



Swedish Civil
Contingencies
Agency

Strategic challenges for societal security

Analysis of five future scenarios



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Swedish Civil Contingencies Agency (MSB)

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Layout: Advant Produktionsbyrå AB

Print: DanagårdLiTHO

Order No: MSB585 - June 2013

ISBN: 978-91-7383-363-9

Foreword

To predict the future is difficult, yet we must try. To this end we must employ systematic methods and enlist the help of many parties. A big thanks to everyone who has contributed to this work!

Strategic foresight is a way of approaching several problems simultaneously. First, we need to identify key areas where the decisions we make today will impact society's development. Second, we need to identify risks, threats and difficulties that can either be averted through immediate prudent action, or against which we can prepare ourselves.

Society is changing. The vantage point from which we view the world today will not be the same tomorrow. MSB's vision – a safer society in a changing world – demands that we ask questions about the future. Although we cannot predict exactly how tomorrow will look, we can impact the future development of society through our actions today.

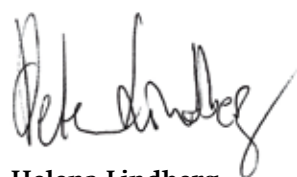
This report is part of MSB's goal to actively engage in preparations for the coming future. The report highlights ten overall, strategic challenges for societal security. By addressing these challenges in the right way, we will improve our ability to manage future emergencies and crises, from everyday accidents to major disasters and wars.

The report is aimed at actors operating within societal security in general and at those within this field working with strategic issues and long-term planning in particular. Hopefully the report will give rise to new thoughts and discussions. For MSB, the report shall inspire and support efforts to develop a comprehensive strategy for societal security.

The task of creating a safer society in a changing world has to be an inclusive effort, since all of us – from the individual to society, from private companies and voluntary organisations to the public sector, from local to national administration – are involved in shaping the future.

Many actors, agency representatives, municipalities, companies, universities and different organisations have contributed significantly to this report by participating in MSB's process of strategic foresight. A special thanks to all of you. Without your participation, this report would never have been what it is today. And without your continued participation and the participation of others in the shaping of our future, we will never achieve our vision of a safer society in a changing world.

But we have to hurry! One of the most important experiences gained from disruptive events is this: Never put off till tomorrow what you can do today!



Helena Lindberg
Director General
Swedish Civil Contingencies Agency (MSB)

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Summary

This report presents an analysis of how societal security could be affected by different possible future developments depicted in the five scenarios for society in 2032 previously presented by the Swedish Civil Contingencies Agency (MSB).¹

Future societal security preparedness can be affected by developments in society in terms of the ability of public authorities to govern and coordinate preparedness work, the opportunities for collaboration within the field, access to resources, the conditions for communication between authorities and the general public, and the knowledge and expertise of relevant actors. In addition, the future character of the emergencies and crises managed within the field of societal security will be impacted by different developments.

In order to maintain a safe society in a constantly changing world, the field of societal security has to continue to develop. Based on the analysis of how societal security is affected by different possible future developments, MSB has identified ten strategic challenges. These challenges are of long-term strategic importance with regard to continuing efforts to uphold societal security.

The ten strategic challenges are:

1. Do not lose confidence in public institutions
2. A safe society communicates
3. The individual's preparedness is essential
4. It is possible to more effectively prevent accidents
5. Vital societal functions must always be upheld
6. Information and cyber security concerns everybody
7. Manage the dependency on products and services from abroad
8. Utilise existing resources in a better way
9. Transnational challenges require transnational cooperation
10. Without climate change adaptation, vulnerability will increase

Some of these challenges may seem less relevant to deal with today, but may have disproportionately large consequences in the long run if proactive initiatives are not prioritised. This applies particularly to the degree of confidence and trust in public institutions and an adequate adaptation to climate change.

1. Swedish Civil Contingencies Agency (2012), *Framtida utveckling som kan påverka arbetet med samhällsskydd och beredskap* (Future developments that could affect the management of societal security), MSB 383.

However, with the future also come new opportunities. New technology that enables early risk detection and warning is but one example. Other opportunities that may create a safer society include a more evolved social commitment, with more efficient use of voluntary resources and a more widespread commitment to safety and security at the individual level.

Common to these challenges and opportunities is that society's resilience increases if these are successfully dealt with. One will never be able to predict everything that can happen, but through a more resilient society, one will be better able to withstand and cope with unforeseen threats and challenges.

Introduction

1. Introduction

This report presents an analysis of how societal security could be affected by various possible future developments. The analysis has been carried out within the framework of MSB's strategic foresight.

1.1 MSB's strategic foresight analysis

MSB's strategic foresight analysis focuses on issues within the field of societal security with an approximate time perspective of up to twenty years.

The aim of MSB's strategic foresight analysis is to support strategy formulation and long-term planning.

1.2 About this report

This report presents an analysis of how societal security² could be affected by various possible future developments.³

The analysis is part of a process that has been presented by MSB previously.⁴ Previous work includes five different scenarios for society in the year 2032.⁵ These scenarios have been used to analyse consequences of different future developments for societal security. The analysis includes a discussion of how the field of societal security would need to develop in order to best meet the demands of a changing society. The conclusions of the analysis consist of ten strategic challenges. These challenges highlight areas of long-term strategic importance for future societal security.

1.3 Purpose and target group for the work

The purpose of the work presented in this report is, in accordance with the aim of MSB's strategic foresight, to support strategy formulation and long-term planning, both that of MSB and that of other actors involved in issues related to societal security. Thus, aside from MSB, the target group encompasses the Government, Government Offices and parts of other agencies, municipalities and county councils working with protection against accidents, emergency preparedness and civil defence.

For MSB's part, the analysis is intended to provide support in the ongoing efforts to produce a comprehensive strategy for societal security.⁶ The report should also constitute support for other forward-looking initiatives at MSB.

2. Societal security refers to MSB's entire operational area that, according to the agency's instructions (2008:1002), is comprised of protection against accidents, emergency preparedness and civil defence.

3. The report is a somewhat modified version of a report that constituted a presentation to the Government in April 2013, in accordance with MSB's Appropriation directions for budget year 2013, see Swedish Civil Contingencies Agency (2013) *Övergripande utmaningar för samhällsskydd och beredskap*, Ref.no. 2012:1265.

4. Swedish Civil Contingencies Agency (2012), *Framtida utveckling som kan påverka arbetet med samhällsskydd och beredskap (Future developments that could affect the management of societal security)*, MSB 383.

5. Ibid. The five scenarios have been translated into English, see Swedish Civil Contingencies Agency (2013) *Five challenging future scenarios for societal security*, MSB 543, available at MSB's website, www.msb.se.

6. Swedish Civil Contingencies Agency (2012), *Inriktning för området samhällsskydd och beredskap; Andra delrapporteringen (Comprehensive strategy for societal security; Second interim report)*, Ref. no. 2012-3618.



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1.4 Reading instructions

It is not necessary to have read the five scenarios for society in 2032 in order to understand the line of reasoning followed in this report. Nevertheless, anyone wishing to form a more independent view of the different scenarios' consequences, or interested in scenario methodology, are advised to read the scenarios and study the scenario matrices in the report presented in 2012.⁷

Chapter 2 describes the difficulties associated with studying the future, as well as the methodology used in the process of analysing the five scenarios. In order to obtain a clear picture of how the analysis was conducted and how MSB has reached the conclusions presented, a reading of this chapter is recommended.

Based on the five scenarios, chapter 3 presents an analysis of consequences that future developments might imply for societal security. This analysis of consequences consists of two parts. In the first part, consequences for future societal security preparedness work are identified. The second part identifies consequences that relate to the character of future emergencies and crises.

Chapter 4 is a presentation of the analysis' conclusions in the form of ten strategic challenges.

Finally, in Chapter 5, the report is rounded off with a number of concluding reflections on the challenges and opportunities that have emerged during the process of analysis.

7. Swedish Civil Contingencies Agency (2012), *Framtida utveckling som kan påverka arbetet med samhällsskydd och beredskap* (Future developments that could affect the management of societal security), MSB 383. The five scenarios have been translated into English, see Swedish Civil Contingencies Agency (2013) *Five challenging future scenarios for societal security*, MSB 543, available at MSB's website, www.msb.se.

Material and methodology

2. Material and methodology

MSB's strategic foresight analysis is a work process under development. The elaboration and documentation of methodology is therefore of central importance. This chapter is aimed at those who are interested in knowing how MSB has conducted the analysis and reached the conclusions presented in this report.

2.1 Departure points

2.1.1 On studying the future

There is an inherent contradiction in predicting the unknown. It would appear to be especially difficult to predict the major upheavals, those that alter society in a radical fashion. Examples from the past 20 years speak to this fact: The dissolution of the Soviet Union, the dotcom crash, 9/11 and now the latest financial crisis. The predictions that were made prior to these events taking place often turned out to be grossly misleading. The future is difficult to predict, particularly in cases where human behaviour can affect the outcome. There is ample research data to argue that predictions from experts within areas where human influence has a very significant impact, such as politics, are even more erroneous than forecasts made by knowledgeable laymen. This despite the fact that the predictions described trends, often in short time intervals of months to a few years.⁸

This provides the impetus in foresight studies to employ an *explorative* approach instead of, or in addition to, forecasts. As an alternative to trying to create a map of how the future will most likely look, well-founded data in the form of various future scenarios can be used in the analysis. Different images of the future can also highlight gaps in knowledge and make it easier to evaluate alternative decisions against several possible futures and outcomes.⁹

Creating explorative scenarios, where each scenario describes a possible image of the future, is a way of showing the alternative developments that the future may bring.¹⁰ Explorative scenarios are not based on probability but describe possible futures. This means that they do not run the same risk of becoming obsolete as in the case of individual forecasts. There is certainly little chance that the exact future as described in a single scenario will occur, but a spectrum of different scenarios can be combined to show the range of possible outcomes.¹¹ The challenge in foresight studies is to cover as many different possible futures as can be achieved through the development of different scenarios. With this approach, the idea of what the future will look like is challenged instead of the prevailing picture being taken for granted.¹²

8. Tetlock (2002), *Theory-Driven Reasoning about plausible Pasts and Probable Futures in World Politics*, in Gilovich et al (ed.) (2012), *Heuristics and biases: the psychology of intuitive judgement*, Cambridge University Press, New York; as well as Makridakis and Taleb, (2009), *Living in a world of low levels of predictability*, International Journal of Forecasting, no. 25, 2009.

9. Dreborg (1996), *Essence of Backcasting*, Futures, no. 9, 1996.

10. Dreborg (2004), *Scenarios and Structural Uncertainty*, doctoral thesis at Royal Institute of Technology, Stockholm.

11. Wright and Cairns (2011), *Scenario thinking: Practical approaches to the future*, Palgrave Macmillan, Basingstoke.

12. For a more detailed discussion of future studies, uncertainty and probability, see Swedish Civil Contingencies Agency (2012), *Hur kan man studera framtiden? (How can we study the future?)*, Ref. no. 2009:8495.

2.1.2 Future conditions and future emergencies and crises

A departure point for MSB's strategic foresight analysis is a model that was presented in 2011.¹³ Developments in society can have consequences for societal security in a variety of ways. The conditions for actors to conduct their operations may change, and the character of emergencies and crises may develop. Certain types of emergencies or crises may become more or less frequent. In addition, the appearance of entirely new types of emergencies and crises may pose new challenges.

One way to describe this is to distinguish between

- *future conditions* for societal security – which affects the ability to prevent, prepare for, manage and learn from emergencies and crises.
- *future emergencies and crises* – which the actors within societal security shall prevent, prepare for, manage and learn from.

This is illustrated in the schematic subdivision in Figure 1.

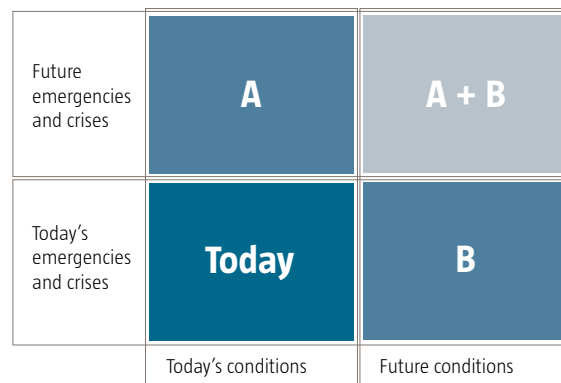


Figure 1. Future conditions and future emergencies and crises

The risk and vulnerability analyses conducted regularly by municipalities, county councils and government authorities, focus mainly on today's emergencies and crises in relation to today's conditions. This also applies to the National risk assessment of Sweden 2012 recently presented by MSB.¹⁴ These analyses are thus found in the box Today.

MSB's strategic foresight analysis focuses instead on how emergencies and crises managed within societal security may appear in the future (box A) but also how the conditions for managing these events may change (box B). The strategic foresight analysis strives to occupy box A+B, where future emergencies and crises are analysed against future conditions.

13. Swedish Civil Contingencies Agency (2011), *MSB:s långsiktiga strategiska analys – genomfört och planerat arbete (MSB's strategic foresight analysis – implemented and planned work)*, Ref. no. 2009:8495.

14. Swedish Civil Contingencies Agency (2013), *The Swedish National Risk Assessment 2012*, MSB 556.

2.1.3 Five scenarios for society in 2032

In order to create a basis for MSB's strategic foresight analysis work where the many uncertainties surrounding the future can be handled (see Section 2.1.1), MSB has, in an earlier stage of the process, chosen to use an explorative scenario method.¹⁵

MSB has developed five different scenarios for society in 2032. The scenarios are constructed on the basis of an overarching analysis structure with six areas: politics, economics, population, information and communication, climate, and technology.

The five scenarios have been named:

Scenario 1 – A growing population and deteriorating public health

Scenario 2 – Weak economy, high unemployment and social unrest

Scenario 3 – Accelerating climate change and rising oil prices

Scenario 4 – The threat of terrorism in a world of conflict

Scenario 5 – Antibiotic-resistant bacteria spread across the world

Together, the five scenarios illustrate a range of possible outcomes in relation to different future developments within areas of importance to the field of societal security. The scenarios are not designed to approximate the most likely developments and should not be viewed as forecasts. The scenarios are employed to illustrate the uncertainty that is associated with the future and to which societal security must relate.¹⁶

For a detailed methodological description of the scenarios' construction, and to view their contents, see the report presented by MSB's strategic foresight analysis in 2012.¹⁷

2.2 Scenario analysis

The five scenarios for society in 2032 have been used to investigate how different future developments could impact on societal security. It is important to remember that the uncertainties illustrated by the scenarios by no means have disappeared in this aggregation. The scenarios have been used as an analytical tool and the result should not be seen as a forecast.

2.2.1 Questions of analysis

The analysis was based on the following questions:

- What are the consequences of the developments described in the scenario for the field of societal security?
- How would the field of societal security need to develop if society looked like the scenario in question?

15. Swedish Civil Contingencies Agency (2012), *Framtida utveckling som kan påverka arbetet med samhällsskydd och beredskap (Future developments that could affect the management of societal security)*, MSB 383.

16. Swedish Civil Contingencies Agency (2012), *Hur kan man studera framtiden? (How can we study the future?)*, Ref. no. 2009:8495.

17. Swedish Civil Contingencies Agency (2012), *Framtida utveckling som kan påverka arbetet med samhällsskydd och beredskap (Future developments that could affect the management of societal security)*, MSB 383.

2.2.2 Delimitations

The scope of the analysis is limited by the developments described in the five scenarios. The scenarios describe developments on an overall societal level and within many different areas. The overarching character of the scenarios means, however, that not all aspects of societal security are covered. The analysis has sought a wide coverage and has focused on issues of a strategic and society-wide nature rather than more specific issues.

Therefore, the list of challenges presented in this report does not claim to provide a complete picture of all the challenges that may exist in the field of societal security. Within MSB's strategic foresight analysis, ongoing in-depth studies are being conducted within various areas in order for the Agency to obtain a more complete picture of the challenges ahead.

2.2.3 Data for analysis – internal and external participation

Several workshops have provided the analysis with valuable input as well as necessary support and validation of the results. Approximately 160 people active in different ways within the field of societal security, including representatives from MSB, central authorities, municipalities, county councils, voluntary organisations, companies and universities, have contributed to the analysis through participation in five workshops conducted during 2012.¹⁸ In addition, many experts at MSB have been consulted over the course of the analysis work.

2.2.4 From analysis of single scenarios to aggregate analysis

With input from the workshop discussions, each of the five scenarios has been analysed based on the questions in section 2.2.1. Each scenario has been examined both in terms of consequences for societal security, and in terms of development needs resulting from the scenario.¹⁹

In the next step, a compilation and aggregation of the individual scenario analyses has been made. At this stage, additional sources were used to better illustrate the line of reasoning.²⁰ The aggregated analysis therefore presents all five scenarios' consequences on a more general level, as well as overall strategic challenges resulting from this analysis.

18. Workshops were conducted with MSB's senior staff in May 2012, Region Skåne in May 2012, the County Administrative Board of Stockholm in October 2012, Sörmlandskustens räddningstjänstförbund (Sörmland Coast Rescue Service Association) in November 2012, and in conjunction with the meeting "Strategic talks" held in November 2012 as part of MSB's efforts to develop a general strategy for societal security.

19. The individual scenario analyses are in the form of five memoranda: Swedish Civil Contingencies Agency (2012), *Analysis of scenario 1 – A growing population and deteriorating public health*, Ref. no. 2012:1265, 03/12/2012; *Analysis of scenario 2 – Weak economy, high unemployment and social unrest*, Ref. no. 2012:1265, 03/12/2012; *Analysis of scenario 3 – Accelerating climate change and rising oil prices*, Ref. no. 2012:1265, 03/12/2012; *Analysis of scenario 4 – The threat of terrorism in a world of conflict*, Ref. no. 2012:1265, 03/12/2012; and *Analysis of scenario 5 – Antibiotic-resistant bacteria spread across the world*, Ref. no. 2012:1265, 21/11/2012.

20. For example, Royal Swedish Academy of Engineering Sciences (IVA) (2008), *Framsyn för krisberedskap – När krisen kommer (Foresight for emergency preparedness – When disaster strikes)*; Swedish Civil Contingencies Agency (2012), *Underlag inför nästa försvarspolitiska inriktningsbeslut (Documentation for the next defence policy decision)*, ref. no. 2012-3275; Swedish Rescue Services Agency (2008), *Framtidens risker och säkerhetsarbete (Future risks and security work)*; and Greater Stockholm Fire Brigade, Greater Gothenburg Fire and Rescue Service and Region South Fire and Rescue Service (2012), *2030 – A Fire Department in Time?*, Ref. no. 3001.2012.03675.

Figure 2 below illustrates the path from single scenario analysis to the aggregated analysis.

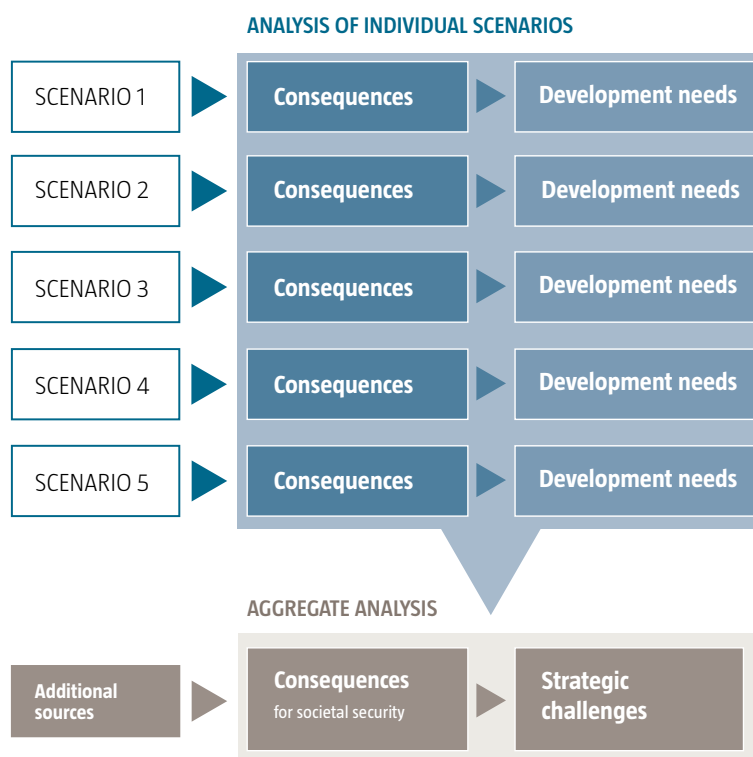


Figure 2. From analysis of single scenarios to aggregate analysis

The compilation of results from the five different scenario analyses is comprised of two areas; consequences for societal security, and strategic challenges.

The first of these, the analysis of consequences in turn consists of:

1. consequences for future societal security preparedness, and
2. consequences for future emergencies and crises.

These two types of consequences affect and co-vary with each other. A change in societal security preparedness can have an impact on the risk of emergencies and crises and new risks affect the safety measures that need to be undertaken. The two parts of the analysis therefore overlap in certain cases. MSB has nevertheless chosen to study the consequences from both these perspectives in order to conduct a more thorough and comprehensive analysis.

The first part of the analysis of consequences, which deal with consequences for societal security preparedness, has been further broken down into five sub-areas:

- The ability of public authorities to **govern and coordinate** societal security preparedness
- The opportunities and need for **collaboration**
- Access to **resources**
- The conditions for **communication with the general public**
- **Knowledge and expertise** of relevant actors

This structure of five sub-areas has been developed during the course of the analysis, based on what would be a useful way to organise the input data. The structure is inspired by the conceptual model developed within the framework of MSB's ongoing work to develop a comprehensive strategy for societal security.²¹

The second part of the analysis of consequences, which deals with consequences for future emergencies and crises, compiles the results from the individual scenario analyses related to the character and occurrence of future emergencies and crises, from everyday accidents to major disasters and wars. The emergencies and crises discussed in this part are those that are more clearly affected in different ways by the societal development in the scenarios; emergencies and crises that may thusly require more or less focus and resources in the future.

During the course of the analysis, the list of emergencies and crises has been compared with other data from MSB in order to ensure that the analysis does not overlook emergencies and crises that should be included.²² The aggregate analysis of consequences is presented in Chapter 3 of this report.

This leads on to the final stage of the analysis. Based on the analysis of consequences ten overall strategic challenges have been identified. These challenges, which can be said to constitute the analysis' conclusions, highlight areas of long-term strategic importance for future societal security.

The challenges are presented in Chapter 4. Each challenge is described with clear references to the specific lines of reasoning in Chapter 3 to which the challenge is primarily linked. This increases the opportunity for the reader to be able to form an opinion on how well the described challenge corresponds to the identified consequences.

21. The conceptual model is a visualisation of the constituent parts of the field of societal security. Swedish Civil Contingencies Agency (2012), *Inriktning för området samhällsskydd och beredskap; Andra delrapporteringen (Comprehensive strategy for societal security; Second interim report)*, Ref. no. 2012-3618.

22. For example, the 24 risks that were initially identified in the work with the national risk assessment. Swedish Civil Contingencies Agency (2011), *Ett första steg mot en nationell riskbedömning: Nationell riskidentifiering (A first step towards a national risk assessment: National Risk Identification)*, MSB 336; along with the analysis in the report Swedish Civil Contingencies Agency (2010), *Olyckor och kriser (Emergencies and crises) 2009/2010*, MSB 0170-10.

2.2.5 Methodological crossroads

Conducting a coherent analysis of five mutually different scenarios involves facing several methodological choices. One of the more difficult is how the analysis of individual scenarios should be weighed against each other. Either each line of reasoning can be presented individually, or alternatively only those arguments that are valid for all five scenarios are presented. A third option is to compare the differences between the various scenarios. The advantage of the first method is that individual differences, which on their own have a major impact on societal security, emerge clearly; the advantage of the second method is that the results are more generally applicable than the first. The advantage of the third method is that all the differences become evident. This report primarily follows the first method. In this way the conclusions can be said to be valid in the whole range of outcomes.

However, these more generally applicable lines of reasoning in the report are contrasted with individual differences in the scenarios in cases where these differences could overturn the reasoning. This is in order to clarify under which circumstances a result is valid or not. However, during the course of the analysis it has often been apparent that the results from the individual scenario analyses have been consistent with each other. The same challenges are often identified in more than one scenario, but the need for, and difficulty in, addressing said challenge can vary. It is difficult to determine with certainty why the same challenges occur in different scenario analyses. Since the analyses are essentially based on the variables chosen in the construction of the scenarios, it can be argued that the variation was too small. At the same time, the scenarios have been perceived to be very different by most readers and participants in workshops. Therefore, it could be the case that there are certain areas within societal security that are important regardless of how the future turns out.

The strategic challenges are valid in all five scenarios, albeit to different degrees. This implies that there is a sound basis for claiming that the challenges presented are of great importance for societal security in the long term, regardless of how the future will look.

**Consequences of future
developments for
societal security**

3. Consequences of future developments for societal security

This chapter presents an analysis of how the developments described in the scenarios affect societal security. The analysis is two-fold. First, consequences for future societal security preparedness are presented. Thereafter, consequences for future emergencies and crises are presented, i.e., how accidents, crises and wars would be affected by the scenarios.

For it to be easier for the reader to follow the reasoning in this chapter without having read the five scenarios, individual scenarios are not referred to in the text. The sections are instead divided into different subsections with headings that describe the specific development in the scenarios on which the analysis section in question is based.

3.1 Consequences for societal security preparedness

The analysis of how societal security preparedness is impacted by the scenarios focus on five areas:

- The ability of public authorities to **govern and coordinate** societal security preparedness
- The opportunities and need for **collaboration**
- Access to **resources**
- The conditions for **communication with the general public**
- **Knowledge and expertise** of relevant actors

This structure of five areas is partly based on material from the individual scenario analyses, and partly on MSB's ongoing work to develop a comprehensive strategy for societal security.²³ (See Section 2.2.4 for more information on methodology and the identification of areas.)

3.1.1 Governance and coordination

The ability of public authorities to govern and coordinate societal security preparedness could be affected by a variety of possible developments.

Private ownership and management of vital societal functions

The degree of private ownership and management of vital societal functions is of great importance for public authorities' ability to govern and coordinate work in the field of societal security. The five scenarios together paint a wide spectrum of possible developments; from a development involving greatly increased privatisation, through scenarios where the situation is similar to that of today, to a development where many societal functions that were previously privatised have been returned to the public sector.

23. Swedish Civil Contingencies Agency (2012), *Inriktning för området samhällsskydd och beredskap; Andra delrapporteringen (Comprehensive strategy for societal security; Second interim report)*, Ref. no. 2012-3618.

Much of these vital societal functions are today owned or carried out by private actors. Today's challenges regarding governance and coordination of societal security preparedness can become even more pronounced with continued privatisation. Before deregulation and outsourcing took place, critical infrastructure actors were usually more "comprehensive organisations" with well-defined responsibilities, such as Televerket (Swedish Telecommunications Administration) for telecommunications and SJ (Swedish Rail) for rail traffic. There were clear rules and processes for how responsibilities and authority should be allocated.²⁴ Today, responsibilities and the execution of vital societal functions are more fragmented, and multiple actors, private and public, operate at different levels.

The influence of private actors in different parts of society may continue to develop. In one of the five scenarios, many large corporations are more deeply involved in social and regional development issues. Would the corporate world in this future also take on a broader responsibility for safety and preparedness issues?

With increasing privatisation, specialisation and more fragmented responsibilities for different parts of the critical infrastructure, it may be difficult to achieve sufficient coordination. To some extent, there is a need for unified management of societal security preparedness. This management has to be based on a comprehensive societal perspective where the common good as well as critical dependencies and flows are taken into account. The public sector's ability to make demands on, and monitor societal functions from a safety and security perspective is influenced by the degree of privatisation. If private actors continue to own and operate vital societal functions, public authorities need to develop ways to govern and coordinate work in the field of societal security. (In addition to regulations, private-public partnership and collaboration is of course essential in this case, see section 3.1.2.) As many corporations that operate in Sweden might be multinational, there is also a need for closer cooperation between countries on issues relating societal security.

In one scenario, private ownership and execution of vital societal functions subsides. Such a development could also result in certain challenges for the ability of public authorities to govern and coordinate societal security preparedness. While the decision-making structures would become clearer, the diversity of activities and the complexity in the system of different organisations would still make it very difficult for public actors to have a sufficient overview and the competence needed to manage effectively.

Economic development

The state of the economy also affects the ability of public authorities to govern and coordinate societal security. In this area there are also many different possible developments which are depicted in the five scenarios.

In scenarios with reduced public resources, the authorities will not have the same ability to govern using economic instruments of control. If tax revenues and grants are reduced the public sector will have less financial resources to use as incentives to influence other actors.

24. Royal Swedish Academy of Engineering Sciences (IVA) (2008), *Framsyn för krisberedskap – När krisen kommer* (Fore sight for emergency preparedness – When disaster strikes).

Development of administrative and decision-making structures

The development of the public administrative organisation impacts the ability to govern and coordinate societal security. One scenario describes a new regional societal organisation with strong, larger counties. This development would likely affect the roles and division of responsibilities between different levels of society. The ability of public actors at different levels to govern may be affected if areas of responsibility are organised in a new way.

The development of the EU may also alter the division of responsibilities. The scenarios include both developments where EU influence increases significantly, and developments in which the EU is severely weakened. A development, where decisions on safety and security issues are increasingly taken at the EU level, implies new conditions for the management of societal security. In this event, Sweden would need to act in an EU context and try to influence other European actors to a much larger extent than is currently the case. If the EU is instead weakened, there should then be extended possibilities of a more independent national governance of societal security. This may then come at the expense of the possibility of influencing issues of a transnational nature in the EU context.

The degree of confidence in public authorities

Public trust and confidence in public authorities vary in the different scenarios. In a society with a high level of confidence, the general acceptance of demands and willingness to be coordinated should be higher than in a society with a lack of confidence in the government's ability and credibility.

3.1.2 Collaboration

The future development of society affects the conditions, as well as need, for collaboration between actors within societal security. This involves public, private and voluntary actors.

Technological development

New technical systems such as monitoring, warning and communication can facilitate a more effective collaboration. Above all, it is development within information and communication technologies that is relevant in this context. The five scenarios describe different degrees of progress within this area of technology, from a new "IT revolution" to stagnation. The opportunities to achieve common situation awareness during crises, and to compile and share information should increase with the development of information and communication technologies.

Collaboration within vital societal functions

Collaboration always takes place with the purpose of achieving a goal, such as developing the ability to deal with emergencies and crises. The purpose of the collaboration determines which actors will be involved and the forms this interaction will take.

The degree of privatisation within vital societal functions affects the range of actors that need to work together. In those scenarios where the operation of vital societal functions is largely conducted within the private sector, there must be a functional collaboration between private and public actors. It involves maintaining contacts

and networks, exchanging information and learning from each other. In two scenarios, the degree of privatisation increases, reasonably implying an even greater need for private-public partnership and collaboration.

In a society where many vital societal functions are undertaken by competing companies, the interest in collaborating and sharing information may be more limited. There could also be a clash of interest between national branches in multinational companies, where HQs may be situated outside Sweden. The prospects for private-public partnership and collaboration at the local level would likely be affected by such a development.

What would it mean for collaboration if the trend towards increased privatisation comes to a halt, and public ownership and management of vital societal functions instead increases? Such a development is described in one of the five scenarios. The conditions for collaboration would change with greater public involvement in vital societal functions. The need for collaboration, however, remains. The coordination activities between companies that are currently carried out based on market conditions, must instead be solved by authorities in cooperation.

Development of administrative and decision-making structures

The conditions for collaboration are affected by how the public administration is organised. New authorities with new responsibilities, or a development of the regional administration towards larger counties, can alter the forms of collaboration. The new regional organisation of the Swedish Armed Forces has implications for civil-military collaboration. The conditions for civil-military collaboration is affected both when it comes to military support to civil authorities in various crisis situations and within the context of civil defence.

The development of the EU is of great significance. The distribution of responsibilities and tasks between the EU's institutions and the national authorities affects collaboration with national counter-parties. A deeper European integration increases the need for collaboration between various actors in Europe.

Developments in the surrounding world

The conditions and need for international collaboration vary depending on developments in the world around us. The scenarios describe various developments that could increase the need for international cooperation on safety and security issues. In scenarios with more transnational infrastructure and increasing international interdependencies, there is a greater need to collaborate internationally. Climate change can impose a greater need for collaboration regarding adaptation measures and the handling of major natural disasters in Sweden and globally. An increased level of conflict in the world may also lead to a more extensive need for international cooperation, including the need for international interventions. At the same time, a trend towards a world of more conflicts could affect the prospects for international collaboration through the obstruction of cooperation between certain countries, organisations and political constellations.



3.1.3 Resources

The availability of resources within societal security is influenced by many different possible developments. Resources are not only found within the public and private sectors, but also within the voluntary sector, through individuals and outside of Sweden. Here, the analysis is limited to human and material resources.

Risk development

The risks faced by society in the future will not be exactly the same as those today. The need for human and material resources to protect against emergencies and crises will therefore change. All scenarios reflect developments that could affect emergencies and crises so that the demand for resources both increases in some areas and decreases in others. How emergencies and crises would be affected by developments in the scenarios is discussed in more detail in Section 3.2.

Economic development

Access to resources is largely dependent on the economic development of society. This varies in the scenarios, from high growth and a well-functioning economy, to economic instability and high unemployment. In scenarios where the economy of the public sector is weak, access to resources will be characterised by scarcity.

As described in one of the scenarios, economic development may differ between different parts of the country. This could mean that different parts of the country will have different access to resources. One example is an unequal distribution of infrastructure. Access to resources in the form of modern communications and infrastructure systems can determine what new services different parts of the population can benefit from. In the case of geographically limited access to new modern communications and infrastructure systems, certain segments of the population will not be able to use new technologies for monitoring, warning and communication. A worsening economic situation at the local level can also mean that some municipalities may find it difficult to provide equal and adequate protection against emergencies and crises.

In scenarios where the economy of the public sector is strained, the resources of private and voluntary actors, as well as those of the individual citizen, come to play a more important role in preventing and managing emergencies and crises.

The individual citizen's capacity may also vary with the economic development in different scenarios. If a large section of the population cannot afford the resources that may be needed to prevent and withstand different types of accidents and disruptions, the vulnerability of society will increase. Developments in some scenarios, where the economic conditions of the individual deteriorate, can lead to the emergence of gaps between those who can afford more security and those who cannot.²⁵ In the case of such a development, it becomes difficult to enhance society's capability during emergencies and crises through assuming that individuals will take personal responsibility for their own safety.

25. Already today, some security companies offer fire monitoring of residences. See Tjugofyra7, *Larmcentraler övervakar allt fler hem* (Emergency service centres monitor an increasing number of homes), Issue 15, September 2012.

In scenarios where the general standard of living increases, there is greater potential for the individual to access resources that may be needed to prevent accidents and withstand various disruptions and crisis situations.

Demographic development and health

Access to human resources is essential for society to deal with emergencies and crises. The demographic development is therefore relevant and different possible futures are depicted in the scenarios. In scenarios with rural depopulation the emergency services are challenged as readily available staff is essential. The emergency services may also face problems in a scenario where rural areas are becoming populated once again. The challenge then is to be able to perform more geographically widespread fire and rescue operations.

In one of the scenarios, more and more people choose to leave Sweden. The well-educated emigrate to other countries where the standard of living is higher. One possible consequence is that there is a shortage of human resources within organisations in the field of societal security. For example, a shortage of medical professionals and experts within various fields, such as hazardous substances and information security, can affect the ability to maintain security in society.

The availability of human resources within areas that are particularly vulnerable to the spread of infection or medical care could be affected by increased antibiotic resistance. According to certain studies, U.S. paramedics and firefighters are more often carriers of multi-drug resistant bacteria, MRSA.²⁶

Development of social values and social commitment

The availability of resources may be affected by social values and the degree of social commitment. In a society characterised by a lack of confidence in public authorities, it can be difficult to recruit enough competent staff. Access to voluntary resources when dealing with emergencies and crises is probably more limited in scenarios with a low level of trust and lack of social commitment. If social commitment instead increases, there will be more opportunities to use voluntary resources in societal security.

Technological development

The development and application of new technologies have implications for the availability of resources within societal security. Described in the scenarios are progress and development in the areas of materials (including nanotechnology), biotechnology, energy technology, and communications and information technology. Technological development can provide better positioning systems, sensors and early warning systems for, e.g., natural disasters, or increases the possibility of automatic warning messages in the case of accidents. Automation, robotics and other remote-controlled and intelligent machines can minimise the risk of exposure for emergency staff in risky operations, such as fire rescue or tunnel fires and the handling of hazardous chemical or biological agents or explosives.²⁷

26. Futurity, *Paramedics an easy target for MRSA*, www.futurity.org/health-medicine/paramedics-an-easy-target-for-mrsa/.

27. Greater Stockholm Fire Brigade, Greater Gothenburg Fire and Rescue Service and Region South Fire and Rescue Service (2012), *2030 – A Fire Department in Time?*, Ref. no. 3001.2012.03675; as well as Wikman-Svahn and Carlsen (2012), *Möjliga konsekvenser av framtida teknikutveckling för samhällsskydd och beredskap* (Possible consequences of future technological development for societal security), supporting data for MSB's strategic foresight analysis, Ref. no. FOI 2011-1032.

Development of the EU

The scenarios depict different futures in terms of the development of the EU. Where EU cooperation deepens there are more opportunities to share resources at a European.

A question that arose during the scenario analysis was how far the Swedish declaration of solidarity with other EU Member States, Norway and Iceland extends. In a future characterised by significant common transnational challenges, there may be situations where national resources are needed at several places simultaneously. An extensive need for support in another EU state at the same time as resources are needed to handle an emergency or crisis in Sweden might create certain sets of problems. What priorities should govern the use of resources in such cases?

3.1.4 Communication with the general public

Public authorities' communication with the general public can be affected by many possible developments. Communication is needed at all levels, both as part of the prevention of and in the management of emergencies and crises.

Technological development

Technological advances can provide new tools and platforms for communication. Although it is impossible to predict which specific technological solutions will be used as communication platforms in twenty years, the human will to communicate will probably continue to be high.

The ability of public authorities to engage in dialogue with citizens can develop with new technology. This new technology can make it easier to quickly absorb and disseminate information in conjunction with more acute crises.

Developments in information and communications technology are advancing in all scenarios, albeit to different degrees. The development and maintenance of communications infrastructure vary between the different scenarios. In one scenario, rural areas are neglected in terms of investment in communications infrastructure, which affects the conditions for communication between public authorities and those living in rural areas. In such instances, relying on only one or a few technical solutions for communication is problematic.

Communication habits and ability to assess information

The scenarios vary in terms of which sources of information people put their trust in, public authorities, personal networks or the mass media. This will affect the development of communication habits as well as which communication means people prefer to use.

A development towards increased individualism with different preferences among the general public in terms of communication means, such as internet, radio, or other new technologies, affects the conditions for communication. Even more so than today, it will be important for public authorities not to rely on only one or a few communication means.

A more heterogeneous population may also have implications for how information from authorities is interpreted and understood. Some scenarios depict increasing socio-economic differences in the population, as well as increasing disparities in education and literacy. Such a development implies that there will be significant differences in the individual's ability to assess the reliability of information and engage in dialogue with the authorities. In the case of accident prevention, this could mean that one of the groups to which a good communication channel is a high priority – the economically and socially vulnerable who are more likely to get hurt in accidents – will to an even greater extent constitute a group that is difficult to reach.

In addition, there will also be a risk that inaccurate information is disseminated, either intentionally or unintentionally. The overall ability of the population to evaluate the reliability of information is of great importance. In one of the five scenarios, large parts of the population have difficulty in distinguishing between PR from various interested parties and news distribution. What would such a development imply for societal security?

Development of social values

The key to successful communication is that there is trust and confidence between all those concerned. Crucial to communication between public authorities and the general public is the degree of confidence in public authorities and the degree to which authorities open up for dialogue with citizens. The scenarios depict various possible futures in this area. A societal development characterised by social unrest and wavering confidence in public institutions and services will have implications for communication. With increasing socio-economic inequality, segregation, and exclusion there is the risk that a communication rift will open up between the public sphere and individual citizens. This may lead to parts of society not trusting rescue services staff, failing to follow the advice and recommendations of authorities, or even choosing to do the opposite.

A society where confidence in public institutions is failing may also mean that parts of the public do not have an interest in communicating with public authorities at all. Confidence in traditional media may also wane, making it difficult to reach the general public through this channel. Many may come to rely more on information from opinion leaders and groups they identify with, for political, ideological or other reasons.

3.1.5 Knowledge and expertise

The knowledge and expertise of relevant actors (public, private, voluntary and individual citizens) in matters of societal security preparedness can be affected by many different possible developments. The existence of knowledge and expertise at various levels is critical for the prevention and management of emergencies and crises.

Technological and scientific development

The scenarios describe progress within science and technology in different areas. If technological and scientific advances can be translated into new knowledge and skills for actors involved in emergencies and crises, societal security can be

strengthened. How new technological opportunities for data collection will be used in the future will largely depend on how issues such as privacy and integrity are valued. New technology necessitates a discussion on ethical guidelines for its use.

Political and economic development

The economic development of society affects the ability of relevant actors to create and maintain knowledge and expertise in matters of societal security preparedness. A stable economic development create opportunities to build knowledge and expertise through investing in new technologies, conducting training programmes, initiating exercises, performing supervision, monitoring and evaluation.

The exchange of knowledge and access to certain expertise may vary with the degree of European and international cooperation. In a scenario where cooperation between the countries in Europe is more developed, certain expertise will likely be more readily available. Opportunities for cross-border collaboration in terms of research, the exchange of statistics and the development of skills can also be strengthened.

The scenarios depict different degrees of private and public ownership and execution of vital societal functions. In a society with many competing private providers within critical infrastructure, knowledge and expertise may benefit from increased diversity and greater redundancy. At the same time, the turnover of entrepreneurs represents a vulnerability, as accrued knowledge and expertise is lost. One consequence of a greater diversity of actors collaborating within vital societal functions may be that it becomes more difficult to perform comprehensive risk and vulnerability analyses. There is therefore a risk that knowledge regarding existing vulnerabilities in society decreases. That relevant actors are aware of each other's roles and responsibilities is therefore even more important in cases where multiple actors are involved in societal security preparedness. A prerequisite for effective crisis management is that those involved know who does what, as well as when their organisation's responsibility ends and another's begins.

Social development

The general level of education in society has implications for the range of knowledge and expertise that are available. In the scenario where the level of education rises and a larger portion of the population has undertaken a longer education, the opportunities to recruit qualified staff and experts in various fields increases.

Social development varies in the different scenarios. In some scenarios, socio-economic disparities grow, whereas in other scenarios, the general standard of living increases or the distribution of income becomes more even. Demographics also vary in terms of the proportion of elderly and the proportion of big-city dwellers. It is uncertain how the general level of security knowledge and expertise among the population is affected by these factors, and what this means for the individual's ability to respond to different kinds of disruptions. With a more heterogeneous population, the general public's knowledge and expertise are likely to vary more at the individual level.

Development of the perception of the individual's responsibility

The perception of what constitutes individual citizen and public sphere responsibility in terms of security, as well as expectations on public authorities in the event of emergencies and crises vary in the different scenarios. Thus, the individual's knowledge and skills, even at a general level, may differ between different scenarios. In those scenarios where the individual's responsibility for their own security is more clearly expressed, it is possible that risk awareness is greater and that people in general have a better knowledge of how to prevent accidents and cope in crisis situations. In the scenario where expectations on the public sector in the event of emergencies and crises are higher, the motivation of the individual to learn about safety and preparedness may be lower.

3.2 Consequences for emergencies and crises

The character of the emergencies and crises managed within the field of societal security will be impacted by different developments in the future. This section presents consequences of future developments for emergencies and crises, encompassing everything from everyday accidents to major disasters and war. The types of emergencies and crises covered in this section are those that have been deemed to be affected by developments in the scenarios. See Section 2.2.4 for further background on the selection of events and methodological considerations in this part.

3.2.1 Natural disasters

Developments in society affect future natural disasters, both in terms of occurrence and the ability to manage them.

Climate change and the adaptation and maintenance of infrastructure

Climate change is of great importance for the analysis of future natural disasters. Different levels of climate change are expressed within the five scenarios up until the year 2032. In scenarios where the pace of climate change follows the forecasts made in the latest report by the Intergovernmental Panel on Climate Change, (IPCC),²⁸ the number of natural disasters in 2032 is expected to be slightly more than that of today. In scenarios where climate change is more rapid, the likelihood of flooding, torrential rains, forest fires and landslides is significantly larger than today.

Vulnerability to natural hazards depends, in all scenarios, on how far along climate adaptation in society has come. In scenarios where buildings and infrastructure have not been sufficiently adapted to the changing climate, significant damage is caused by the increased incidence of high rivers, flooding, the storm-felling of forests, etc.

The scenarios vary in terms of the maintenance and development of new infrastructure as a result of economic development, among other factors. In the face of climate change, the lack of maintenance and climate change adaptation can lead to natural disasters becoming increasingly severe.

28. IPCC (2007), *Climate Change 2007: Synthesis Report; Summary for Policymakers*; Genève.

An increased risk of natural disasters in the world due to climate change may also have consequences for Sweden, in particular with regard to the need for transnational cooperation and operational support. An increased risk of natural disasters may also place new demands on equipment during international operations.²⁹

Technological development

In all scenarios, technological development affects the incidence and management of natural disasters. New technology can provide new opportunities in terms of both warning and management of disasters. One area of technology that can be of great importance for risk analysis is better forecasts and modelling. Computer development can mean an increase in precision with regard to the modelling of floods and landslides, including the consequences of these events.³⁰ In the long-term, improved forecasts and modelling may facilitate prevention and result in better physical planning for natural disasters. New building materials capable of handling a warmer or wetter climate may reduce the vulnerability to climate change. Technological developments may also generate better systems for the monitoring and control of forest fires, for example, through the use of unmanned aircraft and sensor technology.³¹

3.2.2 Heat waves

Future developments affect heat waves in terms of frequency, the vulnerability of the population to extreme heat and the ability to manage heat waves.

Climate change

Extreme temperatures in the form of heat waves are expected to become more common with climate change. For Sweden, the extremely hot periods that have thus far occurred every twenty years on average may, at the end of the century, occur every three to five years.³² The pace of climate change varies in the different scenarios. With increasingly rapid climate change, heat waves will come to represent a major challenge for society in the not too distant future.

Development of demography and public health

Extreme heat poses health risks for vulnerable groups, which means that demography and public health have an impact on the consequences of heat waves. Older people are more vulnerable to heat. That a larger proportion of the population in the future will consist of elderly people thereby reinforces the problems related to heat waves.³³

Deteriorating public health, as described in one of the five scenarios, can also make the consequences of heat waves more severe. Alcohol and certain drugs increase vulnerability to heat due to dehydration and a deterioration of the body's ability

29. Åhman et al (2012), *MSB:s internationella insatser – Fem framtidsscenarier (MSB's international operations – Five future scenarios)*, FOI-R-3556 – SE.

30. Wikman-Svahn and Carlsen (2012), *Möjliga konsekvenser av framtida teknikutveckling för samhällsskydd och beredskap (Possible consequences of future technological development for societal security)*, supporting data for MSB's strategic foresight analysis, Ref. no. FOI 2011-1032.

31. Ibid.

32. SMHI (2011), *Värmeböljor i Sverige (Heat waves in Sweden)*, Fact sheet 49 – 2011.

33. Rocklöv et al (2008), *Hälsopåverkan av ett varmare klimat (Consequences of a warmer climate – a Swedish perspective)*, Occupational and Environmental Medicine unit in Umeå reports, 2008:1, Climatools. Umeå University; Swedish National Institute of Public Health (2010), *Värmeböljor och dödlighet bland sårbara grupper – en svensk studie (Heat waves and mortality among vulnerable groups – a Swedish study)*, R 2010:12.



to regulate temperature. Certain conditions of illness leads to heat being perceived otherwise than normal, such as in the case of mental illness, dementia and diabetes. Some medication can affect the body's temperature regulation or raise the body's temperature, which increases the vulnerability of the individuals who are prescribed these drugs.³⁴

Climate change adaptation and technological development

Extreme heat can affect the functionality of critical infrastructure as, for example, servers and data processing centres could have problems with cooling and railway tracks can be affected by heat distortion.³⁵ (See Section 3.2.9 on the failure and disruption of certain vital societal functions).

The degree of climate change adaptation will have a major impact on the problems associated with heat waves. If construction, infrastructure and human behaviour are adapted to high temperatures, the ability to manage heat waves increases. In the scenarios, society's climate change adaptation varies, from having come a long way within most sectors, to being neglected.

Technological and scientific developments could reduce the negative effects of heat waves. Building technology is a key area when it comes to building future cities so that high temperatures are avoided. Improved forecasts, models and positioning systems can also increase the ability to handle heat waves through early warning.³⁶ Advances within pharmaceutical development and biotechnology could lead to new drugs with fewer side effects, which would reduce the vulnerability of large groups and thus society in relation to heat waves.

3.2.3 Fires

Developments in society affect future fires, both in terms of fire prevention and the ability to detect and fight fires.

Technological development

New technology offers many new opportunities to prevent, detect and fight fires. New and hopefully less flammable and combustible materials, automated detection systems and alarms can reduce accident rates and mitigate effects. Detection and control of fires can be facilitated with the help of autonomous systems in the form of robots. In the UK and South Korea, attempts are underway to use robots in fire-fighting.³⁷ In one scenario, major breakthroughs have been achieved in the field of energy technology. A transition from fossil and flammable fuels to new energy technologies may result in a reduction of certain types of fires. New technology can also, however, increase the risk of fire. Cellular plastic currently used in construction work is inexpensive but highly flammable.³⁸

34. Umeå University; Swedish National Institute of Public Health (2010), *Värmeböljor och dödlighet bland sårbara grupper – en svensk studie (Heat waves and mortality among vulnerable groups – a Swedish study)*, R 2010:12

35. Swedish Civil Contingencies Agency (2012), *Värmeböljors påverkan på samhällets säkerhet (Impact of heat waves on society's safety)*, MSB 362.

36. Wikman-Svahn and Carlsen (2012), *Möjliga konsekvenser av framtida teknikutveckling för samhällsskydd och beredskap (Possible consequences of future technological development for societal security)*, supporting data for MSB's strategic foresight analysis, Ref. no. FOI 2011-1032.

37. Ibid.

38. Greater Stockholm Fire Brigade, Greater Gothenburg Fire and Rescue Service and Region South Fire and Rescue Service (2012), *2030- A Fire Department in Time?*, Ref. no. 3001.2012.03675.

Development of construction and housing

Future construction and housing affect future fires. In one scenario, the bulk of the population moved to one of the three major metropolitan areas, resulting in an increased density of construction and overcrowding. Building underground is also increasing in the form of decking and tunnel projects, as well as underground shopping centres. This creates new and complex risk environments. New emergency response measures must consequently be developed. Already today, there exists in Sweden high buildings with only one stairwell where fire brigades' ladder equipment does not reach.³⁹

Development of demography and public health

Research shows that, among those who die in house fires, there is an overrepresentation of men, elderly people, children, smokers, people who live in substandard housing, people under the influence of alcohol, people with mental and physical ill health, and socially and economically disadvantaged people.⁴⁰ This means that the development of demography and public health will affect future fires.

In a scenario where more people have become socially and economically disadvantaged, fires may pose a more serious problem. This also applies to the scenario where public health sharply deteriorates. Smoking is today by far the most common cause of fire leading to death. Fire can also be linked to alcohol consumption, and a high proportion of victims and casualties associated with fires have consumed alcohol.⁴¹

Development of social values

In the scenarios where individuals take greater responsibility for their own safety, the number of fires may decrease. With heightened risk awareness, more households may keep equipment such as smoke alarms and fire extinguishers at home. Increased social commitment could also help reduce the number of fires, as more people would take responsibility for their local environment.

In one scenario, corruption in society increases. This can affect regulation within construction, fire protection and supervision activities, which could increase the risk of fire.

3.2.4 Accidents involving personal injuries

Developments in society affect the accidents happens every day to people in their homes and during leisure time causing personal injuries. This category of accidents includes, for example, falls, accidental poisoning, and drowning (for fire, see section 3.2.3).

An older population

The demographic trend varies slightly between the different scenarios, but common to all is that the proportion of elderly people increases. This is likely to have

39. Greater Stockholm Fire Brigade, Greater Gothenburg Fire and Rescue Service and Region South Fire and Rescue Service (2012), *2030 – A Fire Department in Time?*, Ref. no. 3001.2012.03675.

40. Ekroth et al. (2012), *Forskningsöversikt: Bostadsbränder och socioekonomiska faktorer (Research Overview: Residential fires and socioeconomic factors)*, Mid Sweden University, Risk and Crisis Research Center.

41. Greater Stockholm Fire Brigade, Greater Gothenburg Fire and Rescue Service and Region South Fire and Rescue Service (2012), *2030 – A Fire Department in Time?*, Ref. no. 3001.2012.03675.

an impact on accidents, as the elderly run a significantly higher risk than the general population of being injured or killed in an accident.

That the elderly are more susceptible to accidents is dependent in part on deteriorated physical functions, such as muscle strength, balance and responsiveness. It is also due to the increased incidence of illnesses such as dementia and Parkinson's. Many drugs increasingly used by the elderly can also produce side effects in the form of dizziness, confusion and hypotension. The fact that the elderly is a group that to a greater extent live alone makes them a more accident prone group.⁴² The elderly are overrepresented in many different types of accidents, but falls are by far the most common type.

Development of public health

Public health developments play a large role in the development of accidents in society. Deteriorated public health, including an increase in the consumption of medications, alcohol and drugs, is likely to impact accident development in a negative way. Certain illnesses such as diabetes and depression also increase the risk of being involved in an accident.⁴³ Similarly, a good level of public health would reduce the number of accidents involving serious injury. The scenarios vary with regard to developments in this area, from a much better level of public health, to public health in general worsening significantly.

Economic and social development

Economic and social developments affect the incidence of accidents in home and leisure environments. A society with more financial resources can be expected to spend more on accident prevention than a society with a struggling economy. Socio-economic conditions also influence accidents. People with a low income, living alone, unemployed and people with low education are at greater risk of being involved in an accident.⁴⁴ The economic development and socio-economic conditions vary between the different scenarios. A society characterised by a lack of finances and a large group of economically and socially disadvantaged can be expected to be more accident-prone.

In the scenario where corruption in society has increased, the number of accidents might go up. A society with more corruption could mean that safety standards are not followed and supervisory functions are lacking.

Technological development

Accident development is dependent on technical and scientific progress. Thanks to new drugs, intelligent systems (e.g. alarms in the event of a fall) and robotics, an increasing number of elderly people can live at home longer. This can increase or decrease the risk of an accident depending, inter alia, on the vulnerability of the new technology and whether or not the new drugs produce fewer side effects.

42. Swedish Civil Contingencies Agency (2009), *Skador bland äldre i Sverige (Injuries among the elderly in Sweden)*, MSB 0067-09.

43. Swedish Civil Contingencies Agency (2010), *Olyckor och kriser (Emergencies and crises) 2009/2010*, MSB 0170-10.

44. Swedish Civil Contingencies Agency (2012), *Personskador i Sverige 2012 års utgåva (Personal injuries in Sweden 2012 edition)*, MSB 413; and Swedish Civil Contingencies Agency, (2010), *Olyckor och kriser (Accidents and emergencies) 2009/2010*, MSB 0170-10.

3.2.5 Cyber attacks

Developments in society affect future cyber attacks. The consequences of a cyber attack can be significant. Disruptions in different systems as a result of cyber attacks can have severe repercussions. Failure and disruption of electronic communications and other critical infrastructure systems are discussed more in Section 3.2.9. Antagonistic acts are discussed in more general terms in Section 3.2.7. This section is more specifically focused on cyber attacks.

Social climate and world developments

The social climate and the level of conflict in the world affect the risk of cyber attacks. Cyber attacks are employed for different purposes by different kinds of actors, such as political organisations, criminal networks and individual activists. In one scenario, society is characterised by social unrest, intolerance and xenophobia. This could lead to more targeted cyber attacks against various groups in society. In the same scenario, organised crime has, to an even greater extent than today, expanded online. This type of crime can pose a threat to vital societal functions that are connected to the internet. In another scenario, the world is characterised by conflict and terrorism, which would also make organised cyber attacks more probable.

The internet's nature and level of freedom and control

An important issue concerning the overall infrastructure and the ability to carry out cyber attacks is the internet's nature. Some of the scenarios show a stronger degree of government control and more widespread control functions in general. This can lead to more extensive control of the internet which could lead to a fragmentation, where different parts of the internet are no longer connected to each other. For example, some states may choose to have a "domestic" internet without access to the outside world. Such fragmentation may protect against cyber attacks from other countries, but may also limit the information flow.

The degree of vulnerability

Society's vulnerability to cyber attacks is dependent on the preventative measures and the level of information security. The preventative measures vary between different scenarios depending on economic development, the level of investment in redundancy, technological development and infrastructure development. One example of how vulnerability depends on ownership and control is the extensive deregulation of the U.S. electricity grid which has resulted in the grid being fragmented. This means that no one actor has a complete overview of this complex and interconnected system. The hunt for individual efficiency gains has meant that the redundancy has decreased.⁴⁵ This development has increased the electricity grid's vulnerability to cyber attacks, wherein industrial control systems (so-called SCADA⁴⁶ systems) could be manipulated so that critical functions in the electricity grid are knocked out. Such a cyber attack could have serious consequences in terms of economic losses. If the disruption would occur in conjunction with a cold snap or heat wave, human lives and health may be put at risk.⁴⁷

45. National Research Council (2012), *Terrorism and the Electric Power Delivery System*, The National Academies Press, Washington, D.C.

46. SCADA – *Supervisory Control and Data Acquisition*.

47. National Research Council (2012), *Terrorism and the Electric Power Delivery System*, The National Academies Press, Washington, D.C.



The foundations for avoiding large-scale cyber attacks are laid long before 2032, as large-scale antagonistic attacks against information systems can rarely be staged without previously having gathered information and secured routes into a target system.⁴⁸ Therefore preventive actions today and in the near future determine how great the risk of cyber attacks will be in the future. This includes many of the more general preventative measures taken to protect information systems. Therefore, preventative information security initiatives in society are of great importance.

3.2.6 Outbreak of infectious disease

Developments in society affect future outbreaks of infectious diseases both in terms of the vulnerability of the population and the ability to prevent and manage outbreaks.

Development of demography and public health

Society's vulnerability in terms of outbreaks of infectious diseases is affected by demographics and public health. In all scenarios, the proportion of elderly in the population increases, albeit to different degrees. An aging population means that society becomes more vulnerable in the event of an influenza pandemic. The level of public health varies in the different scenarios. A society characterised by poor public health is more vulnerable to outbreaks of infectious disease. The prevalence of infection may also be affected by overcrowding in cities, insufficient maintenance of infrastructure for drinking water and wastewater systems, and insufficient knowledge regarding infection and hygiene.

Economic development

Access to health care varies in the different scenarios with economic developments. Shortcomings in health and medical care and limited access to medicine affect the spread of infection, both in terms of prevention and management. Preventative public health measures may be reduced in scenarios with a limited public spending budget.

Development of antibiotic resistance and resistance to antivirals

One scenario describes a world where health and medical care is left without functioning antibiotics. Antibiotic resistance has recently come to be recognised as a threat to society in a broader sense, not just as a problem facing health and medical care.⁴⁹ A major outbreak of flu or a pandemic could have very serious consequences in a society without the ability to treat bacterial complications. The control of influenza outbreaks and pandemics may also be hampered if viruses continue to develop resistance to antiviral drugs.⁵⁰

Medical development

Scientific developments can bring new drugs and treatment possibilities. In one scenario, biotechnology has developed very quickly and progress within this area should also be applicable to the management of infectious disease outbreaks.

48. Swedish Civil Contingencies Agency (2012), *Underlag inför nästa försvarspolitiska inriktningsbeslut (Documentation for the next defence policy decision)*, Ref. no. 2012-3275.

49. See inter alia World Economic Forum (2013), *Global Risks 2013*, Genève; and ReAct, www.reactgroup.org.

50. One reason that so many deaths occurred during the Spanish influenza pandemic was the bacterial diseases that followed the flu. *PM avseende resistens mot antibiotika och antivirala preparat (Memorandum regarding resistance to antibiotics and antiviral drugs)*, published in the report Swedish Civil Contingencies Agency (2011), *MSB:s långsiktiga strategiska analys – genomfört och planerat arbete (MSB's strategic foresight analysis – implemented and planned work)*, Ref. no. 2009:8495.

Globalisation

Diseases spread across national borders, which means that increased globalisation affects the spread of infection. Some of the factors that affect the probability of disease outbreaks in Sweden are as follows: an increased risk of infection in the world resulting from climate change; deteriorating economic development in countries that therefore have fewer resources to employ preventative measures; the emergence of megacities; migration; increased travel and the international trade of plants, animals and food.

Climate change

Climate change has progressed to different stages in the different scenarios. Higher temperatures and increased precipitation could lead to new diseases and disease carriers coming to Sweden. Higher temperatures may also increase the likelihood of growth in microorganism in foods and the resulting contamination, including a possible increase in the risk of EHEC and *Campylobacter* infections. More extensive floods in greater numbers increase the risk of contaminated drinking water.⁵¹

3.2.7 Antagonistic acts

Developments in society affect future antagonistic acts in terms of probability and the vulnerability of society in relation to these types of events. In this report, antagonistic acts are defined as intentionally malicious and illegal acts that may be perpetrated by, for example, terrorists, irregular forces or organised crime with the intention of causing damage, regardless of motive.⁵² Antagonistic acts in the form of cyber attacks are discussed separately in Section 3.2.5.

The risk of antagonistic acts in the form of, for example, terrorist attacks or criminal acts of violence that are economically motivated, may increase in some scenarios. However, it is important to keep in mind that this is an area involving a high level of uncertainty regarding future development, as it relates to human activities that are largely guided by feelings, thoughts and intentions. Since historically the definitions of terrorism have diverged greatly and there is no consensus regarding the term,⁵³ it is difficult to estimate what will be considered terrorism in 20 years, which in turn affects the analysis of the scenarios in regard to terrorism. Nevertheless, it is important to consider the *effect* of an antagonistic act, regardless of whether or not the motive is classed as terrorism.

Politics and economy

If the world is characterised by conflict, a lack of resources, perceived injustices and great economic and social inequality, it is not unreasonable to imagine that the risk of antagonistic acts and criminal actions would increase. In a society marked by social unrest and major socio-economic inequalities, it is also easy to envision an increased risk of antagonism and large-scale criminal operations. As far as more ideologically motivated antagonism is concerned, it is not so much the objective facts as the subjective feeling of injustice that determines the like-

51. Swedish Civil Contingencies Agency (2012), *Klimatförändringarnas konsekvenser för samhällsskydd och beredskap – en översikt (Consequences of climate change for societal security – an overview)*, MSB 349.

52. See similar definition of antagonistic threats in Swedish Civil Contingencies Agency (2010), *Antagonistiska hot mot transporter av farligt gods (Antagonistic threats against transports of dangerous goods)*, MSB 204.

53. Schmid (ed) (2011), *The Routledge Handbook of Terrorism Research*, Routledge, New York.

likelihood of an antagonistic act. In scenarios with increased tensions in the world and conflicts over resources and autonomy, the feeling of injustice may increase among different groups.

Social values

A society that is characterised by a strong sense of community and a high degree of trust between citizens is probably better equipped to handle antagonistic acts. Societies characterised by high levels of social capital are better equipped to withstand a crisis or a terrorist attack.⁵⁴ A terrorist attack can do more damage in a society marked by a low level of trust and significant inequalities as it causes mistrust and tensions between different groups. Confidence in the ability of public authorities in this situation also becomes a determining factor for how well society deals with an antagonistic act, particularly with regard to people's willingness to act in accordance with the authorities' recommendations.

The degree of vulnerability

The different societies in the scenarios reveal different vulnerabilities associated with antagonistic acts. The degree of protection of vital societal functions affects vulnerability to antagonistic actions. The objectives of antagonistic attacks may very well be to disrupt or destroy critical infrastructure.⁵⁵ In scenarios where few investments in infrastructure are made in terms of redundancy, the vulnerability becomes more prominent.

Recent technological advances, for example within bio- and nanotechnology, can potentially be exploited to pose new threats. Progress in technical, chemical, biological, radiological or nuclear fields can also be used for an antagonistic or criminal purpose. Technological advances must consequently be monitored to detect emerging new threats.

3.2.8 Armed conflicts and war

Several developments in the scenarios affect the risk of armed conflict and war in other countries and in Sweden.

The state of international relations

The development of security policy in Sweden and abroad is influenced by factors such as economy, ideology and the degree of rule of law and democracy in various countries and regions. Although Sweden is not exposed to a direct armed attack in any of the scenarios, the outside world and the security outlook are different in the scenarios. In one scenario, there is an elevated risk of Sweden being drawn into a conflict. This is due to the world being characterised by conflict. In this scenario the EU has weakened, and unclear demarcation issues in the Arctic region contribute to increased tension in Sweden's geographic proximity. The risk of Sweden being exposed to actions that can be likened to an act of war can also be said to increase in this scenario. Examples of such actions are large-scale cyber attacks and the deliberate spread of infectious diseases.

54. Hausman et al (2007), *Social capital as a mediating factor in emergency preparedness and concerns about terrorism*, Journal of Community Psychology, Vol. 8, nr. 3, 2007.

55. National Research Council (2012), *Terrorism and the Electric Power Delivery System*, The National Academies Press, Washington, D.C.

In another scenario, the U.S. no longer is the world's obvious centre of power. There are different theories about what a change in the balance of power between the world's states will mean for the risk of conflict. There are those who argue that an increasingly multipolar world, without one state in a clear leadership role, could lead to more conflicts. However, if institutional cooperation increases, this should reduce the risk of war, even in a multipolar world.

Even if Sweden is not beset by war, actors within societal security may need to answer to an increased demand for international operations because of complex crises in other countries.⁵⁶ The international community's efforts in these situations may, to a higher degree than now, come to integrate civilian and military resources.⁵⁷ The large amount of small arms and vehicle-mounted weapons available internationally represents a major problem in this context.

Declarations of solidarity

The likelihood that Sweden is drawn into a conflict or war is affected by the relations and commitments Sweden has to the outside world. The Swedish declaration of solidarity, the common solidarity clause within the EU and the Nordic declaration of solidarity, mean that Sweden and the Nordic countries and the EU have assured each other assistance in emergencies and crises.⁵⁸ If, in the future, Sweden still upholds its solidarity declaration regarding support to other countries in the EU, Norway and Iceland, it could be argued that the probability of Sweden also being drawn into a war increases, in the event that there are more conflicts in the world. To what extent do the declarations of solidarity apply, particularly in a situation where national interests and solidarity commitments collide? At the same time, maintaining solidarity between countries in Europe acts as a clear deterrent and contributes to conflict resolution through peaceful means.

The demarcation between civil and military

The arenas of warfare have extended beyond the traditional three – land, sea and air – to become five; land, sea, air, cyberspace and space. Future wars and conflicts are likely to be more complex than before, where the lines between what is traditionally considered to be military and civilian targets are becoming increasingly blurred. Some analysts believe that warfare in the future will be based on intelligent networks and computers.⁵⁹ Through information warfare, vital societal functions such as electricity and transportation can be disabled. In such a future, it is important to determine in advance how military and civilian actors will relate to each other and how they support one another. If modern war is characterised by complexity as warfare is conducted in urban environments where civilians mix with combatants,⁶⁰ the nature and forms that civil-military interaction will take will also change.

56. Åhman et al (2012), *MSB:s internationella insatser – Fem framtidsscenarier (MSB's international interventions – Five future scenarios)*, FOI-R--3556 – SE.

57. Swedish Civil Contingencies Agency (2012), *Underlag inför nästa försvarspolitiska inriktningsbeslut (Documentation for the next defence policy decision)*, Ref. no. 2012-3275.

58. Ibid.

59. Ibid.

60. Swedish Civil Contingencies Agency (2012), *Utgåva 1 av Strategi för civilt försvar (Edition 1 of Strategy for civil defence)*, Ref. no. 2011-2587.

Future wars may differ from the preparations made during the Cold War, in that the ownership of civil key functions is different.⁶¹ In some scenarios the proportion of private owners and providers within vital societal functions has increased. This naturally places demands on how modern civil defence should be organised.

Technological development

New technological advances will affect the landscape of future warfare. Examples include information technology, nanotechnology and biotechnology. Different degrees of progress within these areas of technology are described in the scenarios. Within the field of explosives, development of conventional explosive substances is underway which will result in the effects being comparable to that of nuclear explosions. The development of precision weapons, long-range weapons and the use of so-called drones are also expected to continue. Furthermore, the security outlook will be affected by the extent of proliferation of new technology and advanced weaponry.

3.2.9 Failure and disruption of certain vital societal functions

Developments in society affect the future vulnerability and capacity of critical infrastructure,⁶² which implies consequences for the likelihood of failure and disruption of vital societal functions. Examples include the failure and disruption of:

- Food and drinking water supply
- Electronic communications
- Energy including electricity supply
- Payment systems
- Transport
- Health and medical care

On a general level, development affects vulnerability and capacity within most of these functions in much the same way. Rather than giving an account of the failure and disruption of each function separately, a more general line of reasoning is followed in this section. In certain cases, this is supplemented with a more thorough analysis of specific types of failure and disruption.

Economic development

Economic development plays an important role in the vulnerability of different societal functions. In scenarios with a deteriorating economy, infrastructure such as roads and water and sewage systems may be neglected in terms of maintenance, which should increase the likelihood of transportation and drinking water disruptions. The opposite is of course true for scenarios with a thriving

61. Swedish Civil Contingencies Agency (2012), *Utgåva 1 av Strategi för civilt försvar (Edition 1 of Strategy for civil defence)*, Ref. no. 2011-2587.

62. A vital societal function can be defined as a function of such importance that its loss or severe disruption to it could entail major risks or hazards for the life and health of the population, the functionality of society or society's fundamental values. Such functions can be found within many sectors of society, such as energy supply, health and medical care, municipal technical services, public administration, transport and food. Swedish Civil Contingencies Agency (2011), *Ett fungerande samhälle i en föränderlig värld. Nationell strategi för skydd av samhällsviktig verksamhet. MSB 266*. This report is also available in English: Swedish Civil Contingencies Agency (2011) *A functioning society in a changing world: MSB's report on a unified national strategy for the protection of vital societal functions*, MSB 341.



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economy. A development characterised by growing geographic economic disparities could involve the risk of failure and disruption being greater in certain parts of the country. Disruptions in communications systems such as telecommunications and internet could become even more common in rural areas if maintenance and new investment are concentrated in metropolitan areas, as described in one scenario.

An increase in the private ownership and operation of vital societal functions, as shown in some scenarios, could add to the diversity of actors and capacities, which could in turn lead to enhanced redundancy. However, diversification can also lead to fragmentation which may cause vulnerability by reducing system oversight, as shown in Section 3.2.5 on cyber attacks. One problem associated with private operation is the risk of failure and disruption when companies become bankrupt on short notice, for example, when the company that handled the ambulance service in Skåne went bankrupt in 2012.⁶³

Climate change and adaptation

Efforts to adapt infrastructure and buildings to a new climate are at different stages in the different scenarios. Insufficient climate change adaptation increases vulnerability within vital societal functions. Furthermore, if climate change occurs more rapidly than expected, interruptions and disruptions may already present serious problems by 2032. An increased incidence of high rivers, floods, landslides, extreme heat, forest fires, the storm-felling of forests, etc. (see Sections 3.2.1. and 3.2.2), makes the probability of, for example, power failure resulting from damage to power lines or disruptions in rail transport due to heat distortion, larger.

A rise in sea level due to climate change increases the risk of disruptions in the drinking water supply as a result of saltwater intrusion in the water catchments close to the coast. Food production can be disrupted as more plant pests and weeds enter the country, and extreme weather conditions such as extreme heat and torrential rains can cause yield losses.⁶⁴

At the same time, climate change in these scenarios can affect the ability to sustain vital societal functions in a positive direction. In Sweden, hydropower and wind power production is assessed as benefiting from the changing climate, drinking water resources will increase in many parts of the country and the conditions for agriculture and thereby food production can be improved.⁶⁵

The effects of climate change in the rest of the world may also impact vital societal functions in Sweden. For examples, scenarios characterised by accelerated climate change could, already by 2032, see increased drought disrupting food production on a global scale. If at this point Sweden is still dependent on the import of food, these disruptions could also affect the Swedish food supply.⁶⁶

63. Region Skåne, *Intensivt arbete med säkerheten i de skånska ambulanserna (Intensive work with security surrounding Skåne ambulances)*, www.skane.se/sv/Nyheter/Halso---sjukvard/Intensivt-arbete-med-sakerheten-i-ambulanserna-i-Region-Skane/.

64. Swedish Civil Contingencies Agency (2012), *Klimatförändringarnas konsekvenser för samhällsnytt och beredskap – en översikt (Consequences of climate change for societal security – an overview)*, MSB 349; and Swedish Government Official Reports (2007), *Sverige inför klimatförändringarna – hot och möjligheter (Sweden facing climate change – threats and opportunities)*, SOU 2007:60.

65. Ibid.

66. Ibid.

Technological development

Technological development can both improve safety and contribute to an increased vulnerability within vital societal functions. With advances in information and communications technology, more robust systems that are less sensitive to disruptions could be developed. Given the dependence on effective information management and electronic communications, this would enhance security within virtually all vital societal functions. Developments within information and communications technology can, in combination with the development in areas such as sensor technology, result in more sophisticated monitoring systems and positioning services, which increases the possibilities of early detection of problems within different functions. However, advanced technical services and new products can also generate new types of risks. An increased dependence on information and communications technologies can increase the vulnerability of critical infrastructure. If more people in the future can make a living in rural areas thanks to advanced information and communications systems, the dependence on these systems' robustness will grow.⁶⁷

The development of new energy technologies is essential for the future of energy supply. A continued reliance on oil in combination with an insecure supply can lead to high oil prices. This would in turn lead to both a long-term shortage and increase the risk of more sudden acute shortages. However, if renewable electricity would replace oil as a fuel, this would increase society's dependence on electricity all the more. Disruptions in the electricity supply would have large consequences for most parts of society.

Development of cross-border dependencies

The development of dependencies across national borders varies in the different scenarios, which could affect security within vital societal functions. With an increased proportion of cross-border infrastructure, the likelihood of disruptions in other countries also having consequences for Sweden increases. With the use of technology playing an all the more important role, Sweden's dependence on the import of certain critical products increases. In the scenario where the world is plagued by conflict, trade can be disrupted, which can hinder the maintenance of vital societal functions. Society also faces major challenges in a scenario characterised by continued high oil dependence and an insecure supply. Many societal functions are dependent on oil, and an oil shortage represents a major challenge unless alternative energy and power sources are available.

In this context it must also be noted that increased transnational dependence also means increased security as it opens up for opportunities to collaborate and create redundancy across borders.

Development of antibiotic resistance

One scenario depicts a development where antibiotic resistance is much more extensive than it is at present. This may affect the functionality of vital societal functions. Primarily, it is the health and medical care services that would face

67. Wikman-Svahn and Carlsen (2012), *Möjliga konsekvenser av framtida teknikutveckling för samhällsskydd och beredskap* (Possible consequences of future technological development for civil contingencies), supporting data for MSB's strategic foresight analysis, Ref. no. FOI 2011-1032.

major challenges in the event that of more widespread antibiotic resistance. Food supply would also be affected by an increased antibiotic resistance as animal production is dependent on functioning antibiotics. Public health can also deteriorate. This may affect the availability of staff, and a high staff shortfall could disrupt vital societal functions.

Strategic challenges for societal security

4. Strategic challenges for societal security

The analyses of consequences in the previous chapter show that, in the future, Sweden will need to maintain the ability to prevent, prepare for, manage and learn from emergencies and crises. This chapter discusses how the field of societal security, i.e., protection against accidents, emergency preparedness and civil defence, need to develop in a long-term strategic perspective, and ten strategic challenges are presented.

These challenges represent issues of long-term strategic importance. The challenges are significant in all five scenarios, albeit to different extents. This implies that there is a sound basis for claiming that these strategic challenges are of great importance for societal security, regardless of how the future will turn out.

4.1 Do not lose confidence in public institutions

The analysis of the five scenarios highlights the importance of working more proactively to sustain the general public's confidence in public authorities within societal security and in the services they perform. Good communication with the public, which is required to prevent, prepare for and deal with emergencies and crises, is dependent on the public's confidence and trust. In Section 3.1.4, a line of reasoning is followed regarding how a development towards a waning confidence in public authorities would affect the conditions for communication. A lack of confidence and trust may also affect the ability of public authorities to govern and coordinate societal security preparedness, Section 3.1.1, or the capacity of society to withstand antagonistic acts, Section 3.2.7. Maintaining public confidence in public authorities represents a strategic challenge for societal security.

Maintaining public confidence is about not losing the credibility and trust required for public authorities to be able to maintain and improve societal security.

Confidence in public actors' societal security preparedness is created primarily as they deliver the services for which they are responsible. This has to be done in a dialogue with the citizens. To make it clear to the citizens what can be expected and not expected from the public sector is therefore of great importance. This must be defined and communicated to a much greater extent. It then becomes a question of delivering these goods as promised. See also Section 4.3 on the importance of reinforcing the individual's preparedness.

Transparency, clarity and communication are key words in the efforts to manage and build confidence. These key words will need to act as guiding principles for all actions undertaken within the field of societal security. Through effective communication, confidence can be created and maintained. The ability to communicate is discussed more specifically in the next section, 4.2.

The importance of ethics also needs to be highlighted more clearly. Like today, public actors will also in the future have to act correctly. This may involve providing answers to questions, handling matters in accordance with established procedures, using tax money in an efficient manner and in accordance with

applicable rules, and being transparent and communicative with regard to operations, decisions and planning. In order to maintain confidence, it is important that employees in the field of societal security have a sound ethical compass. Ethical codes at different levels may need to be developed.

To a greater degree, the diversity found in society needs to be represented in the staff composition of the organisations in societal security. If, regardless of background, gender, age and orientation, one can identify with the people working within the field, the authorities stand a better chance of maintaining public confidence.⁶⁸

That individuals perceive public authorities as credible is important for their willingness to act in accordance with the authorities' recommendations.⁶⁹ This means that public authorities must be clear about the consequences of different decisions, both positive and negative. If the resulting effects are uncertain, or if decisions have been made on questionable grounds, this also needs to be communicated. Otherwise there is a risk that credibility will be eroded in the event that the decision has undesirable consequences. Public authorities must be able to admit mistakes. Maintaining public confidence is not about avoiding questioning and discussion.

There is a need for a deeper understanding of which actions and mechanisms promote long-term confidence in societal security preparedness. One way of achieving this could be to include aspects relating to confidence in crisis management exercises.

This challenge gives rise to the following strategic questions:

- How can public authorities work more purposefully to maintain public confidence?
- How to ensure that public authorities within the field of societal security reflect society's diversity?
- How can knowledge be developed about the actions and mechanisms that promote public confidence?
- How can aspects relating to confidence be included in crisis management exercises?

68. Falkheimer och Heide (2008), *Kriskommunikation i ett globalt samhälle (Crisis communication in a global society)*, the Swedish Emergency Management Agency's (SEMA) thematic series 2008:4; and Swedish Civil Contingencies Agency (2009), *Handlingsprogram för ökad jämställdhet och mångfald i det kommunala säkerhetsarbetet (Action programme for increased gender equality and diversity in municipal security work)*, Ref. no. 2009:9065.

69. Swedish Civil Contingencies Agency (authors Börjesson and Enander) (2010), *Uppfattningar och beteenden hos svenska allmänheten i samband med utbrottet av A(H1N1) influensan (Perceptions and experiences of the management of the A(H1N1) influenza pandemic in Sweden) 2009*.

4.2 A safe society communicates

The analysis of the five scenarios illustrate that the conditions for communication between public authorities and the general public can change, see Section 3.1.4. No matter what the future holds, communication will be an area of crucial importance in the field of societal security. Communication is needed in accident and crisis prevention in order to, among other things; strengthen the knowledge and ability of the individual citizen, Section 3.1.5. Prompt and clear communication also constitutes a significant part of the ability to deal with future emergencies and crises, including those discussed in Section 3.2. Maintaining the ability to communicate effectively with the public in a rapidly changing society is therefore a strategic challenge for societal security.

Communication is a strategic tool in the prevention and management of emergencies and crises. It must evolve at pace with society. The importance of clear and timely communication in the management of emergencies and crises cannot be overemphasised.

Communication and trust are interdependent. The previous section, 4.1, involved a discussion on the importance of maintaining confidence in order to be able to communicate. Communication is also a means of maintaining confidence. In addition, there are further dimensions to consider when discussing the importance of communication. First, information from public authorities must reach the citizens in order to prevent, prepare for and manage emergencies and crises. Second, citizens must feel that they are able to communicate their fears and hopes, as part of the public actors' doing and learning. If a situation involving high levels of anxiety and fear evolves, such as an outbreak of an infectious disease or a significant antagonistic threat, effective communication will be of fundamental importance. By communicating preventative and applicable practical knowledge on how to avoid or resist accidents and disasters, the preparedness of the individual citizen should improve. In order to face the challenges of the future, efforts will need to focus on developing public authorities' communication with the public. Relationships need to be developed and communication adapted to better address target groups.

Public authorities' way of communicating is currently transforming from indirectly informing the public, often via established news media, to a more direct form of communication or dialogue. This means that there are no longer pre-defined ways of how to communicate; instead the communication strives to be more open, attentive and flexible. Public actors need to relate to the citizens' ability and willingness to conduct dialogue, search for information and make their own decisions. The communication between public actors and the general public needs to facilitate the individual's capacity to make informed decisions.

As the way that the individual citizen search for information changes, public actors must consider how quickly information can be disseminated. Another issue to consider is how different communication channels can be made accessible during emergencies and crises. Public actors need to be able to communicate using social media, and quickly respond to information circulated through these media channels.

Given an increase in individualisation and that the population may continue to develop different communication habits, target group adapted communication will become even more essential. One way of adapting communication is through choice of language. Other ways include choice of words and phrases that also can be tailored to the intended audience.

Audience and target group adaptation also becomes more important if the ability to comprehend information varies much between different groups in society. If there are significant differences in the population when it comes to education and literacy, information must be designed with this in mind. Usability and accessibility need to increase.

The communication habits as well as the choice of communication means in the population are gradually becoming more diverse. This requires public authorities to increasingly use multiple means of communication in parallel, for example, various websites, radio, call centres and warnings via mobile phone. In addition, it may also be necessary to be present at the scene and communicate directly. The future opportunities that technological development brings in this context need to be taken advantage of.

Not relying on only one or a few technical solutions for communication is important from several standpoints. Access to technology may be unevenly distributed between groups in society. Degrees of access may also differ between different geographical areas within the country. It is therefore essential to have ready solutions for communication in the event that electric supply or electronic communications are not available.

Nowadays, communication has increasingly become an issue for all employees in public organisations, not just the professional communicators. Managers must be prepared to communicate and take responsibility for decisions. The individual employee should also be able to communicate with the public.

The challenge of maintaining the ability to communicate effectively also involves the question of how public actors can communicate in a society where trust in public authorities is significantly lower. In this situation, communication becomes even more important. The need for open, transparent, honest and timely communication becomes all the more urgent. Rather than shying away, public actors need to be increasingly visible. When the actions of public authorities are questioned and public confidence falters, these authorities must avoid a defensive position. To try and shift the blame elsewhere or allocate resources to combat the spread of rumours is not a viable choice of strategy in this case.

This challenge gives rise to the following strategic questions:

- How to develop the ability to communicate with the public in a constantly changing society?
- How can communication continuously be adapted to target groups, and what groups' needs are of particular relevance in the future?
- How can communication be more integrated in the undertakings of public organisations at different levels, from managers to individual employees?

4.3 The individual's preparedness is essential

The analysis of the five different future scenarios reveals, from a long-term strategic perspective, the need to reinforce the individual citizen's preparedness. The analysis demonstrates that society is expected to face a myriad of adverse events, in the form of emergencies and crises, see examples in Section 3.2. At the same time, different developments can lead to the public and private resources that are currently available for the management of emergencies and crises, being insufficient (see Section 3.1.3). The individual's knowledge and competence in matters relating to safety and security can be impacted by future developments (see Section 3.1.5). An augmented risk awareness and preparedness at the individual level contribute to a safer society in several different possible futures. Strengthening the individual's preparedness in relation to emergencies and crises is therefore a strategic challenge for societal security.

The government has, in different contexts in recent years, expressed that the individual has a great responsibility for their own safety.⁷⁰ The Swedish Rescue Services Agency's project "Framtidens risker och säkerhetsarbete" (Future risks and security work) also identified the need to discuss the individual's and society's responsibilities respectively as well as the need to reinforce the individual's preparedness.⁷¹ Based on this perspective, MSB has, among other things, developed a strategy for how fire protection can be bolstered through providing support to individuals.⁷²

Departing from various Government documents, the individual's responsibility in the current situation can be summarised in the following points.

The individual's responsibilities include:

- being aware of the fact that, during severe events, society's resources must first be directed to groups who cannot personally look after their own well-being,
- being aware of and preparing for the fact that emergencies and crises may occur and affect individuals' daily lives,
- actively keeping informed on what authorities and other responsible actors do to manage an emergency or crises, and following instructions and advice from the authorities, and
- being prepared to take care of their and the immediate family's own basic needs such as access to water, food and shelter, especially in the initial phase of a crisis.

Efforts to strengthen the individual's preparedness need to be intensified and concentrated. First, the individual's responsibilities need to be clarified and communicated, but equally important is the need to define the public sector's role and responsibilities. The division of responsibilities between the individual and public actors is based on mutual dependence. In order for the individual citizen to reinforce their own capability and get involved, the responsible authorities

70. See for example, Ministry of Finance (2012), *Budget Bill for 2013*, Govt. Bill 2012/13:1: Utgiftsområde 6, *Försvar och samhällets krisberedskap* (Expenditure area 6, *Defence and society's emergency preparedness*); and Ministry of Defence (2010), *Samhällets krisberedskap – stärkt samverkan för ökad säkerhet* (*Society's crisis preparedness – Strong collaboration for increased safety*), Government Communication 2009/10:124.

71. Swedish Rescue Services Agency (2008), *Framtidens risker och säkerhetsarbete* (*Future risks and security work*).

72. Swedish Civil Contingencies Agency (2010), *Nationell strategi för att stärka brandskyddet genom stöd till enskilda* (*National strategy for strengthening fire protection through support to individuals*), MSB Ref. no. 2009:14343.

must provide the tools. For example, this may involve easily accessible and targeted information, programmes and courses at the local level and dialogue meetings between public and private actors.

Communication relating to the individual's responsibility and preparedness also needs to be developed further. See also Sections 3.1.4 and 4.2 on the development of communication with the public. There is a need for increased public knowledge and insight into issues related to societal security. Individual municipalities do not always have the resources necessary to communicate issues from a preventative perspective to the citizens. MSB can develop support to the municipalities in this respect, for example, through developing national communication concepts. These could be easily customised according to different actors' needs and circumstances. To this end, experiences from similar international and national information campaigns targeting the general public can also be taken into account.

In addition, it would be desirable to introduce further educational initiatives in schools on the subject of safety, security and individual preparedness. It has thus far been difficult to get sufficient space in the curriculum for tutorials on these issues, and ways to achieve this goal need to be developed. There has to be readily available pedagogical and audience adapted educational material. Knowledge of societal security among teachers has to increase. This could be done through free training initiatives. It could be the case that the *societal and individual security and preparedness* needs to be introduced as a mandatory subject.

One issue for further study is how other countries educate their youth in matters relating to safety, security and the individual's preparedness. In the U.S., for example, a project has been initiated that educates young people in crisis management over the course of one year, called FEMA Corps. During the period of their study, these young people also constitute a staff resource.⁷³ Since compulsory military service in Sweden is suspended during peace time, there may be good reason to investigate other possible training options to reinforce the preparedness of the individual.

One aspect that also has to be taken into account is that the individual's capacity to prepare for adverse events is not evenly distributed across the population. In general, some groups are less able to take necessary preparedness measures due to age, illness, substance abuse, social and economic exclusion or other reasons. In addition, vulnerable groups are often more at risk. Public authorities must be clear regarding the range of resources and support that can be made available during emergencies and crises, and how the needs of vulnerable groups can be taken care of. It is vital that public actors take responsibility for the most vulnerable in society during emergencies and crises, not least from a confidence perspective.

This challenge gives rise to the following strategic questions:

- To clarify the roles and responsibilities of the individual and of public actors is a task that requires direction from the Government and collaboration between MSB and other relevant authorities. How can this task, including communication with the public, be executed?

73. Federal Emergency Management Agency, *FEMA Corps*, www.fema.gov/fema-corps.

- The individual will require different tools to reinforce their preparedness. What form will these tools take, for example, audience adapted information, dialogue meetings and educational programmes?
- In what way can MSB continue to develop support to different actors, e.g., municipalities, in terms of communication regarding the individual's responsibility and preparedness?
- What educational and training material can MSB create and provide schools with in order to enable and facilitate better teaching on societal security? Can more instruction on safety, security and personal preparedness be included in schools' curricula? Studies of how other countries educate the individual in these matters can be a source of inspiration.

4.4 It is possible to more effectively prevent accidents

The analysis of the five scenarios shows that accidents that occur in home and leisure environments are affected in different futures with regard to, inter alia, their frequency and the ability to employ preventative measures, see Section 3.2.3 on fire and Section 3.2.4 on accidents involving personal injuries. Unless current trends are broken, the cost in terms of human suffering, loss of resources and money will become extremely high. Counteracting a development towards an increasing number of accidents in home and leisure environments constitutes a strategic challenge for societal security.

An ageing population, public health, and economic and social circumstances are some developments which affect accidents in the scenarios. In Sweden, the number of fatal accidents in home and leisure environments increased over the last 20 years. Compared to the 1990s, 25 per cent more accidents occur in these environments, while workplace and road traffic accidents have instead decreased. Each year 3,000 people are killed in accidents, 100,000 are hospitalised and over 650,000 require attention at emergency wards due to accidents.⁷⁴ Of these accidents, approximately 80 per cent occur within the home and leisure area and ten per cent occur within the work and transport area respectively. The cost for falls alone, which mainly involve the elderly, amounts to over SEK 22 billion per year.⁷⁵ The total cost of accidents reaches a sum of 65 billion each year.⁷⁶

In several scenarios, the proportion of elderly people is greater than that of today and their health varies between scenarios. If the demographic forecasts turn out to be accurate without any major deviations, this means that there will be a high proportion of elderly in the Swedish population by 2032. A common notion is that today's elderly are healthier than previous generations and that accidents thus need not increase along with the proportion of elderly. This, however, is not necessarily true, as increased longevity may increase the number of ailing elderly people.⁷⁷

74. Swedish Civil Contingencies Agency (2012), *Personskador i Sverige 2012 års utgåva (Personal injuries in Sweden 2012 edition)*, MSB 413, page 9.

75. *Ibid.* page 121.

76. Swedish Civil Contingencies Agency, *Olyckor kostar 65 miljarder per år (Accidents cost SEK 65 billion per year)*, www.msb.se/sv/Start1/Nyheter-fran-MSB/Nyheter/Olyckor-kostar-65-miljarder-per-ar/.

77. Swedish Civil Contingencies Agency (2009), *Skador bland äldre i Sverige (Injuries among the elderly in Sweden)*, MSB 0067-09. *Längre liv ger mer sjukdom (Future geriatric care. Longer life means more disease)*, www.vardforbundet.se/Vardfokus/tidningen/2011/Nr-4-2011-4/Framtidens-aldrevard-Langre-liv-ger-mer-sjukdom/.



If the trend of increasing accidents could be broken and if falls among the elderly could be reduced in particular, this would constitute a significant saving, both in terms of human suffering and money.

Accidents are not only unevenly distributed between ages. Earlier in the report, it has been noted that the less educated and those living alone are more inclined to suffer accidents than others. The same applies to people with low income.⁷⁸ During the analysis, the role of public health has also been noted as a factor in the frequency of accidents. These relations are important to consider in order to better direct accident prevention.

Despite the increase in accidents and the high cost that accidents cause society each year, there are factors that suggest that accident prevention is not receiving the attention it should – and that in those cases where accidents are in focus, the attention is misdirected. A study conducted by MSB shows that the general public as well as politicians and the media have an incorrect understanding of the most common types of accidents. Both the public and the decision-makers generally tend to greatly overestimate the risks of violent and dramatic accidents, especially road accidents and fires, while less dramatic everyday accidents – which actually claim most victims – continue to be underestimated.⁷⁹

The cost to society for the prevention of accidents on roads⁸⁰ (approx. 300 deaths/year) amounts to about SEK 40 billion per year, the cost to society for the prevention of fires⁸¹ (almost 100 deaths/year) amounts to SEK 17 billion per year, and the cost to society for the prevention of accidental falls⁸² (1,600 deaths/year) amounts to a little over SEK 3 billion a year (half of which goes to improving work environments). There is thus a significant asymmetry between the actual injuries and how society invests in injury prevention.

The knowledge of accidents is currently based to a large degree on information from health care, which means that it is the damage generated by accidents rather than the rate of accidents itself that is measured. More comprehensive information systems for accidents need to be further developed in order to gain attention and compile the necessary data and analyses for accident prevention.

There is no one single authority responsible for the areas that bear influence on the development of everyday accidents in Sweden. Public health, the use of medication and socioeconomic conditions all play a significant role in the future of accident development. Accident prevention work is currently spread among several authorities and is governed by different laws.⁸³ Without a well thought

78. Swedish Civil Contingencies Agency (2012), *Personskador i Sverige 2012 års utgåva (Personal injuries in Sweden 2012 edition)*, MSB 413, page 9.

79. Swedish Civil Contingencies Agency (2013), *Media och allmänhet om olyckor (Media and the public regarding accidents) 2012*, MSB 520.

80. Swedish Civil Contingencies Agency (2013), *Samhällets kostnader för att förebygga vägtrafikolyckor (Cost to society for the prevention of road traffic accidents)* [prel. title], MSB (forthcoming).

81. Swedish Civil Contingencies Agency (2013), *Samhällets kostnader för att förebygga bränder (Cost to society for the prevention of fires)* [prel. title], MSB (forthcoming).

82. Swedish Civil Contingencies Agency (2012), *Samhällets kostnader för att förebygga fallolyckor (Cost to society for the prevention of accidental falls)* MSB 490-12.

83. Swedish National Institute of Public Health (2010), *Folkhälsopolitisk rapport 2010. Framtidens folkhälsa – allas ansvar (Public Health Policy Report 2010. Public health of the future – everyone's responsibility)*. R 2010:16.

out strategy, accident prevention risks being neglected or misdirected. A strategy is therefore needed to strengthen accident prevention in home and leisure environments. A national strategy would enable a comprehensive overview of accident prevention and reduce the risk of the issue ending up in the no man's land between the jurisdictions of different authorities.

Similar proposals to work more systematically with accident prevention through strategies and national targets have previously been put forward by the National Institute of Public Health (Socialstyrelsen) regarding accidents in home and school environments and during leisure time, and the Swedish National Board of Health and Welfare (Folkhälsoinstitutet) with regard to safety promotion for the elderly.⁸⁴

Inspiration can be taken from a strategy on the prevention of accidents involving personal injury, developed in Norway,⁸⁵ or from the transport sector's Vision Zero for road deaths in Sweden. By adopting a comprehensive national strategy, accident prevention all over society is supported.

This challenge gives rise to the following strategic questions:

- How can a more comprehensive information system for accidents be created?
- What needs to be done in order for accidents in home and leisure environments to receive more attention?
- How can MSB, together with other relevant authorities, develop a national strategy to support accident prevention when it comes to accidents involving personal injury in home and leisure environments?

4.5 Vital societal functions must always be upheld

The analysis of the five scenarios shows how security within vital societal functions can be affected in different futures. Section 3.2.9 on failure and disruptions describes how various developments affect vulnerability within different societal functions. At the same time, different developments also mean that the ability of public authorities to govern and coordinate preparedness within vital societal functions can develop in various ways, see Section 3.1.1. Managing these vital societal functions effectively and securely is already a challenge, and may become increasingly difficult in the future. Protecting vital societal functions from disruption and failure therefore constitutes a strategic challenge for societal security.

Based on a strategy developed for the protection of vital societal functions, MSB works together with relevant public and private actors to improve the security of these functions.⁸⁶ There are many different steps in this process and a variety of needs to consider.

84. Swedish National Institute of Public Health (2010), *Folkhälsopolitisk rapport 2010. Framtidens folkhälsa – allas ansvar* (Public Health Policy Report 2010. Public health of the future – everyone's responsibility). R 2010:16. page 102; and Swedish National Board of Health and Welfare (2011), *Förslag till nationell handlingsplan för säkerhetsfrämjande arbete för äldre personer* (Proposal of a national action plan for safety promotion work for the elderly), 7/12/2011.

85. Departementene: *Ulykker i Norge: Nasjonal strategi for forebygging av ulykker som medfører personskade 2009–2014* (Ministries: Accidents in Norway: National strategy for the prevention of accidents involving personal injury 2009–2014), B-1146 B, Oslo.

86. Swedish Civil Contingencies Agency (2011), *Ett fungerande samhälle i en föränderlig värld, Nationell strategi för skydd av samhällsviktig verksamhet* (A functioning society in a changing world: MSB's report on a unified national strategy for the protection of vital societal functions), MSB 266.

A more systematic approach with clearer requirements and goals for security is one way to develop the robustness of vital societal functions. The responsible public authorities need to provide clearer outlines to providers of vital societal functions (both private and public providers) with regard to the expected security of supply and capacity. This can be formulated, for example, in terms of requirements, goals, supply levels or standards.

Clearer requirements create greater clarity for all in terms of the level of functionality that vital societal functions must always provide, and with that the additional preparatory measures that may be needed. It would be easier to manage dependencies within separate functions if there was more knowledge regarding the limits of supply and capacity. Furthermore, clearer requirements create a more equitable situation in terms of competition. Today, providers that do not invest as much resources in security as their competitors may benefit in securing procurements.

Requirements for security within vital societal functions can be formulated in different ways. The requirements might, for example, specify acceptable minimum levels in supply, or refer to measures to improve robustness. The requirements may be presented in the form of contracts, sectoral agreements, standards, recommendations or legislation. One example is the requirement of the Electricity Act that power cuts may not exceed 24 hours, unless the failure is due to an impediment beyond the electricity company's control. Electricity companies shall pay business interruption compensation to electricity users for power cuts in excess of 12 hours.⁸⁷

An important issue to consider is the ability of public actors to make demands on security in connection with procurements. This ability can be further developed and supported when it comes to procurements related to vital societal functions. For certain vital societal functions the security requirements might need to be higher. Such a system could be likened to the former use of the "K-företag" (companies vital in wartime) within Swedish civil defence. This concept was based on agreements between the state and companies regarding continued supply during state of alert and wartime. The possibility of the state entering into agreements with companies so that certain functions can always be performed, even under extraordinary conditions and high alert could be considered. A system of goals and requirements must also include a system for monitoring and oversight.

In addition to clearer requirements, further collaborative initiatives need to be pursued between the public sector and actors that own or operate vital societal functions. Through collaboration, knowledge of each other's needs can be expanded and sustainable solutions can be developed together to enhance the security of vital societal functions. From a long-term perspective, the need for collaboration will remain regardless of whether vital societal functions are operated by private or public actors.

87. Chapter 3, Section 9 a, and Chapter 10, Section 10, Electricity Act (1997:857).

The development of private-public partnership and collaboration is considered an important issue in this context. The business sector may need to be further integrated into efforts to enhance societal security. A systems perspective is one way to increase collaboration, wherein the relevant private and public actors within one sector become involved in various forms of collaboration at all different levels.

Another area that needs to be reviewed is the prioritisation of vital societal functions during times of shortage. An example of this is the Swedish system Styrel which makes it possible to prioritise vital societal electricity users during an electricity shortage.⁸⁸ The possibility of developing similar systems for, inter alia, fuel and wireless communications, could also be reviewed.

Business continuity management is another way to work with the protection of vital societal functions. With a conscious and developed system of business continuity management, a single actor is better equipped to maintain critical operations and continue supply despite disruptions. In an initiative led by Sweden through MSB, an international standard within business continuity management was developed in 2012 by the international ISO committee TC 223 Societal Security.⁸⁹

The protection of vital societal functions may involve creating some level of redundancy within these functions. Systems where streamlining efforts have been taken too far, and where there is not enough redundancy, are more sensitive to disruptions. It may be necessary to weigh the benefit of cost efficiency against the increased operational security that improved redundancy may entail. A shift from efficiency to resilience and redundancy is noticeable in the arguments put forward in the World Economic Forum's report *Global Risks 2013*.⁹⁰ If, under normal conditions, a function utilises all available resources, it can become extremely sensitive to disruption when the workload increases or in times of crisis.⁹¹

This challenge gives rise to the following strategic questions:

- How can both public and private actors reinforce the protection of vital societal functions?
- How can, from a security perspective, goals be set and requirements defined for the execution of vital societal functions? How to develop collaboration between concerned parties? How to develop the ability to prioritise vital societal functions? And how to pursue business continuity management?
- How can support to Procurement Officers be developed so that procurements relating to vital societal functions involve a clear security perspective? Who can develop such support?

88. Swedish Energy Agency (2012), *Slutrapport från Energimyndighetens styrel-projekt (Final Report from the Swedish Energy Agency's Styrel project)*, ER 2012:04.

89. Swedish Civil Contingencies Agency, *Business continuity management*, www.msb.se/sv/Forebyggande/Samhallsviktighetsverksamhet1/Kontinuitetshantering/

90. World Economic Forum (2013), *Global Risks 2013*, Geneva, page 39.

91. World Economic Forum (2012), *Global Risks 2012*, Geneva, page 32.

4.6 Information and cyber security concerns everybody

The analysis of the five scenarios shows how information and cyber security is affected in different futures. Section 3.2.9 on failure and disruption of vital societal functions discusses the future risk of disruptions in electronic communications. Section 3.2.5 discusses the risk of cyber attacks in different scenarios. Effective information management and electronic communications are a necessity in many vital societal functions, and information and cyber security constitutes a part of this. Maintaining society's information and cyber security represents a strategic challenge for societal security.

With the increased integration of various computer and information management systems in vital societal functions, including integration with the internet, system exposure has increased. In order to not build weaknesses into new systems, it is important to proceed from a security perspective in the construction and maintenance of information systems in critical infrastructure. This also applies to industrial operating systems. Furthermore, information systems are often critically dependent on a secure electricity supply, which means that it is not only the internal security that needs to be maintained.

Together with the authorities in the Cooperation Group for Information Security, SAMFI, MSB has developed a national action plan for society's information security.⁹² The implementation of the action plan is important with regard to a future perspective. Based on the long-term perspective, there are also some other areas that need to be reviewed.

There are good reasons to reinforce the protection of information systems that impact societal security. This is especially true if antagonistic threats are directed specifically to such structures. Considering the significant chain reactions a damaged system would cause, there are strong incentives to reduce vulnerability and increase security. Antagonistic threats that target specific operating systems already exist (Stuxnet, a malicious code that knocked out the components of an Iranian nuclear power plant in 2010 is usually cited as an example of this phenomenon) and are likely to pose a threat in the future.

Antagonistic threats do not necessarily only target infrastructure and industry. With the increased use of various "smart" products, such as machine to machine communications, smart electricity grids and intelligent transport systems there is also a growing risk that private individuals can be exposed to cyber attacks.⁹³ With this in mind, the privacy aspect also becomes an important issue.

The issue's complexity increases as a large part of the technical infrastructure of public actors is supplied by private providers, which complicates efforts to achieve an overview of the overall information security. In some of the five scenarios for society in 2032, this development has progressed further. This in turn means that clear requirements regarding information and cyber security must be established already during the procurement phase. For example, requirements

92. Swedish Civil Contingencies Agency (2012), *Samhällets informationssäkerhet. Nationell handlingsplan 2012* (Sweden's information security. National Action Plan 2012), MSB 423.

93. Swedish Civil Contingencies Agency (2012), *Trendrapport samhällets informationssäkerhet* (Trend report on society's information security), MSB 505.

can be imposed regarding how the providers of IT services shall submit reports in the event of a disruption and how to contribute to maintaining capacity within societal security.⁹⁴

This challenge gives rise to the following strategic questions:

- How can public and private actors continue to develop and maintain their information and cyber security, considering that new risks may arise as society and technology evolve? What challenges are most important to address?
- How do machine to machine communications and various “smart” systems impact the security and privacy of society and individuals?
- What reporting and security requirements can and should public actors impose on information providers in the event of an incident in order to create situational awareness and be able to maintain operations?

4.7 Manage the dependency on products and services from abroad

The analysis of the five scenarios shows how the dependency on imports, as well as the risk of disruptions in the supply of certain critical products and services, may appear different in different futures, see Section 3.1.3 on access to resources and Section 3.2.9 on failure and disruption of vital societal functions. The risk of conflict and a more insecure world could also affect the supply of goods and services, see Section 3.2.8. Securing access to certain critical products and services represents a strategic challenge for societal security.

Globalisation, trade and the development of technical systems mean that modern society is dependent on products and services across national borders. Fuel, technical components, food and medicines are clear examples. Global dependencies mean that disturbances and crises in other countries can have an immediate impact on supply in Sweden.⁹⁵

Self-sufficiency or partial self-sufficiency is an option for certain areas such as electricity and drinking water production, but even these functions are dependent on imports in the long-term. The importance of reducing vulnerability in the supply of food, medication and fuel is often discussed.

To deal with cross-border dependencies first requires improved knowledge of different supply alternatives. It then requires more developed planning and preparedness in terms of acquisition. The aim is to secure the supply of certain goods and services in case of interrupted supply lines.

In the event of disruptions in international trade, options such as rationing, stockpiling of certain goods or agreements with multiple subcontractors could be considered. Stockpiling is also an option if products have long lead times or cannot be produced in Sweden. If a crisis is prolonged, certain products might be subject to rationing.⁹⁶

94. MSB (2012), *Reflektioner kring samhällets skydd och beredskap vid allvarliga IT-incidenter (Reflections on civil protection and emergency preparedness during major IT incidents)*, MSB 367.

95. Swedish Government Official Reports (2009), *En ny ransonerings- och prisregleringslag (A new rationing and price control proposal)*, SOU 2009:96.

96. Ibid.

Sweden has significant dependencies in terms of services and goods flows.⁹⁷ An alternative to stockpiling is to examine how these flows can be guaranteed, even in circumstances where normal trade relations become strained for various reasons. Ongoing efforts with mapping important flows could also shed light on the degree of self-sufficiency and the dependencies in several supply lines.

Stockpiling, redundancy and contracts costs. Issues to consider therefore include the type of contingency measures that are most effective, in which areas they are required and the actors responsible for ensuring access. Relevant rules and legislation such as EU regulations must naturally be taken into account.

Expertise can be viewed in this context as a critical resource, particularly in relation to the opportunities and risks associated with technological development. Expertise in the areas of hazardous substances and information security are examples of national key competencies. Difficulties may arise if there is complete reliance on international expertise and expert support.

This challenge gives rise to the following strategic questions:

- How to develop knowledge of different supply alternatives for those goods and services that society critically depends on?
- What needs to be done in order to ensure long-term access to critical products and services during states of crisis and high alert?

4.8 Utilise existing resources in a better way

The analysis of the five scenarios shows that societal development could entail an increased likelihood of emergencies and crises (see Section 3.2), which would result in a greater need for resources within societal security. At the same time, political and economic developments in society may lead to a lack of resources, in general or in specific parts of the country (see Section 3.1.3), and the conditions for collaboration regarding resources may also change, as observed in different scenarios (see Section 3.1.2). New technologies and scientific advances can be applied so that new technological solutions and new resources are created. The use of existing resources in a better and more effective way constitutes a strategic challenge for societal security.

Individual organisations cannot be expected to have in their possession sufficient human and material resources to deal with all conceivable situations. Instead, the capacity of individual organisations in the event of emergencies and crises can be reinforced by the temporary use of resources that already exist in other parts of society, such as in other organisations. To make the existing resources in society more readily available in the event of emergencies and crises is crucial.

The capacity within Swedish emergency management to utilise available resources in society more effectively is under development.⁹⁸ This includes the development of a system for the coordination of reinforcement resources, and improved cooper-

97. Swedish Civil Contingencies Agency (2012), *Utgåva 1 av Strategi för civilt försvar (Edition 1 of Strategy for civil defence)*, Ref. no. 2011-2587.

98. Swedish Civil Contingencies Agency (2009), *En strategi för förstärkningsresurser (A strategy for reinforcement resources)*, Ref. no. 2009-10825.

ation between concerned actors. Furthermore, the ability of public authorities to utilise voluntary resources as well as resources from the Armed Forces or other countries can be made more effective. The use of national resources specifically designated to support municipalities and regions in different types of emergencies and crises must also develop.⁹⁹

A particularly evident need is to improve the capacity in society to utilise voluntary resources during emergencies and crises. This category of resources includes the eighteen voluntary defence organisations,¹⁰⁰ part-time firefighters and fire protection units, religious communities and other voluntary organisations with operations linked to societal security. In addition, individuals who volunteer without belonging to any organisation can also be included in the category. Social media play an important role in the rapid mobilisation of a large number of volunteers, both pre-enlisted and spontaneous volunteers. Voluntary resources can reinforce society's response capacity, before, during and after emergencies and crises. An increased participation of volunteers can contribute to a sense of social commitment and confidence in public authorities.

The legal and organisational conditions regarding the use of voluntary resources need a review. The need for voluntary support in different situations has to be clarified further, legislation must be reviewed (e.g. in terms of procurement and labour law) and structures to marshal volunteer efforts need to be developed.¹⁰¹ One issue to consider further is whether young people should be offered a state-sponsored course in societal security, as in other countries, with the purpose of supporting and creating a basis for voluntary engagement. See also Section 4.3.

Yet another issue that can be said to be part of the challenge of utilising available resources is the ability to keep up to date on technological developments and to take advantage of new technologies. Technological development creates many opportunities for societal security. The actors within societal security need to follow the development of technology. Issues to consider in this context include the range of technology that can be used, as well as when, how and at what cost. It may also require more collaboration, as systems seem to be becoming increasingly inter-linked and complex. This to reduce vulnerability, but also to ensure that technical solutions are compatible if needed.

This challenge gives rise to the following strategic questions:

- How can actors within societal security amplify the process of developing systems for reinforcement resources?
- Which type of technological development is relevant for actors within societal security to monitor, and how is this knowledge translated into action?
- How can a review of the conditions for public actors to use voluntary resources optimally be conducted? What amendments to the legislation are required to be able to utilise voluntary resources in an efficient way?

99. MSB has reinforcement resources in terms of staff and equipment in the areas of oil pollution, forest fires, hazardous substances and flooding, and is also responsible for the Swedish National Air Medevac.

100. These are listed in an appendix to the ordinance on voluntary defence operations (1994:524).

101. Swedish Civil Contingencies Agency (2009), *En strategi för förstärkningsresurser (A strategy for reinforcement resources)*, Ref. no. 2009-10825; and Swedish Civil Contingencies Agency (2012), *Huvudenkät, PM. Underlag till enkät om behov av frivilliga förstärkningsresurser (Principal survey, Memorandum. Basis for survey on voluntary reinforcement resources)*, Ref. no. 2012-2799.

4.9 Transnational challenges require increased transnational cooperation

The analysis of the five scenarios points to a long-term strategic need to continue developing cooperation with the EU and international fora on issues related to societal security. The risks faced by society may increasingly become more transnational in the future. Vital societal functions have dependencies that go beyond national borders. A disruption in one part of the world can quickly spread to other parts, see Section 3.2.9. Cross-border cooperation may be a way to increase the possibilities of international support in situations where resources in Sweden are not enough, see Section 3.1.3 on access to resources. This justifies a continued interest in EU and international collaboration. To develop cooperation within the EU and international fora represents a strategic challenge for societal security.

In several scenarios, Sweden is characterised by strong dependencies on the outside world. These dependencies can be physical flows such as food and fuel supply, but also non-material flows such as information flows and services. In order to manage threats and risks, enhanced cross-border cooperation is required. Collaboration is required at all levels, from local and regional to global.

Sweden participates in a large number of cross-border partnerships at various levels that are connected to societal security. A key area of cooperation within the EU is civil protection. Here Member States cooperate on the prevention of emergencies and crises, risk assessment, training and education, and the coordination of reinforcement resources (known as modules) for events within and outside the Union. Examples of other important areas of cooperation include the joint work conducted within the framework of the European Action Plan for CBRN¹⁰², the cooperation on the protection of critical infrastructure within the *European Programme for Critical Infrastructure Protection (EPCIP)*¹⁰³ and also with regard to security when transporting dangerous goods.¹⁰⁴

Within the Nordic region, a more intensive form of cross-border cooperation is ongoing within the field of societal security. It is based on the political agreement reached by the responsible Ministers in 2009; the so-called Haga Declaration.¹⁰⁵ The Swedish areas of responsibility within the framework of the Haga collaboration are exercises, education and CBRN.

Cross-border cooperation is also ongoing in the Baltic Sea context, with the Council of the Baltic Sea States (CBSS) as the driving body, based on the EU Strategy for the Baltic Sea Region. The Baltic Sea is central to the flow of resources and the efficiency of said flows constitutes a common interest for the Baltic Sea countries and the EU. MSB, among other things, participates in a project that involves the development of a regional risk and vulnerability analysis that also covers critical societal flows.¹⁰⁶

102. European Commission DG Home Affairs, *Securing dangerous material*, http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/crisis-and-terrorism/securing-dangerous-material/index_en.htm.

103. European Commission DG Home Affairs, *Critical infrastructure*, http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/crisis-and-terrorism/critical-infrastructure/index_en.htm.

104. European Commission Transport and Road Safety, *Dangerous goods*, http://ec.europa.eu/transport/road_safety/topics/dangerous_goods/index_en.htm.

105. Swedish Civil Contingencies Agency, *Haga Declaration*, www.msb.se/sv/Om-MSB/Internationellt/Nordiskt-samarbete/Hagadeklarationen/.

106. Council of the Baltic States, *14.3 Macro-Regional Risk Scenarios and Gaps Identification*, www.cbss.org/Civil-Security-and-the-Human-Dimension/14-3-macro-regional-risk-scenarios-and-gaps-identification.



Sweden also engages in bilateral cooperation on the topic of societal security. For example, since 2007 Sweden and the United States have had a cooperation agreement regarding research and development issues in the field of civil security.¹⁰⁷ In this way, developments in Sweden can be complemented with valuable knowledge and experience from abroad, and to some extent impact the approach and method development within the Department of Homeland Security (DHS).

MSB has tasks within the framework of the aforementioned collaborations and is also involved in other transnational projects and networks. One example is the *European Child Safety Alliance*.¹⁰⁸

A more developed and systematic work approach with international partners is needed in order to meet future challenges. The transnational dimension has to be better integrated with the national dimension. It has to be considered actively in daily work and be a constituent part of different subject areas. If international flows and dependencies should increase further, the transnational dimension will become even more evident. This means that societal emergency preparedness work has to extend beyond Sweden's borders, and be promoted in organisations and partnerships globally and regionally.

There is great potential for the development of cooperation within, for example, the EU. The research budget of the EU can for example, have a positive long-term impact if used properly. The EU's focus on preparedness and more preventative action also opens up possibilities to support these efforts in Sweden. At the same time, there is also a need at the national level to be able to prioritise between the different areas that are dealt with in the EU context. Also through being more active, opportunities can be capitalised so to influence prioritised areas favourably.¹⁰⁹

The ability to relate to, take advantage of and integrate the transnational dimension into the daily work within different subject areas needs to be further developed. Facilitating this may require additional support in various forms, such as coordination functions. However, the responsibility for integrating the transnational dimension in different subject areas remains with the organisation in charge for the area in question.

In one of the five scenarios, the EU has lost relevance and the world is marked by conflict. Such a development would certainly complicate international cooperation, but does not make it less important. Even in this future society, cooperation across national borders is required. In developing cross-border cooperation, it is necessary to follow development and adapt choices of partners and forms of cooperation.

This challenge gives rise to the following strategic questions:

- In what ways can public actors continue to conduct and develop cross-border cooperation in matters relating to societal security?
- What cooperation and development areas within the EU related to societal security should be prioritised from the Swedish side?

107. Swedish Civil Contingencies Agency, *Samverkan mellan Sverige och USA inom samhällsskydd och beredskap (Cooperation between Sweden and the United States within societal security)*, www.msb.se/sv/Om-MSB/Forskning/Pagaende-forskning/Samverkan-med-DHS-USA/.

108. European Child Safety Alliance, www.childsafetyeurope.org.

109. Brattberg och Rhinard (2012), *The EU and MSB: Implications of European Crisis Management for Swedish Societal Security*, The Swedish Institute of International Affairs.

4.10 Without climate change adaptation, vulnerability will increase

The analysis of the five scenarios provides different images of how society may be affected by climate change. If society does not adequately adapt to the changing climate, climate change is likely to give rise to an increasing number of widespread disasters and emergencies. Climate change may cause more and more widespread natural disasters (see Section 3.2.1 on natural disasters, see Section 3.2.2 on heat waves) and affect the outbreak of infectious diseases, see Section 3.2.6. Inadequate climate change adaptation may also cause the failure and disruption of vital societal functions, see 3.2.9. Climate change is potentially one of the biggest challenges society will have to face in the future. To adapt society to a changing climate therefore represents a strategic challenge for societal security.

The adaptation of society to climate change requires working locally, regionally, nationally and internationally. This work should include infrastructure as well as buildings and individual behavioural changes.¹¹⁰ Climate change adaptation is a concern for all parts of society. From a societal security perspective, there is reason to highlight the importance of implementing climate change adaptation and ensuring that the underlying aim and direction of the work are continuously updated as knowledge on the extent and effects of climate change develop.

There is no national authority with overall responsibility for climate change adaptation. Responsibility in different parts lies instead with the relevant sector authorities who are meant to work together. This makes it very important to regularly monitor the work from a national standpoint.

The county administrative boards have been instructed by the Government to coordinate, compile, report and make comparisons of the climate adaptation work conducted at the municipal level. The starting point for this work is the assessments of vulnerability to climate change and the need for climate change adaptation. The county administrative boards shall then, following consultation with relevant actors, develop regional action plans for climate change adaptation as guidelines for further local and regional climate change adaptation work. This commission is to be presented on 30 June 2014.¹¹¹

Based on a long-term societal security perspective, it is important to know how the vulnerabilities that are expected to arise with climate change are handled in different parts of society. A review of climate change adaptation within various sectors of society conducted in 2010 shows that about half of the 59 different proposals for adaptation presented in the Swedish Commission on Climate and Vulnerability have led to an initiative in the form of mandates to relevant authorities.¹¹²

The Swedish Environmental Protection Agency (Naturvårdsverket) coordinates the work of compiling Sweden's sixth national report on climate change to be presented in 2015. In accordance with the UN Framework Convention on Climate

110. IPCC (2012), *Summary for Policymakers. In: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge.

111. Ministry of Health and Social Affairs (2012), *Regleringsbrev för budgetåret 2013 avseende länsstyrelserna (Appropriation directions for budget year 2013 regarding the county administrative boards)*, 13/12/2012, S2011/9565/SFÖ, S2012/8609/SAM.

112. Rydell et al (2010), *Klimatanpassning i Sverige – en översikt (Climate Adaptation in Sweden – an overview)*, National Platform for Disaster Risk Reduction.

Change and the Kyoto Protocol, the parties shall compile and report national data on climate change, where climate change adaptation comprises one part.

It is vital that this national monitoring is performed and that this data is used to continue developing the adaptation work. Depending on the results of the follow-up, climate change adaptation may need to be more efficient through the further coordination and clarification of roles and responsibilities between different actors in society.¹¹³ Support for responsible actors may need to evolve to enable them to perform assessments and plan actions. A survey conducted by the Swedish Association of Local Authorities and Regions, (Sveriges kommuner och landsting) shows that a large proportion of municipalities lack planning support and tools to work with climate change adaptation.¹¹⁴

Unless adequate measures are taken to climate adapt infrastructure and buildings, more central control may need to be considered, for example in the form of legislation. A report from the Swedish Defence Research Agency (Totalförsvarets forskningsinstitut) and the Royal Institute of Technology (KTH) on the municipalities' perception of the rise in sea level, concludes that there is a need for clearer guidelines from the state in order to be able to handle the uncertainty surrounding the rise in sea level.¹¹⁵ It is possible that the same need exists in terms of flood risks in general and other climate-related risks.

The monitoring of climate change adaptation also needs to be performed at the international level. The countries that have signed the Hyogo Declaration and the *Hyogo Framework for Action* submit a report to the UN every two years on the work with reducing the risks and consequences of natural disasters. MSB is responsible for Sweden's report which is prepared within the framework of the National Platform for Disaster Risk Reduction, where 19 agencies and organisations collaborate.

The International Panel on Climate Change, (IPCC) will present new evaluation reports during 2013/2014, which will feature more advanced knowledge regarding the effects of climate change. Recent research suggests that climate change may turn out to be even more extensive than previously thought.¹¹⁶ This means that many of the measures that have been implemented and those that are planned within the area of climate change adaptation may prove to be inadequate or irrelevant. A global temperature rise of 4 degrees Celsius or more before the year 2100 may necessitate entirely new methods with regard to adaptation.¹¹⁷

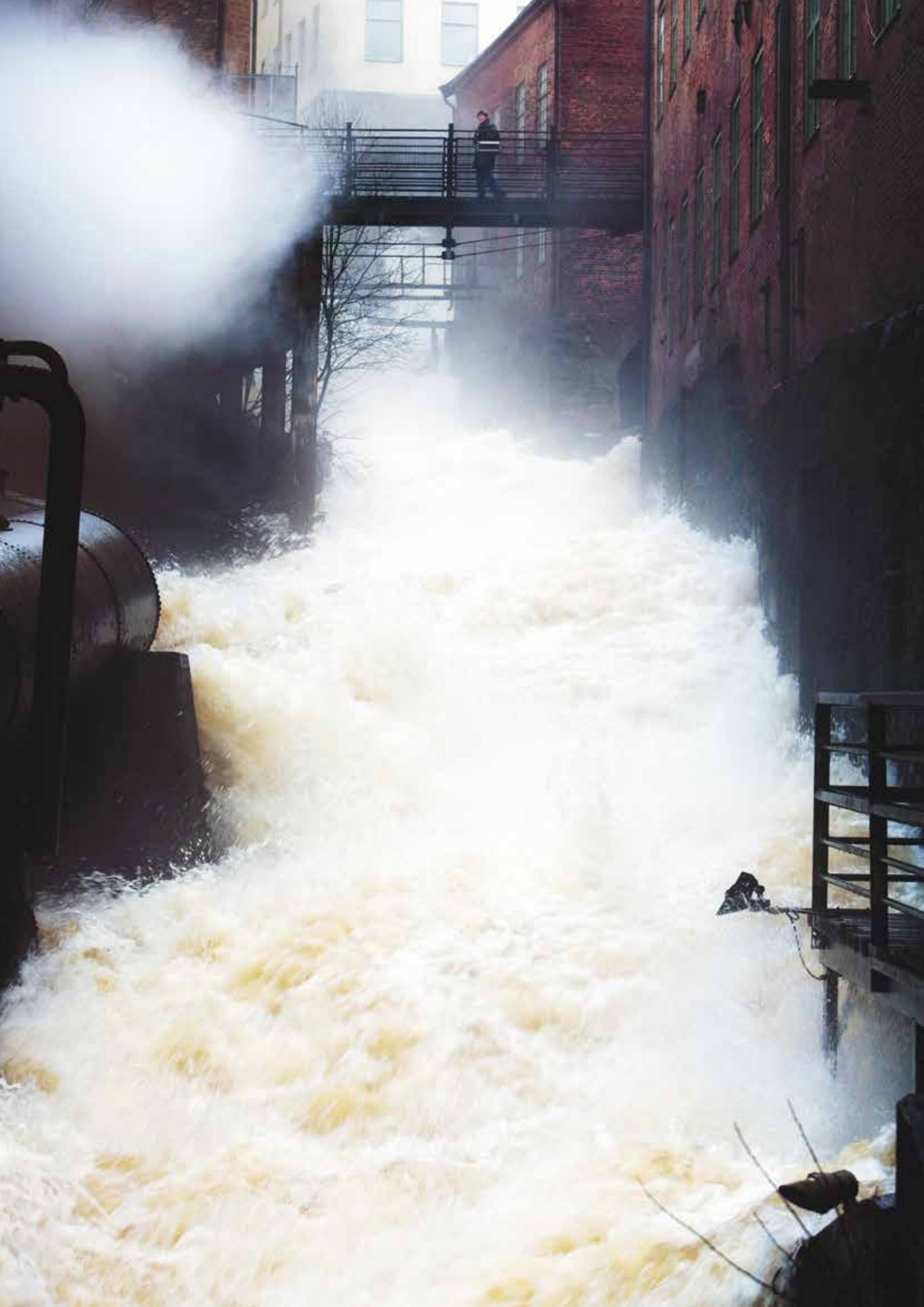
113. Rydell et al (2010), *Klimatanpassning i Sverige – en översikt (Climate Adaptation in Sweden – an overview)*, National Platform for Disaster Risk Reduction.

114. Sweden's municipalities and county councils (2011), *(Kommunernas arbete med klimatanpassning) The municipalities work with climate change adaptation*, ord. no. 5252.

115. von Oelreich et al (2012), *Framtida havsnivåhöjning i kommunal planering (Future sea level rise in municipal planning)*, FOI-R-3500 – SE.

116. See, for example, Rummukainen and Källén (2009), *Ny klimatvetenskap 2006–2009*, Kommissionen för hållbar utveckling (New Climate Science 2006-2009, Commission on Sustainable Development), Government Offices; and Wikman-Svahn and Carlsen (2011), *Högnivåscenarier för klimatförändringar (High-level scenarios for climate change)*, FOI Memo 3579.

117. Stafford Smith et al (2011), *Rethinking adaptation for a 4°C World*, Philosophical Transactions of the Royal Society, A 2011 369.



Societal security involves preparing for the unexpected. It can therefore be argued that the potential consequences of more extensive climate change need to be taken into consideration. To analyse the effects of a global temperature rise of 4 degrees Celsius or more before the year 2100 and sharp rises in sea levels may be appropriate in this context. Such an analysis has recently been performed by the World Bank and Denmark.¹¹⁸

This challenge gives rise to the following strategic questions:

- How climate change adaptation get more focus and be developed further?
- How to provide support to local and regional actors in order to accentuate climate change adaptation?
- Based on a societal security perspective, how can relevant actors systematically monitor the progress of climate adaptation in society in order to evaluate future vulnerabilities?
- What would a more extreme global temperature rise of more than 4 degrees Celsius by 2100 mean for Sweden?

118. World Bank (2012), *Turn down the heat, Why a 4°C Warmer World Must be Avoided*; and Miljöaktuellt, *Danmark rustar för klimat kollaps (Denmark prepares for climate collapse)*, <http://miljoaktuellt.idg.se/2.1845/1.424921/danmark-rustar-for-klimatkollaps>.

Concluding remarks

5. Concluding remarks

The future will always involve adverse events which cannot be foreseen. These events will occur in a society that is constantly changing. It will never be possible to prevent all risks, but society must nevertheless always strive for safety.

The challenges described in this report relate to societal security. At the same time, the ability to influence society's vulnerability and prevent risks is, to a large extent, found outside MSB and the field of societal security. The five future scenarios clearly show that prevention often begins in other parts of society. Examples include efforts to limit greenhouse gas emissions, enhance public health and counteract economic and social exclusion.

The results presented in this report are based on analyses of the five scenarios that were developed by MSB in 2012.¹¹⁹ The scenarios were used as a basis for discussion in order to reveal the many uncertainties surrounding future societal security. This report should therefore not be seen as MSB's forecast of the future. It does however highlight the challenges and opportunities facing society. These challenges and opportunities have been identified in the light of widely divergent scenarios that show alternative futures. Therefore, many of these challenges will be important even if the future turns out different to that depicted in a single scenario.

With the future comes challenges

Chapter 4 highlights strategic challenges. These challenges are brought forward as they are deemed to be relevant regardless of the nature of the future. However, one can imagine developments that would render one or more of these challenges being less prominent or that would bring other challenges up to the fore. Such developments are often referred to as *game changers*. A game changer can be described as a defining moment in history. It comes in the form of, for example, an event that is so momentous that entirely new conditions arise for acting and interacting within a particular area.¹²⁰ Examples of game changers would include an attack that somehow threatened Sweden's national sovereignty (be it through conventional or non-conventional means), a sharp drop in the confidence in democratic governance, or a natural disaster of hitherto incommensurable scope.

If the development of certain challenges in this report would take a drastic negative turn, they could constitute examples of such game changers. These challenges may seem less relevant to address today but may, as with the examples above, result in disproportionately severe consequences in the long run if proactive measures are not immediately prioritised.

119. Swedish Civil Contingencies Agency (2012), *Framtida utveckling som kan påverka arbetet med samhällsskydd och beredskap (Future developments that could affect the management of societal security)*, MSB 383.

120. See inter alia National Intelligence Council, (2012) *Global Trends 2030: Alternative Worlds*, NIC 2012-001.

One such area of importance is confidence or social capital. If the confidence and trust in the public sphere declines, it will curtail certain interventions; the conditions for strengthening the individual's capability will deteriorate; and the capacity to follow up on accidents and adverse events may be reduced. It is therefore important that public authorities act in a manner as not to erode the confidence in their ability.

If climate change adaptation is not implemented in time or to a sufficient extent, this will also pose a challenge of particular urgency. Society and vital societal functions must be operational regardless of the consequences of climate change. Therefore, measures aimed at climate change adaptation must be implemented today, as these measures can take time to plan and carry out.

A further challenge for societal security is the ability to continue treating disease. If efforts to prevent widespread antibiotic resistance in bacteria fail, both life and health are put at risk and other important public values fall under threat. It is therefore important to employ prompt measures to reduce the risk of future infection and create opportunities for better management and treatment. Antibiotic resistance is not dealt with to any great extent in this report, but MSB's strategic foresight analysis aims to provide further analyses on the subject in 2014.

The future also brings opportunities

The three challenges mentioned above can have great significance for societal security. In these scenarios, important opportunities are also presented that can strengthen societal security. Success in taking advantage of these opportunities means increasing the chances of creating a safer society in a changing world. At the same time, it has been shown during the course of the analysis that even these opportunities can be problematised.

Technological development is one such example. New technologies and materials can provide new opportunities to manage events during all stages. Just like all future knowledge, it is uncertain how the results from new technology will be used and for what purpose. It is therefore important to be open and take advantage of the opportunities new technology offers, while at the same time considering the possible vulnerabilities that this type of development can bring.

A strong society is built through the efforts of all its members together. Individuals who are prepared, and can prevent and deal with emergencies and crises, strengthen societal security. The individual's responsibility for their own and their loved ones' safety, however, requires knowledge and ability. In societies with more entrenched inequalities, there is a risk that societal security will decrease rather than increase if more responsibility is placed on individuals who are ill-equipped to take on such a responsibility. To create a safer society, it is therefore important to develop and utilise the individual's ability and commitment. At the same time, the public sector must also provide for the safety and security of vulnerable groups in society who cannot shoulder the designated responsibility.

A third opportunity is the use of voluntary resources. In the event of emergencies and crises, regular operations need to be strengthened. The extent of responsibility that can be shouldered by different organisations during emergencies and crises in the future will depend on available resources. In some futures, the need for voluntary resources may be greater than today. To be able to take advantage of volunteers, it is important to consider how voluntary resources are best employed, and how this affects equal access to societal security across the country.

Common to these three challenges and opportunities is that society's resilience increases if these issues are dealt with early and proactively. It will never be possible to predict every possible emergency and crisis, but through creating a more resilient society, it is possible to better withstand unforeseen threats and challenges.

In conclusion, MSB's strategic foresight analysis illustrates the dependencies and the complexity that exist in society and which impact societal security. Such complexity and dependencies also have a cross-border, international dimension, as events and trends far beyond Sweden can affect Swedish societal security. This means that, even in the future, measures to increase societal security will extend outside Sweden's borders and be dealt with in organisations and partnerships globally and regionally. Swedish developments within this area are not isolated, but interwoven in the world around us. The inner and the outer meld with each other in a virtually seamless interaction.

MSB's strategic foresight analysis highlights the importance of trying to place individual developments in a larger context and trying to look beyond immediate and imminent issues. As was pointed out in the introduction, the future cannot be predicted, but through monitoring the world around us one may proactively respond to possible developments. The analysis of the five scenarios has given rise to many questions. Hopefully, the results of this report can be used by all concerned actors to develop societal security. The report may also inspire approaches and method development in other countries of importance for Sweden's future.

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