatest yield.
- · Determine whether representatives comment as individual experts or as representatives on behalf of an organisation.

- In case of the latter, then organisational interests could play a role in the background and, in case of the former, then personal hobbyhorses or lack of support base could play a role.
- Agree within the group whether there should be a consensus or whether the work can be carried out with explicitly made deviant standpoints. The latter is preferred for course as a whole, given the possible conflicts of interest.
- Make agreements about confidentiality, including the introduction of a confidentiality agreement if necessary. It must at least be agreed that the information exchanged during the capability analysis should remain confidential and that no citations or publications will be made from the documents. It is possible to classify documents.

The steps to be followed

The capability analysis comprises three steps. A broad inventory is made during the first step of which capabilities could possibly be increased (inventory). The greatest care should be taken in not allowing any capabilities to remain unseen. A first selection is then made during the second step from the longlist of capabilities that have a good chance of being increased (prioritising). The most important objective is to gain focus so that work can be carried out further with the real priorities. During the third step a plan is made of what needs to happen - and by whom this should be done - in order to increase the prioritised capabilities (further details). This is in order that a positive decision will also actually lead to implementation of the proposed increase.

C. Find out which capabilities are relevant to the scenario (inventory) and firstly compile a longlist of capabilities that possibly need to be increased.

Items for consideration:

- I. At the start of the process, explain to the experts in the working group what the objective is of the capability analysis, what the place is besides the detailed scenario and the risk assessment and which steps will be followed;
- II. Ask the project leader in question and/or the working group coordinator from the Network of Analysts to present the scenario and the scoring during the first meeting and to answer any questions that arise for clarification:
- III. Make an inventory (outlines) of which capabilities that could possibly be increased could/should be included in a longlist. You can use the list of capabilities hereby in the Appendix E Capability analysis.

- i. Consider which capabilities play a role in the scenario in relation to the scenario itself and the scoring. Then decide which capabilities it might be relevant to increase. This step can be taken be taken by a limited group beforehand. If this step is taken at an early stage by the coordinator and the secretary of the capabilities working group, then the ensuing result can help in choosing the experts to be engaged. See Appendix F Capability analysis for a blank format.
- ii. Use the outcome of the risk assessment. Look at which of the ten impact criteria score a D or an E in the scenarios and determine the cause of these high scores. Decide which capabilities could reduce the score of those criteria to an important extent, if they were increased.
- iii. Review the (high) likelihood score in a similar way. Decide which capabilities could reduce the score of those criteria to an important extent, if they were increased.
- iv. Make a distinction thereby between the capabilities: 1. general capabilities
 - 2. before the crisis (proaction/prevention and protection of vital systems);
 - 3. during the crisis (combating (including the associated preparations));
 - 4. after the crisis (recovery and aftercare).
- **D.** Make a **list of priorities** of around five capabilities in total to be increased.

Items for consideration:

- 1. Make a strict choice of the most important capabilities that can be increased from the inventory. The rule of thumb is a list of in total not more than five capabilities that really do need increasing:
 - i. Look at which capabilities whereby the difference between the current situation ('ist') and the desired situation ('soll') is large;
 - ii. Look at which capabilities could be increased quickly (quick wins);
 - iii. Look at which capabilities lead to sustainable increase in safety and security;
 - iv. Look at which capabilities deliver well against low costs (costs and benefits analysis).

During this step it can help to find out whether and, if so, to what extent increasing the capability (or combination of capabilities) in question will lead to a significant shift of the scenario in the risk diagram. This can be achieved by adjusting certain scores (effect of any measures to be taken for increasing capabilities) and to recalculate this for the diagram.

- 2. In whose hands do the capabilities to be increased lie: central government, a specific ministry, the business community, decentralised government? Indicate here which parties are required and the estimated costs. Also give an indication as to what extent these parties are actually willing to make the effort to increase these capabilities. See Appendix G for a blank format.
- 3. Make an assessment on the basis of the political or social reality whether there are capabilities whereby increasing these is urgent for political reasons.
- **E.** Record the **substantiated prioritisation** of capabilities to be increased in one document

Items for consideration:

- I. Indicate which capabilities on grounds of what arguments (scenario analysis, impact score or likelihood) were placed on the longlist.10
- II. Indicate the top five capabilities. On grounds of what arguments (difference between current and desired situation, quick wins, sustainability, costs-benefits) the choice was made for these capabilities? Were there any remaining dilemmas / discussion points in relation to the choice of these five capabilities?
- III. This will finally lead to a limited number of recommendations (for the capabilities to be increased) for the Cabinet. For the benefit of the integral consideration of all the capabilities put forward by the various different working groups, it is important that every working group indicates by the chosen capabilities:
 - i. which scenario(s) form(s) the basis of the cited capabilities and what place (in terms of impact and likelihood) the scenario(s) has/have in the National Risk Assessment;
 - ii. to what extent the 'capabilities owner' is willing to make the effort to increase the capability;
 - iii. whether there is political or social urgency to increase the capability;
 - iv. what the expected improvement is (effects), as far as possible in terms of reduction of impact or reduction of likelihood;
 - v. what the required effort involves (including in terms of the general level of financing (thousands, tens of thousands or millions of euros), time needed (when can something be ready), deployment of personnel).

¹⁰ You should bear in mind that, for the agenda-setting of the capabilities to be increased by the complete set of scenarios, it is important that the longlist of capabilities to be increased is visible. It is quite possible that capabilities, which are involved in different scenarios may lead to a generic capability to be increased.

After the capability analysis

The different theme groups deliver the various different capability analyses. From those separate capability analyses recommendations are made in the findings report to the Cabinet as to which capabilities should be increased in the interests of the national safety and security. Taking all the scenarios into consideration, proposals are made by the Head Group of the IWNV on the basis of elements such as the risk diagram, political attention, quick wins, costs and benefits analysis.

Attention is given in de findings report to specific capabilities, which are necessary for one type of risk. An indication is also given as to which capabilities need increasing that are useful to multiple types of risk. The longlists of capabilities to be increased of the different scenarios are important in finding out these generic capabilities, which may not pay off of one scenario alone, but are effective if they contribute to the reduction of different types of risk.

The Cabinet decides which recommendations it takes up on the basis of the findings report.

Short-term survey

If a situation presents itself, which may have consequences for the national safety and security, then an analysis can be made of the situation and the possible lines of development. Such an analysis is carried out according to the following steps.

Description of scenario

- 1. What is the situation?
- 2. Which elements could have an impact on the national safety and security?
- 3. What are the tipping points of the different element; from which point do these elements have an influence on the national safety and security? Once passed a tipping point, elements can become a trigger, from which consequences arise for the national safety and security whilst that is not currently the case.

Risk assessment

4. What can the impact be on the national safety and security of the chosen elements both at the moment and when the tipping points have been passed?

Capability analysis

- 5. Which measures can be taken to limit the impact on the national safety and security (preventive and responsive measures)?
- 6. What should happen in order keep in view those elements that may possibly develop to such an extent that the tipping points will be passed?
- 7. What measures should be taken now and what can be left until a later stage?

4 Formats and backgroundinformation

Confidentiality agreement

The undersigned
, born on
resident of (street)
in (town)and employed by
and employed by
function of
declares: that <he she=""> has explicitly been made aware of Section 2:5 of the General Administrative Law Act [Algemene wet bestuursrecht] and Articles 98, 98a, 98b, 98c, 272 and 273 of the Netherlands Criminal Code, the texts of which are</he>
enclosed as Appendix 2; that <he she=""> will refrain from any action that could possibly lead to the disclosure of any information of which, due to <his her=""> participation in the National Safety and Security Strategy, <he she=""> has knowledge and of which <he she=""> might reasonably suspect that this information should remain confidential; that <he she=""> endorses the Protocol for sharing information, included with this document as Appendix 1, and will act according to this protocol. that <he she=""> knows that, if <he she=""> acts in violation with the obligation to confidentiality, <he she=""> can be prosecuted for that; that <he she=""> knows that <he she=""> is obliged to report every violation of the confidentiality agreement without delay to <his her=""> immediate superior.</his></he></he></he></he></he></he></he></he></his></he>
Town and date
Signature

Appendix 1 Protocol for sharing information

Having participants sign a confidentiality agreement can help to safeguard the confidentiality of shared information during the various different phases of the National Safety and Security Strategy. This confidential setting helps to maximise the exchange of information between the participants, which benefits the quality of the results.

Open interaction and exchange of information are central objectives during the meetings. In order to guarantee confidentiality, the following rules should be used as a guideline.

Sensitive information should be shared verbally during the meetings. Participants assign one of the four confidentiality codes to the information provided by them, according to their wishes as to how the other participants should treat this information.

The four confidentiality codes are:

Red: Confidential information exclusively for the use of the participants. The information is shared verbally. Participants may not share the information outside the meetings.

Yellow: Limited confidentiality. Information for the use of participants and for people within their organisation who need the information in order to implement measures. Exclusively on the basis of "need to know." This information then falls under the category "red" for those people with whom the information is shared, unless the original provider of the information (the source of the information) has been consulted.

Green: Information that can be shared with others, but which cannot be published or placed on the internet.

White: Information intended for unlimited publication. Every participant is permitted to make this information public.

If preferred, information with a red or yellow code can be made known anonymously or via the chairperson of the meeting.

Red information will **not** be recorded in the minutes of the meeting. However, the other information can be recorded in the minutes. Two versions of the minutes will be compiled: one version that must be treated confidentially, which can be shared further to a very limited extent (after permission from the parties involved in relation to the information provided by them) and another version that can be shared further, but with a certain level of care. The concept versions of both sets of minutes will be put before the participants of the meeting for their approval.

On the basis of the outcome of the meetings, a total report can be compiled, in which the most important conclusions are set out at a more aggregate level. If necessary, this can also be carried out using a confidential part and a part to be shared more broadly, whereby the concepts will be put before the participants of the meetings.

The participant him/herself is responsible for assigning the confidentiality code to the information offered. If no confidentiality code is assigned, the information will be considered to be 'yellow' and the source 'red'. It is the responsibility of each of the representatives personally to respect the assigned confidentiality codes. In case of doubt as to whether information may or may not be shared, the person making the request should always refer to the source of the information.

Appendix 2

(text from the General Administrative Law Act) Section 2:5

- 1. Any person who, while performing the duties of an administrative authority, gains access to information which he/she knows or should reasonably assume to be of a confidential nature, and who is not already bound to secrecy by virtue of his/her office, profession or any provision of law, is obliged to keep secret such information unless he/she is required by law or by the nature of his/her duties to disclose it.
- 2. Paragraph 1 also applies to institutions and to persons associated with or working for them who are involved by an administrative authority in the performance of its duties, and to institutions and to persons associated with or working for them who perform a duty assigned to them by or pursuant to statute.

(text from the Netherlands Criminal Code) Article 98

- 1. He/she who is offered information, the confidentiality of which is in the interests of the state or its allies, or an object by means of which such information can be gained, or who intentionally provides or makes available such data for inspection by a person or body not entitled to that data, if he/she knows or should reasonably assume that this concerns such information, object or data, will be punished by a term of imprisonment of six years at most or a fine of the fifth category.
- 2. The same punishment will be imposed on a person who has gained information from a forbidden place and which relates to the security of the state or its allies, or an object by means of which such information can be gained, or who intentionally provides or makes available such data for inspection by a person or body not entitled to that data, if he/she knows or should reasonably assume that this concerns such information, object or data.

Article 98a

1. He/she who makes known information, an object or data as meant in Article 98, whether publicly on purpose, or whether without entitlement to do so, purposely provides or makes available to a foreign power, a person or body established abroad, or to such a person or body that the danger arises that the information or the data will be made known to a foreign power or a person or body established abroad, if he/she knows or should reasonably assume that this concerns such information or such data, will be punished by a term of imprisonment of fifteen years at most or a fine of the fifth category.

- 2. If the guilty party has acted during a time of war or in the service of or under assignment from a foreign power or a person or body established abroad, then a punishment of life imprisonment or of twenty years at most or a fine of the fifth category will be imposed.
- 3. Acts carried out in the preparation of a crime as described in the previous paragraphs will be punished with a term of imprisonment of six years at most or a fine of the fifth category.

Article 98b

He/she to whom the fault is attributable that information, an object or data as meant in Article 98 is made public or becomes available for inspection by a person or body not entitled to that, will be punished by a term of imprisonment of one year at most or a fine of the third category.

Article 98c

- 1. The following will be punished by a term of imprisonment of six years at most or a fine of the fifth category: 1°. he/she who purposely comes into possession of or keeps information, an object or data as meant in Article 98, without being entitled to do so;
 - 2°. he/she who carries out any action, with a view to gaining access to information, an object or data as meant in Article 98, without being entitled to do so;
 - 3°. he/she who covertly, under a false pretence, by means of a disguise or in a manner other than the normal method tries to gain access to or enters a forbidden place, and is present there through this manner, or who removes or tries to remove him/herself from there by means of one of those manners.
- 2. The stipulation under 3° does not apply if the courts find that the offender did not act with a view as meant under

Article 272

- 1. He/she who is obliged to keep any secret of which he/ she knows or should reasonably assume this by virtue of his/her office, profession or statutory regulation or previous office or profession, violates this purposely, will be punished by a term of imprisonment of one year at most or a fine of the fourth category.
- 2. If this crime is committed against a particular person, it will only be prosecuted under his/her complaint.

Article 273

- 3. 1. A punishment of six months at most or a fine of the fourth category will be imposed on he/she who purposely
 - 1°. in relation to a business in trade, industry or services at which he/she is or was employed, makes known particulars over which a confidentiality agreement was imposed on him/her or
 - 2°. makes known data that has been gained by criminal means from a digital source of a business in trade, industry or services or uses this with a view to profit, if this data at the time of being disclosed or being used was not generally known and this could give rise to a disadvantage.
- 2. A person is not punishable who could have assumed in good faith that disclosure was required in the public interest.
- 3. Therefore no prosecution will ensue on the complaint by the management of the business.

Format Description of scenario National Risk Assessment

This format can be used for writing the scenario. Using the format helps to safeguard that the scenario contains all the elements that are necessary for the risk assessment and by the capability analysis.

theme	
title of scenario	
time horizon	0-5 years 20 -25 years years (5-year period)
nature of the scenario	incident process
	natural dangers danger due to technical or human failure (non-wilful) threat (malicious, intentional)
typing the scenario	most likely most representative most serious
primary threat	territorial security physical security economic security ecological security social and political stability (more than 1 choice possible)
case-based reasoning (reference situations)	categories of causes: types of danger/threat:

context	general circumstances:
	current status management measures (resistance capability):
incident / process	description of incident / series of events:

	Vital sector Vital product or service				
	1) Energy	1. electricity			
		2. natural gas			
		3. oil			
	2) Telecommunication/IT	4. landline telecommunication services			
		5. mobile telecommunication services			
		6. radio communication and navigation			
		7. broadcasting (crisis communication)			
		8. internet access			
	3) Drinking water	9. drinking water services			
	4) Food	10. food provisions / safety			
	5) Healthcare	11. emergency medical services/other hospital care			
		12. medicines			
		13. serums and vaccines			
		14. nuclear medicine			
	6) Financial	15. payment services/ payment structure			
		16. financial transfer by government			
	7) Control and management of surface water	17. management of water quality			
		18. control and management of water quantity			
	8) Public order and security	19. maintenance of public order			
		20. maintenance of public security			
	9) Maintenance of public order	21. dispensation of justice			
		22. law enforcement			
	10) Public administration	23. diplomatic communication			
		24. provision of information by government			
		25. armed forces			
		26. decision-making public management			
	11) Transport	27. mainport Schiphol			
		28. mainport Rotterdam			
		29. main roads and waterways (Government infrastructre)			
		30. railway system			
	12) Chemische en Nuclear industry	31. transport storage and production/processing of chemical and nuclear substances			
ause	description of cause:				
	prevention status:				
	estimation of likelihood:				
ontext	general circumstances:				
	current management measures (resistance capability):				
• • -					
ncident	description of incident / series of events:				

Vital (continued)	Can vital sectors / vital products and services be affected by the scenario? In what way?		
	Vital sector	Vital product or service	
	1) Energy	1. electricity	
		2. natural gas	
		3. oil	
	2) Telecommunication/IT	4. landline telecommunication services	
		5. mobile telecommunication services	
		6. radio communication and navigation	
		7. broadcasting (crisis communication)	
		8. internet access	
	3) Drinking water	9. drinking water services	
	4) Food	10. food provisions/safety	
	5) Healthcare	11. emergency medical services/ other hospital care	
		12. medicines	
		13. serums and vaccines	
		14. nuclear medicine	
	6) Financial	15. payment services/ payment structure	
		16. financial transfer by government	
	7) Control and management of surface water	17. management of water quality	
		18. control and management of water quantity	
	8) Public order and security	19. maintenance of public order	
		20. maintenance of public security	
	9) Maintenance of public order	21. dispensation of justice and detention	
		22. law enforcement	
	10) Public management	23. diplomatic communication	
		24. provision of information by government	
		25. armed forces	
		26. decision-making public management	
	11) Transport	27. mainport Schiphol	
		28. mainport Rotterdam	
		29. main roads and waterways (government infra-structure)	
		30. railway system	
	12) Chemical and Nuclear industry	31. transport, storage and production/processing of chemical and nuclear substances	

continued	1.1	Encroachment on territory	consequences: (surface area and time period and area)
	1.2	international position	consequences: (indicators relating to actions, politics, non-political motiva- tion) primary cause(s): relevant circumstances (context):
	2.1	fatalities	consequences : (numbers and locations) primary cause(s): relevant circumstances (context):
	2.2	seriously injured and chronically ill	consequences : (numbers and locations) primary cause(s): relevant circumstances (context):
	2.3	physical suffering	consequences: (numbers and time period and area) primary cause(s): relevant circumstances (context):
	3.1a	costs	consequences : (costs and types of cost) primary cause(s): relevant circumstances (context):

	_		
continued	3.1b	economic damage	consequences: (influence on chosen indicators for economic damage) primary cause(s): relevant circumstances (context):
	4. 1a	flora and fauna	consequences: (relative surface area of affected nature areas and time period) primary cause(s): relevant circumstances (context):
	4.1b	environment	consequences: (total surface area in relation to exceeding intervention values) primary cause(s): relevant circumstances (context):
	5.1	disruption of everyday life	consequences: (choice of indicators and values for time period, numbers affected) primary cause(s): relevant circumstances (context):
	5.2	impairment to democracy	consequences: (choice of indicators and values for time period and extent) primary cause(s): relevant circumstances (context):
	5.3	social-psychological impact (fear and anger)	consequences: (choice of indicators and values and extent) primary cause(s): relevant circumstances (context):

Explanation of Format Description of scenario:

General

The aim of the Format is to bring the quality and usability of the developed scenarios as much as possible to the same level. The 'translation' of the description of scenario into the Format should therefore ensure that:

- the description of the scenario is tested for completeness
- the description of scenario forms a sufficient basis for the likelihood score
- the description of scenario for a sufficient basis for the impact scores
- the description of scenario for a sufficient basis for the capability analysis

The texts in the Format are as concise as possible; the Format is not meant to replace the description of scenario.

Case-based reasoning: summary of the available case-based reasoning relating to (comparable) incidents in

appendix

summary of case-based reasoning according to type of causes and type of consequences (danger or

hreat)

Context: specification of general circumstances and extent of vulnerability

description of general circumstances which are important to the scenario described: international relationships, internal political relationships, social relationships, location of characteristics, nature,

climatological developments, demographic developments

general description of the current status of management measures: legislation and regulations, input of

private and public services, available measures

Incident: concise description of the incident or process

one or more connected (adverse) events that provide a description together of the danger or the threat,

including indication of:

- location

- the people involved

- the assets involved

- time period

Cause: description of the cause(s) of the incident or description of the determining factors of the underlying

(insidious) process

description of the prevention measures, the aim of which is to prevent the incident or to manage the process, or respectively to reduce the likelihood of the incident/process development ("ist" situation)

available data (case-based reasoning or other) for estimating the likelihood; cite the factors that have an

influence on the uncertainty of the estimation

Result on the basis of the division into the 10 impact criteria:

description of the nature and extent of the consequences, including record of the relevant sources of

information, description of the causes and the response and management measures applied

 $(circumstances/context, \verb""ist"" situation), cite factors that have an influence on the uncertainty relating to$

the extent of the separate impact criteria

The use of expert opinions

The point of the National Safety and Security Strategy is to chart and analyse new as well as known risks that may present themselves. Often there is insufficient information available to enable determination of those risks and the future is uncertain. Therefore the use of expert opinions is necessary in order to reach an outcome. This text contains items for consideration when using expert opinions.

The use of expert opinions is deployed in all steps of the working method of the National Safety and Security:

- in identifying new risks and threats;
- in compiling the scenarios;
- by the scoring of the 10 impact criteria and the likelihood;
- by the estimation of the effect of policy measures in the capability analysis.

An expert estimation is an important source of information. However, the background of the choices made by experts is not always automatically clear. It may be drawn from the basic principles applied by those experts, and a transparent process of scoring of the impact and estimation of the likelihood can increase the quality and reliability of the outcome.

General items for consideration

The use of expert opinions is not only unavoidable, but also indispensible for the adequate reliability, robustness and details in compiling a scenario, the scoring of impact and likelihood and the inventory of the necessary capabilities.

To ensure the good use of experts, the following items for consideration form a useful guide.

Items for consideration for the process

- Determine who should take part in the process of writing the scenario, who for the scoring of the likelihood and the impact and who for the capability analysis. The combination in the group scoring the likelihood and the impact may be quite different from the group that wrote the scenario or the group that carries out the capability analysis;
- Take care that there is a good balance between substantive experts and policy representatives;
- Every expert participates under his/her own name;
- In connection with the confidentiality of the available information, it is possible that, in the case of threat scenarios, a limited group of experts will be appointed

- (such as staff of the intelligence service (AIVD), Netherlands Police Agency (KLPD), etc).
- Ensure that all professional areas that are relevant to the scenario are represented when putting together the working groups (irrespective of whether this concerns the development of the scenario's, the scoring or the inventory of capabilities);
- When putting together the working groups, also take into account the use of the working group's results in the following stage of the process. Make sure that there is sufficient information in the elaboration of the scenario that is relevant for scoring the impact and likelihood. Also ensure that there is sufficient information about relevant capabilities in the elaboration of the scenario, so that the scenario provides reference points for the inventory of capabilities to be increased in the subsequent capability analysis.
- Determine the best way in which the deployment of experts can be organised. Bear in mind (time) efficiency and discussion between experts;
- Use experts efficiently: determine whether experts should provide input continuously during the process or whether a one-off input from an expert would suffice;
- Determine how the experts' input can be organised as reliably and robustly as possible: discussion between experts may improve the results. There are also conceivable situations whereby discussion actually suppresses different opinions or specific comments;
- You should realise that the objective of the process is not primarily to reach agreement between the experts. Uncertainties and thereby differences of opinion are unavoidable in the type of scenarios used in the working method of the National Safety and Security. Well argued differences of opinion provide enrichment for the use of the outcome of analyses and scores.

Items for consideration for the substantive input of experts

- Ensure that the experts show explicitly what the chain of events is, what the causal connection is and which line of reasoning has been followed. Agreement about the chain of events, the causal connection and the line of reasoning followed in the scenario is necessary for a reliable scoring of the impact and likelihood and also for the capability analysis;
- · Experts will normally rely on years of experience and knowledge from different sources when formulating their opinions;
- Ensure that the experts indicate explicitly what their sources of information are (empirical data, model calculations), what suppositions they use and which uncertainties play a role in their opinions;
- Expert opinions are subject to empirical control: available data regarding experience may not be ignored, replaced or removed.
- Needless to say, data regarding experience must be tested against the current circumstances or against developments that influence (the chance of) the occurrence of future circumstances. In the case of threat scenarios, comment is made for this reason in the explanation of scheme 3 (chapter 6) of the respective correction factors. Determination of the correction factors should generally be based on expert opinions.
- Experts must keep to the formal calculation rules used in the calculation of likelihood.
- Determine how the expert can be given the best assistance in reaching an independent determination of his/her own interpretation and estimations.
- · The more explicit the sources of knowledge, suppositions and uncertainties are, the better the discussion between experts can be carried out and the better choices can be substantiated and followed. Set out clearly as many references, sources and suppositions as
- Distinguish between uncertainties (due to lack of knowledge) and differences of opinion between experts;
- Determine how the greatest possible convergence, as well as the 'best' outcome, of the different expert opinions can be achieved while keeping the individual opinions, and how this can best be reported including the uncertainties and different opinions.

Key indicators associated with criterion 3.1a

The following key indicators can be used when estimating the costs within impact criterion 3.1a.

Material damage to homes (including contents): Infrastructural objects:

low/middle/high-rise building	€ 170,000	pumping station	ı€	750,000
house	€ 240,000	sewage plant	€	10,000,000
farm	€ 400,000	bridge, viaduct	€	5,000,000
offices	€ 100-200,000 /m2	railway line	€	1,350,000 / km

Damage to health

• costs of healthcare for permanent incapacity to work/seriously injured € 100.000 • costs of healthcare for half year of incapacity to work/slightly injured 5,000 • incapacity to work benefits (permanent, average income, 38 yrs.) € 650,000 • benefits relating to fatalities (average income, 38 yrs., 2 children) € 160,000 (based on calculation models used by insurers/loss adjustors)

Financial damage

- relationship between direct loss of profits versus indirect loss of profits 2:1 (based on the Directorate-General for Public Works and Water Management [Rijkswaterstaat] discussion policy document HIS-SSM)
- € 550 per m2 business location annually (based on Gross Domestic Product)

N.B.: the amounts cited are subject to inflation. Amounts are coupled to the price levels in 2008.

Definitions:

- Replacement value of capital goods: 'new for old value of capital goods minus depreciation' at the time of the incident
- · Gross added value: 'contribution of capital and labour (equal to fixed costs plus profits)' during the recovery period
- Net added value: 'gross added value minus depreciation' during the recovery period

The policy document The Economic Significance of the National Safety and Security Risks by Prof. Peter A.G. van Bergeijk (August 2012) can be requested from the Network of Analysts B.

Notes by criterion 3.1b

General

The first two indicators cited in impact criterion 3.1b are variables, of which it is known from empirical research that they have a negative influence on the adaptability." In case of higher prosperity (measured using the real income per capita), there are greater possibilities for including far-reaching events; declining effective demands can be overcome more easily by healthy government finances (measured against the EMU balance). The last two indicators cited are directly related to the threat of the economic vitality. In the first place, depending on the nature of the scenario in hand, a view is taken of the unemployment figures. Sharply rising unemployment (particularly when this is long-term) impairs the human capital and has a disruptive effect in consultative structures and society. In the second place, a view is taken of the share of the sectors affected. This indicator indicates how widely the business community will be affected. A problem that is concentrated in a small sector or even a single company affects the vitality less quickly than a problem occurring in all businesses.

Three of the indicators also give the consequence of a possible scenario concerning the impairment to the vitality of the Dutch economy for the individual inhabitants of the Netherlands:

- reduced purchasing power
- reduced public services and provisions

The scenarios that score (highly) on these indicators will not only have economic effects, but will probably also have an effect on other areas of the National Safety and Security: particularly social and political stability, and territorial security.

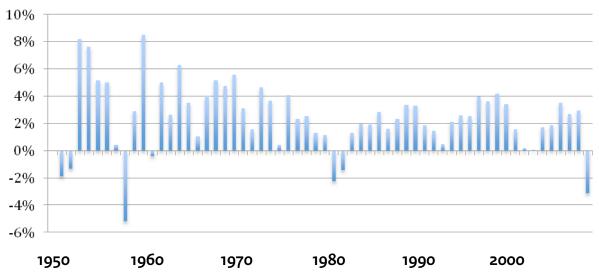
The choice of the indicators cited is partly determined by the expectation that, on the basis of the description of scenario, the indicators cited are suitable for making a responsible and as objective as possible estimation of the

1. Developing the real income per capita

The development of the real income per capita is the most direct yardstick for national prosperity, also in terms of international comparisons. The real income per capita corrects the price trends and therefore provides a yardstick for the quantity of goods and services that can be purchased with the average income per Dutch citizen.

 $^{^{\}mbox{\tiny 11}}$ I. Noy, The macroeconomic consequences of disasters, Journal of development economics 2009, p. 221-231

Figure 1 Growth GDP per capita, the Netherlands, international purchasing power parities 1951 - 2009



Source: Alan Heston, Robert Summers and Bettina Aten, Penn World Table Version 7.0, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, 2011.

In an open economy such as the Dutch economy it is also important to take into account with developments in national and international prices. The usual measure of the real income per capita makes a correction for this in relation to international purchasing power parities (a type of international price index figures). Figure 1 illustrates the post-war development of the GDP per capita. The average growth is 2.4% per annum with a standard deviation of 2.5%.

Table 1 sets out the lowest post-war growth figures on the basis of the same source. All other growth figures for the post-war period lie above the +1 per cent per annum. The table indexes border values by -1% and by -2%. Therefore during the post-war period there were 2 cases of limited extent, 3 cases of significant extent and 3 cases of substantial extent. The table shows the exceptions; this does not concern the normal spread, but the exceptions in the lowest part of the distribution.

Table 1 Worst post-war years in terms of real growth per capita of the population

Year	Year on year mutation of GDP per capita in the Netherlands
1958	-5,2%
2009	-3,2%
1981	-2,3%
1951	-1,9%
1982	-1,4%
1952	-1,3%
1961	-0,4%
2003	0,0%

During the pre-war period there were actually much greater results registered in the real Dutch GDP (Table 2). It is clear, however, that economic disaster years are mostly war-related; the long-term perspective over two centuries indicates a frequency of once in thirty years. During the post-war period, the incidence therefore became less frequent due to better management of public finances and the introduction of automatic stabilisers, which absorb the actual fluctuations in the income per capita.

Table 2 Economic disaster years in the Netherlands 1807-2006)

(actual decreases in income and consumption per capita of more than 10%)

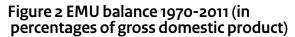
Year	Gross national income per capita	Year	Consumption per capita
1944	-33,7%	1918	-37,7%
1940	-13,0%	1942	-31,7%
1812	-12,9%	1809	-17,1%
1917	-11,5%	1940	-12,3%
1808	-10,8%	1941	-11,5%
1813	-10,0%	1943	-11,1%
1942	-9,4%		
Number of observations	199		194
Percentage disaster years	3,5%		3,1%
Average extent	14,5%		20,2%

Source: calculated from Barro, R.J. and J.F. Ursua, 2008, 'Consumption Disasters since 1870', Brookings Papers on Economic Activity, spring 2008, 255-335.

On grounds of the data gathered during the post-war period, the upper level for the indicator value (i.e. "no growth") is determined as well as the border values.

National debt: government balance and government debt

The development of the EMU shortfall is given in Figure 2, whereby a calculation is used with the help of the same definition for the years before the euro had been introduced. The EMU deficit is one of the most important indicators for the financial health of the State of the Netherlands.





Source: CPB Central Economic Plan 2012, The Hague 2012, Appendix 2

The EMU balance is the total income minus the expenditures by central government, social funds and local government. This also includes income and expenditure with the nature of capital, such as buying and selling land, investments, investment contributions and proceeds from the sale of gas.

Financial transactions, such as the sale of participations or credit provisions, are not considered to be income or expenditure. In case of an EMU surplus (positive EMU balance), then there is a budgetary surplus and the national debt decreases.

The EMU deficit amounted to an average of 2.7% over the years 1970-2011, with a standard deviation of 2.3. On grounds of this data, the lower level of the indicators is set at 4% and also the border values set.

Unemployment

The chosen border values are tuned to the experience figures for the last decades and take thereby the average unemployment basis over the period 2000-2010 as starting point.

Figure 3 shows the development of unemployment during the period 1970-2011 as a percentage of the working population. The unemployment fluctuated over the period 2000-2010 between 2.5% and 5.3%. The average is 4.4% with a standard deviation of 1.8. The experience figures show twice close to a doubling in a 2-year period.

9.0 8.0 7.0 6,0 5,0 4.0 3,0 2,0 1,0 0,0 1970 1980 1990 2000 2010

Figure 3 Unemployed working population 1970-2011 (level in %)

Source: CPB The Macroeconomic Survey 2012, The Hague 2011, Appendix 1.1

On the basis of this data the lower level of the indicator is set on an increase in the unemployment by 2 percentage points and the other border values are also fixed.

Share of sectors involved and duration of the event

This additional indicator combines the breadth of the influence of the event (the extent to which the Dutch business community is affected) with the duration of that influence, because this combination of factors is relevant to the question whether there is actual impairment to the vitality of the Dutch economy (there needs to be more going wrong than just a short-term problem).

The breadth of the influence can be made operational according to the share of the sectors in question in the gross added value (Table 3). There is, in any case, no impairment to the vitality if the influence of the event lasts for less than 1 month.

Table 3 Share of sectors in gross added value in 2010

Sector	Gross added value		
Economic activities	mln euros	share	
A Farming, forestry and fisheries	9400	1,8%	
B Extraction of minerals	16235	3,1%	
10-12 Food and drink industry	14275	2,7%	
13-15 Textile, clothing and leather industry	1167	0,2%	
16-18 Wood, paper and graphic industry	4614	0,9%	
19 Petroleum industry	374	0,1%	
20 Chemical industry	11354	2,2%	
21 Pharmaceutical industry	1455	0,3%	
22-23 Plastics and building material industry	4177	0,8%	
24-25 Base metal, metal production industry	7165	1,4%	
26 Electrotechnical industry	1996	0,4%	
27 Electrical apparatus industry	1039	0,2%	
28 Machine industry	6227	1,2%	
29-30 Means of transport industry	2585	0,5%	
31-33 Other industry and repairs	8363	1,6%	
D Provision of energy	10393	2,0%	
E Water companies and waste management	4498	0,9%	
F Construction industry	28672	5,5%	
G Trade	67968	13,0%	
H Transport and storage	22349	4,3%	
l Catering industry	9107	1,7%	
58-60 Publishing, film, radio and T.V.	6095	1,2%	
61 Telecommunication	8223	1,6%	
62-63 IT and information services	11331	2,2%	
K Financial services	43383	8,3%	
L Lease and trade in immovable property	32488	6,2%	
69-71 Management and technical advice	25118	4,8%	
72 Research	2186	0,4%	
73-75 Advertising, design, other services	5209	1,0%	
N Lease and other business services	28046	5,4%	
O Public management and government services	39220	7,5%	
P Education	26924	5,1%	
86 Healthcare services	27987	5,3%	
87-88 Care and welfare	23068	4,4%	
R Culture, sport and recreation	4879	0,9%	
S Other services	6051	1,2%	

Source: Statistics Netherlands, National Accounts 2010

Examples of estimations of likelihood class

Large fire in a catering establishment with dozens of fatalities

Model incident scenario developed from the fire in the café in Volendam.

Large fire in a catering location resulting in dozens of fatalities and possibly hundreds of injured. The location is totally destroyed.

Reference locations: cafés, discos, hotels, bed and breakfast establishments, restaurants.

Determine the likelihood on the basis of case-based reasoning: 2 examples in the last 30 years (Volendam and Hotel Polen). Possible correction factor for the improvement in the regulations and check on compliance (approx. factor 0.1 - 0.5; factor is determined by expectation that the people affected can escape safely).

```
P (fire in a catering establishment) = 1/15 x (0.1 - 0.5) per year = 5/15 x (0.1 - 0.5) per 5 years » 10% per 5 years = class D
```

An alternative line of reasoning is:

```
P (fire in a catering establishment) = P (G) x P (E|G) 
= P (G1) x P (G2) x P (G3) x P (E|G) 
= 50/5 yrs. x 0.5 x 0.2 x 0.02 
= 0.1 = 10% per 5 years = class D
```

P (G1): number of fires in catering establishments per year (according to Statistics Netherlands, statistics for 2005-2006)

P (G2): likelihood that the catering establishment is totally destroyed by fire

P (G₃): likelihood that the catering establishment is very busy

P (E|G): likelihood that the fire will lead to dozens of fatalities

N.B.

- 1. The chosen data is fictional.
- 2. It is assumed that the probabilities are mutually independent of each other, but particularly event G1 may be dependent on event G3.

Outbreak of pandemic form of influenza

A genetic change in the H5N1 virus of Influenza A ('bird flu') leads to the virus becoming transmissible between people. The first outbreaks were recorded in Malaysia, and within 4 to 8 weeks the virus had spread across all of the continents. After 6 weeks the virus had reached Western Europe, and the duration of the pandemic in the Netherlands is around 10 weeks. Almost 50% of the population become infected; the likelihood of infection is the same amongst the population groups. The mortality rate is 0.5% of those affected. The new virus is a completely new strain; it takes more than six months before a new vaccine can be developed and available for use.

Determining the likelihood from the case-based reasoning: 2 pandemic outbreaks on average in the course of one century. Experts are of the opinion that in 2007 the risk of a worldwide outbreak had increased by at least a factor of 2 due to the intensification of transport/contacts.

The pandemic described can be categorised as 'serious' within the possible spectrum relating to seriousness (within the category definitions of: mild - average - serious - very serious), which is mainly determined by the extent of the genetic change and the chance of fatality. The likelihood that the pandemic outbreak will fall under this category is estimated to be 10%.

P (pandemic scenario) = P (pandemic) x f (pandemic) x P (seriousness of pandemic) $= 2/100 \times 2 \times 0.1 = 0.4\%$ per year = 2% per 5 years = class C

Floods in coastal areas

Following a heavy storm and its associated long-term high water levels, multiple breaks in the dyke occur along the coastline.

This concerns a long storm (45 hours) of hurricane force whereby wind speeds of 170 km/h were reached at a level of 2 km. One week after the dyke breaks, a maximum surface area of 4330 km2 will be flooded affecting 2.3 million people. after 4 hours, an area of 1240 km2 and more than 700,000 people affected; The development:

> after 24 hours, an area of 3470 km2 and more than 1,800,000 people affected; after 48 hours, an area of 3940 km2 and more than 2,000,000 people affected.

The storm scenario outlined is more serious than the storm scenario on which the safety standard for the design of the dykes is based. The safety standard is set at 1/10,000 per year for the coastal area.

The likelihood of floods in the coastal area on the basis of the outlined scenario is therefore less than 1/10,000 per year.

P (flood scenario) = < 1/10,000 per year = < 5/10,000 per 5 year = < 0.05% per 5 year = class A

Political murder

On 15 March 2011 - four weeks prior to the Dutch general election - Ms Fatima H. was murdered in broad daylight. The attacker was arrested a few days later and he appeared to be associated with a radical Islamic group. There was no doubt concerning the motive: Fatima H. was considered to be a 'renegade' and had already been accused on several occasions of bringing the Quran into disrepute. Fatima H. had been politically active for some years; she had a great deal of support for her views about the emancipation of (Muslim) women and for many people she was the example of an emancipated Muslim. Fatima H. was standing at an electable position on the party list for the forthcoming general election. Fatima H. had security protection 24 hours a day.

Bearing in mind the recent reference scenarios, the scenario is considered to be highly likely during the coming 5-year period. However, concrete indications relating to a person, place or time do not exist.

It is the task of the National Coordinator for Security and Counterterrorism (NCTV) to protect people such as Fatima H.; this is carried out in a professional manner.

P (political murder) = class D with sensitivity score 'low' = class C

Applying the outline for two examples (floods and political murder)

The likelihood is initially determined for a period of five years.

Source of information/ methodology	Chance incident occurs (trigger)	Chance extent of consequence	Correction prevention	Correction repression	Likelihood
Example of floods	storm with extreme wind speeds	break in dyke ring 14	programme of dyke strengthening	evacuation	
	< 1/100.000	x 0,5	x 1,0	- (x 0,95)	1/200.000 = A
	 Historische analogy (+ Modelcalculations Bayesian statistics Change of failure, netv Desciption of scenario 	workanalysis decisio	on charts		
Example Political murder	Highly likely No concrete indications	1 fatality	Low vulnerability	NA	
	> 1/20	x 1	x 0,1	x 1	1/200 < W < 1/20 = C
Sources	- Expertopinions - Trendanalyses				

Likelihood (2008-2012):

Flooding 1/100.000 x 0,5 x 1,0 x 0,95 = ~ 1/200.000

Dangers in all cases are calculated with a factor that can take all values (smaller, the same or larger than 1). Political murder 1/20 x 0.1 = 1/200

- 1. In relation to vulnerability, threats are always calculated with a factor of 0.1 (low vulnerability), 1 (average vulnerability) or with a factor 10 (high vulnerability).
- 2. Estimation of the vulnerability can be made with the help of the outline for vulnerability given below in this appendix.

In the case of threats, the chance of consequence is always set at 1 (processed in chance that the incident occurs), as well as the correction factor for repression is always set at 1.

Determining the likelihood for the period 2028-2032: Incorporating expected development of trends

Example floods		
Chance of incident occurring (trigger)	storm with extreme wind speeds	< 1/100.000
Trend for chance (from context)	climate change	++ of (x 1,5)
Chance of extent of consequence	break in dyke ring 14	x 0,5
Trend of extent of consequence	economic and demographic growth	++ of (x 1,2)
Correction for prevention	Programme of dyke strengthening	x 1,0
Trend for prevention	investments as share in GDP	(of 0,75)
Correction for repression	evacuation	- (x 0,95)
Trend for repression	Self-reliance increases	- (of x 0.9)
Likelihood		1/50.000 = A

^{*} the corrections factors used are fictional

Likelihood of floods in the period over 20-25 years (2028 - 2032): 1/100,000 X 1.5 X 0.5 X 1.2 X 1 X 0.75 X 0.95 X 0.9 = ~ 1/50,000

Translation of completed criteria tables into label

The tables below can be used for translating the scores awarded by the experts for the impact criteria into a label for the impact, varying from A to E.

Criterion 1.1

surface area → time period↓		Regional 100-1000 km² (0,25% - 2,5% surface area)	10.000 m ² (2,5% - 25%	National > 10.000 km ² (> 25% surface area)
2 to 6 days	Α	А	В	C
1 to 4 weeks	Α	В	C	D
1 -6 months	В	C	D	Е
½ year of longer	С	D	Е	Е

	<250 pers/km2	250 – 750 pers/ km2	> 750 pers/ km2
Population density	-1		+1

Criterion 1.2

number of indicator- categories → extent↓	max. 1 indicator category	max. 2 indicator categories	max. 3 indicator categories
limited	٨	R	C
average	В	С	D
substantial	С	D	Е

Criterion 2.1

number	< 10	10-100	100-1000	1000-10.000	> 10.000
Immediate fatality (within 1 year)	Α	В	С	D	Е
Early fatality (within 20 years)	Α	Α	В	C	D

Criterion 2.2

number	< 10	10-100	100-1000	1000-10.000	> 10.000
	Α	В	C	D	E

Criterion 2.3

number → time period↓	< 10.000 affected	< 100.000 affected	<1.000.000 affected	>1.000.000 affected
2 to 6 days	Α	В	С	D
1 to 4 weeks	В	С	D	Е
1 month or longer	С	D	Е	Е

Criterion 3.1a

Cost in €	< 50	< 500 million	< 5	< 50	> 50
	million		billion	billion	billion
1. material damage					
2. damage to health					
3. financial damage					
4. costs of combating and recovery					
total economic damage	Α	В	C	D	Е

Criterion 3.1b

Number of relevant indicators	1 indicator	2 indicators	3 indicators
Extent			
all indicators score max. limited	А	А	В
1 indicator scores max. average	В	В	С
2 or more indicators score max. average	-	С	D
1 indicator scores substantial, others max. limited	С	С	D
1 indicator scores substantial, others max. average	С	D	E
2 or more indicators score substantial	-	E	Е
Does the share of the gross added value of the affected sector appendix), as well as the time period of impairment lasting a		0% of the gross domes	tic product (see

The bottom levels of the indicators as given in the category 'Extent limited' should be considered to be the 'baseline', therefore dated 2012.

This means that the final assessment of this criterion is an A in case: the real income per capita of the population increases, and the EMU deficit remains under 4% of the GDP, and unemployment increases by less than 2%, assuming that the criterion is applicable in principle for the scenario under consideration (otherwise the final assessment will be NA).

Criterion 4.1

Α

Relative surface areas→ Policy category ↓	<3%	3-10%	>10%
Breeding areas for countryside birds	А	В	С
EHS areas	В	С	D
Natura 2000 areas	С	D	Е
Wadden Sea	С	D	Е
Is the duration of the impairment less than 1 year?	Α		_
Is the duration of the impairment longer than 10 years?	+1		

В

Absolute surface area →	local (max. 30 km2)	regional (30 - 300 km2)	provincial (300 – 3000 km2)	national (> 3000 km2)
Time period ↓				
Less than one year	А	Α	Α	A
Longer than one year, less than 10 years	В	С	D	Е
Longer than 10 years	С	D	E	Е

The final score for criterion 4.1 is the highest score from part A or B.

Criterion 5.1

number → time period ↓	< 10.000 affected	< 100.000 affected	< 1 million affected	> 1 million affected
1-2 days	Α	Α	В	С
3 days to 1 week	Α	В	С	D
1 week to 1 month	В	С	D	Е
1 month or longer	С	D	Е	Е

The result of the impact score should be corrected on the basis of the number of indicators that apply:

- in case a maximum of 1 indicator applies, then -1 (e.g. D becomes C);
- in case at least 3 indicators apply, then +1 (e.g. B becomes C).

Criterion 5.2

Number of indicators Extent	Max 1 of 6 indicators	Max 2 of 6 indicators	3 or more of 6 indicators
Limited	А	В	С
Average	В	С	D
Substantial	C	D	E
Did the impairment only last	a few days?	-1	-
Does the impairment last for		+1	

Criterion 5.3

Number of sign. cat. →	0 significant	1 significant	2 significant	3 significant
Final gradation ↓ Low	A	-	-	-
Average	А	В	С	D
High	-	С	D	Е

Perceptible negative emotions and feelings of < 10,000 people during a maximum of one week? -1

Perceptible negative emotions and feelings of > 1,000,000 people (including in 2 or more of the large cities) during at least one week?

N.B.: in case the final score for the forecast value does not agree with the broad estimation from the expert group, then the advice is to weigh up all the indicators carefully once again as a group and, by means of motivation, possibly to adjust individual indicators, which could (possibly) result in a new final score. Differences in insight between the experts are visible in the scores for the Lower level and the Upper level.

Blank format composition of working group capability analysis

Year of National Safety and Security cycle: Scenario:

Name of expert	Relevant job	Areas of expertise	Involved in which part/meeting in
	functions/		the process
	organizations		

Protocol for working method capability analysis

The protocol in hand is a proposal for a possible working method.

The aim is to realise the capability analysis during 2-3 meetings.

Series of steps:

1. Select the relevant impact criteria on the basis of the description of scenario and scenario score (and possibly the likelihood) for which capabilities can be identified and evaluated.

Recommendation: chairperson and secretaries choose preferably no more than 3 impact criteria (incl. likelihood), but in any case all impact criteria that score D or E.

2. Make a preselection of the capabilities from the list of capabilities (appendix E) that could have an influence on the impact criteria selected above.

Recommendation: to be carried out by chairperson/ secretary of the working group.

3. Ask the experts in the working group (preferably in writing) to make proposals regarding capabilities that are relevant in their view and may need increasing on the basis of the preselection of relevant impact crite¬ria and capabilities. The experts can use the available blank format (appendix F) for this purpose.

The secretary makes an inventory in the description of scenario or the score whether report should be made of the capabilities that possibly need to be increased.

- 4. 1st meeting working group, at which are included on the
 - · explanation of scenario and score by representative from the Network of Analysts
 - presentation of inventory of relevant capabilities, explained if necessary by the different experts;
 - · identification of supplementary capabilities, whereby a choice can be made for an approach by the group as a whole, for an individual expert approach, or mixture of these:
 - · complete format particularly in relation to experts, organisations and fields of expertise (appendix B)
- 5. The results of the 1st meeting are processed by the secretary in a memorandum. The experts are then asked to choose the capabilities that need tackling with

Recommendation: every member cites 5 capabilities at most.

- 6. 2nd meeting working group, at which are included on the agenda:
 - explanation of the temporary selection of the experts, explained if necessary by the relevant experts;
 - final selection of the most important capabilities that will be worked out in more detail.
- 7. 2nd or 3rd meeting: Elaboration of the selected capabilities and their associated measures according to the list of questions (appendix G)

Recommendation: further elaboration of the list of questions should be carried out preferably by the parties most involved.

- 8. Concept final report compiled by chairperson and secretary; written feedback from the experts (in case of differences in insight, it may decided that an extra meeting of the working group should be held or that the report will be passed with a minority view).
- 9. Meeting with the Head Group from the IWNV about the final report.
- 10. Final report compiled by chairperson/ secretary of the working group.

List of capabilities

Explanation of the list of capabilities.

This list of capabilities is intended to help working groups who are concerned with the capability analysis of scenarios under the framework of the working method of the National Safety and Security. The aim of the list is to set the working groups thinking in their search for capabilities that could be increased. Although attention is given to the logic of the list, overlap between different capabilities cannot be excluded. That is not a bad thing; it sometimes helps to look at a subject from different aspects. The list should in any case ensure that no capabilities that should be increased are

The list is divided up into three levels. The highest level comprises the following categories:

- A. General;
- B. Proaction and prevention;
- C. Protection of vital systems;
- D. Combating, basic requirements;
- E. Combating, attention to population care;
- F. Combating, attention to fire services;
- G. Combating, medical care;
- H. Combating, attention to police assistance;
- J. Recovery and aftercare.

Capabilities are formulated under every main category, elaborated further in the third level if necessary.

A GENERAL

Capabilities that contribute to an effective and efficient elaboration of the capabilities and implementation of the associated tasks in the area of proaction & prevention, protection, combating and subsequent phase (recovery and aftercare). The following general capabilities apply to all scenarios.

A.1 Direction, management and supervision

The ability to practice direction and management over the domain of the National Safety and Security.

- A.1.1 Strategic planning.
- A.1.2 Development, implementation and evaluation of, and responsibility for policy.
- A.1.3 Organising structures and setting up processes in relation to disaster and crisis management.
- A.1.4 Developing legislation and regulations and providing frameworks (possibly also international), as well as agreements in relation to monitoring and enforcement (international, national).

A.2 Identification and interpretation

The ability to observe or to receive signals and developments that (could) affect the national safety and security, and to interpret these (nationally and internationally).

- A.2.1 Monitoring and identifying national and international developments and interests, including political administrative, military, economic, ecological, social cultural, technological areas (for example, by means of intelligence, research, analysis and assessment).
- A.2.2 Early Warning Systems in relation to maintaining supervision over, and interpretation of developments that require early intervention.
- A.2.3 Identification, analysis and evaluation of (potential sources of) risks, also long-term insidious risks, and political administrative decision-making with regard to risks.
- A.2.4 Laboratory tests and other analytical research.

A.3 Development of knowledge

The ability to develop and circulate knowledge concerning the national safety and security, or circumstances that have an influence thereby.

- A.3.1 Research & development, development of knowledge with regard to the following areas: themes concerning the national safety and security, networks and key functions, development and deployment of capabilities, determining the impact and causes thereby.
- A.3.2 Sharing knowledge and facilitating expertise, nationally and internationally (professional knowledge infrastructure and knowledge management).

A.4 Communication and information management

The ability to acquire, process, interpret, supply or to exchange data and/or information about all relevant aspects of the National Safety and Security disaster and crisis management.

- A.4.1 Deployment of communication for the benefit of the advancement of risk awareness.
- A.4.2 Organisation, coordination and implementation of providing information to, and communication with the general public and businesses in the area of general prevention measures.
- A.4.3 Organisation, coordination and implementation of alerts and/or alarms from the disaster/crisis organisation, as well as the provision of information within these organisations.
- A.4.4 Organisation, coordination and implementation of providing information to, and communication with the general public (public information, related information) and businesses in threatened or affected areas in the area of operational combating and emergency services, and activities in the subsequent phase (recovery and aftercare), also internationally.
- A.4.5 Having report and alarm measures available and ready for use, as well as the deployment of means of communication (also cross-border and international), including social media.
- A. 4.6 Mutual provision of information between departments and specific stakeholders, such as public and private bodies and the media (press announcements).

- A.4.7 Using the media for specific purposes, such as influencing knowledge, attitude and behaviour, perception and expectations, and self-reliance.
- A.4.8 Acquiring, keeping up-to-date, verifying and making available of a total image of the threat/ incident in relation to: the course of events, the emergency services or other interventions, the prognosis and the approach, the measures taken and the results of these.

A.5 Finances

The ability to deploy financial arrangements.

A.5.1 The quick and adequate organisation of financial (emergency) provisions and regulations in relation to social security, response and subsequent phase capabilities (national, international).

A.6 International relations

The ability to act effectively in the international context for the benefit of the national safety and security.

- A.6.1 The use of diplomacy (aimed at states, institutions and the public), collaborative development (financial instruments for operational capabilities).
- A.6.2 Deployment of and contribution to the development of inter-national consultation and treaty possibilities and using (international) interest groups, NGOs, multinational companies and organisations (e.g. OCHA and OPCW).
- A.6.3 Deployment of the armed forces in connection with an international collaboration.
- A.6.4 Deployment of the intelligence services in connection with an international collaboration.

A.7 Self-reliance of the general public and the business community

The ability of the general public and the business community to provide their contribution to the disaster and crisis management.

- A.7.1 Development of an action perspective, self-reliance and deployment of the general public.
- A.7.2 Development of an action perspective, self-reliance and deployment of the business community.
- A.7.3 Integration of self-reliance and deployment of the general public and the business community in disaster and crisis management plans.
- A.7.4 Development of a set of instruments to help increase the awareness and resistance of the general public and the business community.

B PROACTION and PREVENTION

Capabilities that contribute to an effective and efficient elaboration of the tasks in the area of proaction and prevention, in addition to the general capabilities.

B. 1 Prevention or removal of the source of the threat/ incident and reduction of the chance of its occurring, developing or spreading

The ability to make political administrative decisions, including enforcement and supervision in order to prevent or remove a potential threat/incident, or to create such circumstances that these are unable to lead to a threat/ incident.

- B.1.1 The development through to implementation of (international) legislation and regulations.
- B.1.2 The adequate design of the town and country planning (including zoning plans and types of permissible activities, safe infrastructure).
- B.1.3 The adequate organisation of social systems, structures and activities (including alternative production methods, the spread of suppliers and customers, education for equal opportunities, housing policy, protection of social security, promoting fair international trade, licence policy, advancing hygiene in care institutions).
- B.1.4 The adequate management of nature and the environment.
- B.1.5 The prudent installation and expert handling of (new) technology and technical systems (e.g. IT), the trustworthy building of constructions (e.g. buildings, premises, installations).
- B.1.6 Enforcement policy, (personal and construction) security and guarding (including monitoring public order and security and border control of vectors, dangerous substances, etc.)

B.2 Reduction in exposure or vulnerability to threat/ incident

The ability to limit the consequences of a threat/incident.

B.2.1 The adequate design of the town and country planning (e.g. compartmentalisation, zoning, barriers, no vulnerable constructions, block transport of dangerous substances, overflow areas).

- B.2.2 The adequate fitting out of social systems, structures and activities (e.g. stimulation policy, deprived areas, import/export limitations).
- B.2.3 The adequate fitting out of landscape and other nature areas (e.g. firebreaks).
- B.2.4 The adequate design of technological/technical systems and constructions (e.g. fire safety, redundancy, division, possibilities for disconnection, backup).
- B.2.5 Judicial policy (e.g. emergency regulations, 'on-the-spot penalties policy)
- B.2.6 The adequate design of the systems and institutions in the area of public health (design of hospitals, preventive vaccinations).

B.3 Promoting conditions for direct response to threat/incident

The ability to create the conditions so that an effective response to the threat/incident and an effective recovery are possible.

- B.3.1 The adequate design of town and country planning (e.g. accessibility of location of threat/incident, availability of machinery for combating, escape routes, pick-up points).
- B.3.2 The adequate fitting out of social systems, structures and activities (e.g. social cohesion, self-reliance of the general public, the resistance of businesses and organisations).
- B.3.3 The adequate fitting out of landscape and other nature areas (e.g. accessibility of location of threat/ incident).
- B.3.4 The adequate design of technological/technical systems and constructions (e.g. identification, alarms, evacuation, company emergency response organisation).
- B.3.5 Judicial policy (e.g. security and availability of data files, CCTV, control of licence requirements, combating threat/incident).
- B.3.6 The adequate design of systems and institutions in the area of public health (intervention strategies, vaccine stocks, vaccination policy for key figures and emergency service providers, available care capability).

C PROTECTION OF VITAL SYSTEMS

Capabilities that contribute to an effective and efficient elaboration of the protection tasks in the area of the undisrupted functioning of vital systems (including provision of services), in addition to the general capabilities.

C.1 Protection of vital infrastructure

The ability of public and private entities to identify, name, place in order of priority and protect vital infrastructure in order to be able to detect, prevent or combat attempts or circumstances whereby the vital infrastructure becomes disrupted or impaired or fails.

- Identifying the vital infrastructure. C.1.1
- C.1.2 Determining the risks.
- C.1.3 Placing the vital infrastructure in order of priority.
- C.1.4 Developing, evaluating (including measuring effectiveness) and maintaining plans, procedures, (protection) programmes and systems.
- C.1.5 Developing and keeping up with training practise programmes.
- C.1.6 Coordinating and managing the protection of the vital infrastructure, including that which is spread over multiple sectors.

D COMBATING, BASIC REQUIREMENTS

Capabilities that contribute to an effective and efficient elaboration of the tasks in the area of processes that bring with them conditions for combating (response phase) with the system of disaster and crisis management, in addition to the general capabilities.

D.1 Report and alarm

The ability to gain the essential data of a threat/incident and as effectively and efficiently as possible to make this available.

- D.1.1 Setting up the main structure of combating the disaster or crisis, including the control room.
- D.1.2 Setting up a monitoring and analysis facility that monitors and analyses the development of the crisis with the aim of being able to determine when and in which way interventions could or should be deployed.

D.2 Scaling up and down

The ability to adjust organisations, procedures and work processes to the scale (size) of a threat/incident, as well as the measures for combating such, and subsequently to round this off again.

- D.2.1 Scaling up and scaling down the of the operational services on stand-by.
- D.2.2 Scaling up and scaling down businesses, public life and care institutions.
- D.2.3 Scaling up and scaling down the municipal services and management (decentralised and central).
- D.2.4 Scaling up and scaling down of the (national) knowledge infrastructure.

D.3 Leading and coordination

The ability to actually realise the input of people, means and methods in order to be able to combat the threat/ incident as well as possible and to deliver the necessary performances for combating.

- D.3.1 Providing multidisciplinary coordination by setting up, running and winding down an (operational) crisis centre.
 - The tasks include giving and ending alarms; staffing and leadership; coordination with other governments, NGOs and the private sector; coordination of the public provision of information and management of the operational and administrative information and communication for combat and recovery.
- D.3.2 Determining the specific manner, according to the circumstances, of combating the threat/incident for all the disciplines (horizontal) and for all levels (vertical) mutually (decision-making).
- D.3.3 Coordinating and providing leadership in the actual combating or, as the case may be, to the substantive combating processes.
- D.3.4 Monitoring the results of the combating and, on the basis of this, assessing and adjusting the combating.

D.4 Resource management

The ability to plan, implement, monitor and adjust activities with a view to recruiting and making available personnel and facility provisions in good time and of the correct quality and quantity.

D.4.1 Setting up and maintaining an effective health and safety programme, including aftercare, in accordance with the requirements for safety at work.

- D.4.2 Being responsible for (the possibility of) an adequate national deployment of the armed forces (Intensification of Civil-Military Cooperation or ICMS).
- D.4.3 Management of volunteers.
- D.4.4 Management and distribution of critical staff, machinery, equipment and working methods.
- D.4.5 Making available (temporary) housing, services and means, as well as other provisions (including IT).

E COMBATING, POPULATION CARE

Capabilities that contribute to an effective and efficient elaboration of the tasks in the area of population care during the combating (response phase) within the system of disaster and crisis management, in addition to the general capabilities and the basic requirements for combating.

E.1 Public care

The ability to cater for the acute needs of those affected.

- E.1.1 Identifying and localising groups that are less self-reliant and providing special arrangements for these groups.
- E.2.2 Determining and providing evacuation routes and reception areas.
- E.2.3 Providing for the immediate availability of public transport and reception centres with facilities for registration and care, emergency care teams and public order teams, as well as a regulation for the continuation of medical supplies for the victims.
- E.2.4 The safe removal of people and animals (largescale evacuation).
- E.2.5 Receiving and providing shelter to people and animals.
- E.2.6 Providing for the basic everyday needs of people and animals.

E.2 Registration of victims (Central Registration and Information Bureau or CRIB) and damage

The ability to record information about those affected and the damage, with the aid of one or more information systems.

E.2.1 Identification of those affected and registration of them according to distinction (including fatalities and animals) and types of damage.

E.3 Transport and storage of corpses

The ability to collect, transport and (temporarily) preserve corpses in (possibly temporary) mortuaries.

- Collecting and transporting corpses.
- E.3.2 Preserving corpses prior to burial/cremation.
- E.3.3 Collecting, removing and destroying dead animals.

COMBATING, ATTENTION TO FIRE SERVICES

Capabilities that contribute to an effective and efficient elaboration of the tasks in the area of the care to be provided by the fire services during the combating (response phase) within the system of disaster and crisis management, in addition to the general capabilities and the basic requirements for combating.

F.1 Combating source and emissions

The ability of the fire services to prevent the spread, and to reduce the cause and its associated, potentially escalating effects of a threat/incident.

- F.1.1 Fire fighting.
- F.1.2 Combating the effects of accidents with dangerous substances (accidental, intentional and natural).

F.2 Rescue

The ability of the fire services to provide assistance to people in threatening circumstances, to rescue them, and to protect property/ constructions.

- F.2.1 Technical assistance.
- F.2.2 Search and rescue (urban Urban Search & Rescue -, on land and in water).
- F.2.3 Making the location of the threat/incident accessible.

F.3 Detection of and advice about dangerous substances

The ability to compile an Advice about Dangerous Substances and to collect and distribute measurement data about the nature and extent of the affected area, as well as the manner of treating the affected people and emergency services affected/threatened.

- Detecting and identifying dangerous substances. F.3.1
- F.3.2 Compiling and (being responsible for) implementing an advisory document about how to handle dangerous substances (professionals and laymen).

F.4 Decontamination

The ability at the time of a threat/incident to decontaminate emergency service workers, victims and animals, vehicles and infrastructure as quickly as possible in order to prevent and/or limit the consequences of chemical, biological and/or radiological contamination.

- F.4.1 The deployment of apparatus and following protocols for the decontamination of people, animals, vehicles, machinery, constructions, etc.
- F.4.2 Reception of contaminated people, animals and movable matter.

G COMBATING, MEDICAL CARE

Capabilities that contribute to an effective and efficient elaboration of the tasks in the area of the care given by the medical services during the combating (response phase) within the system of disaster and crisis management, in addition to the general capabilities and the basic requirements for combating.

G.1 Emergency medical assistance

The ability at the time of a threat/incident to provide medical assistance to victims, within the necessary response time while maintaining the necessary medical quality.

- G.1.1 Triage.
- G.1.2 Treatment: the process of preparing victims at the location for transport through to definite stabilisation in hospital (incl. referral and transport).
- G.1.3 Medical scaling up.

G.2 Psychosocial assistance

The ability at the time of a threat/incident to receive victims and emergency service workers, who may be psychologically traumatised as a result of a threat/incident, and to provide them with assistance.

- G.2.1 Identification, referral and reception of those people affected.
- G.2.2 Starting treatment in acute cases.

G.3 Combating infectious diseases

The ability as far as possible to prevent infectious diseases, yet to identify the occurrence of infectious diseases and to combat the spread of these infectious diseases.

- G.3.1 Detection of source and contacts.
- G.3.2 Protection of (sections of) the population by means of e.g. vaccination and mass prophylaxis.
- G.3.3 Promoting hygiene in order to eliminate germs and dangerous substances as far as possible (this concerns medical hygiene, everyday life, personal and food hygiene).
- G.3.4 Isolation and quarantine.

G. 4 Environment and health

The ability to protect the population against environmental risks and to manage the health effects arising from an environmental disaster.

G.4.1 Expert health advice concerning dangerous substances (including contamination of the soil, water, air, food and drinking water, as well as exposure to (dangerous) waste material, vegetation and vectors).

G. 5 Continuity of care

The ability to allow the regular medical care to continue during a threat/incident in order to prevent 'substitute fatalities', as well as continuing to provide nursing care in the area affected and during an evacuation.

- G.5.1 Setting up alternative medical care facilities.
- G.5.2 Organising ways in which people who cannot be moved can still be cared for within the affected
- G.5.3 Other activities involved in the continuation of care.

H COMBATING, ATTENTION TO POLICE ASSISTANCE

Capabilities that contribute to an effective and efficient elaboration of the tasks in the area of police assistance during the combating (response phase) within the system of disaster and crisis management, in addition to the general capabilities and the basic requirements for combating.

H.1 Maintaining mobility

The ability to prevent stagnation in the emergency services.

H.1.1 Preventing and solving unsafe situations in the traffic, traffic jams or blockages by deploying statistical and dynamic traffic management.

H.2 Maintaining order

The ability to maintain public order and the penal system in the threatened area.

- H.2.1 Crowd management, crowd control, riot control.
- H.2.2 Preventing and/or stopping crimes (e.g. plundering, violence).
- H.2.3 Judicial policy (arrest, detention, accelerated proceedings).

H.3 Detection

The ability at the time of a threat/incident to detect criminal offences, as well as to collect and record data concerning the cause of the threat/incident, non-compliance with legislation and regulations, crimes (including plundering).

- H.3.1 Tactical detection, technical/forensic detection, intelligence, investigation measures.
- H.3.2 Technical accident investigation.

H.4 Intervention

The ability to intervene in threatening situations with the help of specialised (mainly national) units.

H.4.1 Police negotiations, specialist observation, specialist investigation applications, specialist operations, arrests and support (Special Interventions Service or DSI), explosives survey.

H.5 Guarding and security

The ability to guard and provide security to people, constructions, areas and services.

- H.5.1 Guarding and security; entry control.
- H.5.1 Cordoning off the affected area or scene of crime and protecting traces.
- H.5.3 Cordoning off and compartmentalisation of areas.

H.6 Identification of corpses

The ability at the time of a threat/incident to be able to identify dead victims.

H.6.1 Deployment of the National Forensic Investigation Team (LTFO) concerning the recording of the situation in which dead victims are found, and identifying them (identification).

COMBATING, ATTENTION TO THE ENVIRONMENT

Capabilities that contribute to an effective and efficient elaboration of the tasks in the area of care for the environment during the combating (response phase) within the system of disaster and crisis management, in addition to the general capabilities and the basic requirements for combating.

1.1 Care for the environment

The ability to assess the possible or actual consequences for the environment and public areas and to anticipate, or respectively act on these.

1.1.1 Environmental hygiene, water management, nature and landscape management, building and spatial management.

RECOVERY and AFTERCARE

Capabilities that contribute to an effective and efficient elaboration of the tasks for the benefit of aftercare and recovery, in addition to the general capabilities.

J.1 Recovery and rebuilding of infrastructure, buildings, nature and the environment

The ability to carry out damage and safety investigations and inspections in relation to infrastructure, buildings, nature and the environment, cultural inheritance.

- J.1.1 Developing and maintaining plans, procedures, programmes and systems for further damage limitation, recovery and rebuilding, and setting priorities thereby.
- J.1.2 Developing and maintaining training practise programmes.
- Coordination and management of the activities involved in recovery and rebuilding of the infrastructure.
- J.1.4 Establishment of expert teams and starting damage investigations.
- J.1.5 Carrying out inspections and investigations.
- J.1.6 Technical support in the development of operational recovery plans.
- J.1.7 Realisation and availability of temporary housing, and rehousing.
- J.1.8 Carrying out the recovery programme relating to infrastructure, building and public services.
- J.1.9 Rounding off the recovery programme.

J.2 Continuity and recovery of vital systems

The ability to maintain the continuity of, or to start up and carry out recovery work and in relation to the vital infrastructure.

- Developing and maintaining plans, procedures, programmes and systems for further damage limitation, recovery and rebuilding, and setting priorities thereby.
- J.2.2 Developing and maintaining training courses and practise programmes.
- J.2.3 Coordination and management in relation to recovery of vital infrastructure.

- J.1.4 Establishment of expert teams and starting damage investigations.
- J.1.5 Carrying out inspections and investigations.
- Technical support in the development of J.1.6 operational recovery plans.
- J.1.7 Realisation and availability of temporary housing, and rehousing.
- J.1.8 Carrying out a recovery programme in relation to vital products and services.
- J.1.9 Rounding off the recovery programme.

J.3 Recovery of economic activities

The ability to develop short-term and long-term recovery activities in relation to the business community, work opportunities and the functioning of financial-economic institutions.

- J.3.1 Developing and maintaining plans, procedures, programmes and systems for further damage limitation, recovery and rebuilding, and setting priorities thereby.
- J.3.2 Developing and maintaining training practise programmes.
- J.3.3 Coordination and management of the recovery of economic activities.
- J.3.4 Appointment of a team for setting up a recovery programme.
- J.3.6 Being responsible for creating funds.
- J.3.7 Being responsible for materials, equipment, people, technical advice.
- J.3.8 Setting up an information and advice centre.
- J.3.9 Carrying out a recovery programme for economic activities (including substitute work opportunities).
- J.3.10 Rounding off the recovery programme.

J.4 Recovery of community activities

The ability to develop short-term and long-term recovery activities in relation to the functioning of society.

This may involve the following: continuity of education, continuity of everyday economic life, promotion of social cohesion in society, reception and care of livestock, animal health and welfare, funerals and memorials.

Developing and maintaining plans, procedures, programmes and systems for further damage limitation, recovery and rebuilding, and setting priorities thereby.

- Developing and maintaining training courses J.4.2 and practise programmes.
- J.4.3 Coordination and management of recovery of community activities.
- Appointment of a team for setting up a recovery J.4.4 and aftercare programme.
- Population survey. J.4.5
- J.4.6 Being responsible for creating funds.
- J.4.7 Being responsible for materials, equipment, people, technical advice.
- Setting up an information and advice centre. J.4.8
- J.4.9 Carrying out a recovery programme for community activities.
- Rounding off the recovery and aftercare J.4.10 programme.

J.5 Health investigation after threat/incident

The ability to carry out investigations into people, as well as corpses and dead animals, following a disaster or crisis for the benefit of public health, or for the purpose of scientific or social objectives.

- J.5.1 Monitors of Public Health, surveys by groups, individual research.
- Providing (psycho) social and (psycho)somatic J.5.2 aftercare (reception and care).
- J.5.3 Carrying out monitoring of bio-effects, survey according to a list of questions or individual medical investigations.
- J.5.4 Carrying out animal surveys.
- Rounding off the aftercare programme. J.5.5

J.6 Judicial investigation into threat/incident

The ability to detect possible criminally punishable offences carried out during the threat/incident subsequently, as well as to collect and record data concerning the course of the threat/incident and the explanation of this.

- J.6.1 Tactical detection, technical/forensic detection, intelligence, investigation measures.
- Obtaining and analysis of written, verbal and J.6.2 image-recorded material.
- Formation of judgment concerning the J.6.3 punishment of individuals, possibility for detection and prosecution, etc.

Blank format for capabilities that appear immediately from the scenario and scoring

Go through the scenario and the scoring with additional explanations and make a note of the capabilities that these are explicitly or implicitly addressed in these documents.

Part of the document	Explicitly or implicitly cited capabilities	Possibly to be increased (Y/N)
Criterion 1.1		
Criterion 1.2		
Criterion 2.1		
Criterion 2.2		
Criterion 2.3		
Criterion 3.1		
Criterion 4.1		
Criterion 5.1		
Criterion 5.2		
Criterion 5.3		
Likelihood		
Description of scenario		

Blank format for the details of prioritised capabilities

Which capability/task/measure does this involve?	
Describe in broad details what should happen in order to increase the capability	
What are the arguments for increasing this capability (bearing in mind the expected developments)?	
What are the arguments against increasing this capability?	
What is the (social or security) gain of increasing this capability?	
Which organisation is responsible for the (realisation of the) capability (e.g. Ministry; provinces; security or police regions; municipalities; private parties; citizens; not clear)?	
Which organisations should be involved in the realisation of the capability (Ministry, regions, municipalities, private parties, citizens)?	
Are there relevant international developments (EU, UN, NATO, bilateral, none, unknown)?	
Is vital infrastructure involved?	
Can this be linked up with existing policy or is new policy required?	
What is the order of extent of development costs of the capability? (up to € 50,000; 50,000 - 100,000;100,000 - 500,000; 500,000 - 5 million; more than 5 million)	
What is the order of size of the annual fixed (management and maintenance) costs of the capability? (up to € 50,000; 50,000-100,000; 100,000-500,000; 500,000-5 million; more than 5 million)	
What stands in the way of realisation of the capability? (finances, development period, priorities, lack of political urgency, lack of agreement between crucial parties)	

Final report of capability analysis and input for text of findings report

The following text describes what the contents of the final report of the capability analysis should comprise.

Background: contents findings report On the basis of the final report of the capabilities working groups, a Head Group from the IWNV writes the findings report.

The findings report contains (see the report from last year) the following sections:

- Introduction (to be written by Head Group from the IWNV)
- Scenarios and outcome of the National Risk Assessment (on the basis of input from the Network of Analysts)
- Orientation of capabilities (on the basis of input of you, capability analysis groups)
- Agenda-settings advice (by Head Group from the IWNV)
- Appendices

Core: Contents of final report capability analysis working groups The final report should contain at least the following three elements: 1) report of the process and the yield of the capability analysis; 2) a written proposal that can be used as input for the findings report; 3) Appendices.

Layout of final report of the capabilities working group: 1) report of the process and the yield of the capability analysis

- Short introduction (about which scenario this entails)
- · Description of the process followed (steps, data, any points of concern)
- · Description of the organisations/experts involved (and any points of concern) with reference to Appendix with completed format
- Description of the identified capabilities that may be increased (the inventory) with referral to the underlying Appendices that were collected/compiled during the process (completed Excel files, documents supplied, reports, etc.)
- Description of the prioritised capabilities (with referral to the Appendices)
- Details of the prioritised capabilities (with referral to the Appendices)
- A substantiated recommendation relating to the question as to whether the scenario, the National Risk Assessment and/or the text proposal for the findings report about the capability analysis should remain confidential or can be published
- Any points of learning in relation to the method and set-up of the process

2) A text proposal that can serve as input for the findings report

- · The text proposal that serves as orientation of capabilities in the findings report (between 1 and 4 A4 sheets; for example, see the 2010 findings report) should contain the following elements:
 - Preamble: recommendation about whether or not to publish
 - Introduction (may be concise)
 - · Inventory of prioritised capabilities, possibly with reference to those capabilities which have not received priority (1-2 A4 sheets)
 - Concise description of the existing policy in order to indicate that priorities are not held in a vacuum, that a great deal is already happening with regard to the subject, and to sketch out the context for the priorities. (1-2 A4 sheets)

3) Appendices

Items for consideration:

What happens to the final report?

- The final report is not published
- The final report is made available to the Head Group, so that this group can see whether there are any cross connections between scenarios and be able to attain the complete agenda-setting recommendation.
- The final report is not sent to the IWNV or the Steering Group; the IWNV and Steering Group reach their decision according to the findings report and the concept letter to the House of Representatives.

Who should be able to read the final report: classification and confidentiality?

- Give clear indication which passages or Appendices in the final report are classified and should be treated as such.
- · Make a version of the final report without classified
- The complete final report must be able to be read by the Head Group. The members of the Head Group will sign confidentiality agreements (not all members of the Head Group have been screened). This will enable state secret texts to be made available to the Head Group.
- The text proposal used as input for the findings report may not be classified as state secret, department confidential is possible: the findings report must be able to be discussed by the IWNV and the Steering Group.

- The text proposal that is used as input for the findings report should be written so that it is suitable for publication; the MR will decide whether the texts relating to a scenario and its associated capability analysis can be published.
- Additional information required for the successful decision-making by the MR, but which is not suitable for publication, will be marked as such and placed in a separate section.

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