

Strengthening public preparedness

Best practices and an analysis of efforts in Sweden

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Att bygga individens beredskap – En ”best practice” och en analys av åtgärder i Sverige

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Abstract

The urban human of today is becoming increasingly dependent on different functions of the society to survive, such as electricity and communications, functions which are sensitive to e.g. storms. The on-going climate change is and will further put a pressure on these functions. Concerns have risen that today's public is limited in its ability to independently deal with the consequences of societal crises. Therefore, this thesis has examined how public preparedness can be strengthened according to research, if efforts to build public preparedness in Sweden are in line with the research, and how these efforts can be improved. To answer the problem statements, a literature study on risk communication and participatory approaches to disaster management was performed in order to craft a best practice of the area. The best practice then formed a framework to analyse efforts to build public preparedness launched by Swedish Civil Contingencies Agency, Swedish Civil Protection Association, and the Cities of Malmö and Gothenburg. The analysis revealed that the efforts partly corresponded to the best practice, but that there are many possibilities of improvement. The main finding of the thesis is that public preparedness and the matter of strengthening the same have to be discussed on a political level in order to set clear responsibility (public – municipality – state) frameworks in place.

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Preface

This thesis has been written as a Master of Science thesis at the Division of Risk Management and Societal Safety at the Faculty of Engineering, Lund University.

During the work with the thesis, my advisor Peter Månsson, PhD candidate at the Division of Risk Management and Societal Safety, has provided invaluable input on my ideas and my writing. Maybe most important, he has supported me through the process and helped see that famous light in the tunnel.

I would also like to thank the people who took the time to participate in the interviews. Without your valuable thoughts on problems and possibilities within the area of public preparedness, my thesis would not have been possible.

Last but not least, a big thanks to friends and families who have supported me and persistently have believed in me.

Gothenburg, 16 April 2015

Joel Rödström

Summary

This thesis examines how efforts to strengthen public preparedness towards crises should be designed according to current research. It also examines how efforts have been designed in Sweden, and if the design aligns with the aforementioned research. The thesis concludes with a discussion on how efforts to improve public preparedness can be developed.

The thesis begun with a literature study, aimed to identify and compile a list of “best practices” regarding implementation of activities to enhance public preparedness. According to the literature, the involvement of the public is crucial in the design of the effort. Involving the public lets them contribute with knowledge, and it opens up possibilities to “understand” the public (e.g. age, culture) and how the efforts should be designed accordingly. The literature also accentuated the need to design the information so that it is easy to understand for the recipient, that the information is positive (i.e. that it entails tangible advice on how to deal with a problem), and that the recommended actions are easy to perform.

Subsequently, a number of efforts that are currently being performed or have been performed earlier by Swedish actors (MSB, Cities of Gothenburg and Malmö, Swedish Civil Protection Association) were analysed on their compliance with the best practice found earlier. Interviews with people active within the field were performed in parallel. The interviews were themed on difficulties and possibilities, but also the efforts mentioned above since some of the interviewees were involved with these.

The analyse indicates that the legislation on the area is unclear, there is a lack of cooperation between actors on the same level, and that campaigns need to be repeated and launched in a greater number of channels.

The possible improvements that were surfaced during the work with the thesis are presented below.

- Stipulate which authority/ies that should carry the responsibility of enhancing public preparedness and how such efforts should be funded. The result of the discussion should become manifested in the legislation.
- Make MSB responsible for coordinating research, designing processes and producing material in support of public preparedness campaigns, while the municipalities execute them locally.
- The Swedish Association of Local Authorities and Regions (SKL) should include the citizens’ perception of their own safety, preparedness and responsibilities in a crisis, when enacting statistics concerning the performance of Swedish municipalities (i.e. *Öppna jämförelser*).
- Municipalities should exploit possibilities of cooperating to reduce costs (e.g. time and money) connected with the implementation of public preparedness campaigns.
- Efforts to improve public preparedness should be aligned with the needs and capabilities of intended target groups and advices should be easy to understand and adopt.

- Involve the public to a greater extent, with the purpose of improving the design of the efforts but also to create engagement in the issue (the *Coexist*-project as well as *Malmöpanelen* serve as examples of possible arrangements in a Swedish context).
- Identify groups that are hard to reach and develop measures to overcome these barriers. To this effect, one should expand the scope of languages as well as channels used to communicate. Especially social media is underutilized.
- Move from “one-time” campaigns to sustained efforts in order to increase impact.
- Building preparedness is complicated when the society is seemingly safer than ever. Therefore, successful enhancement of the public preparedness needs cooperation between actors and ingenuity.

Sammanfattning

Denna uppsats undersöker hur insatser för att främja individens beredskap mot katastrofer bör utformas enligt aktuell forskning. Uppsatsen undersöker även hur faktiskt insatser har utformats i Sverige, och om utformningen stämmer överens med forskningen. Uppsatsen avslutas med att diskutera hur utformningen av insatser för att främja individens beredskap mot katastrofer kan förbättras.

Uppsatsen inleddes med en litteraturstudie, med målet att skapa en så kallad ”best practice”. Enligt litteraturen bör vikt läggas vid att involvera allmänheten i utformandeprocessen. En deltagande process skapar engagemang och kunskap kring frågorna hos befolkningen och allmänhetens kunskaper kring tilltänkta målgrupper (ex. ålder, kultur, språk, användbara kommunikationskanaler) är också viktiga för utformningen av själva insatserna. Litteraturen framhöll också att det är viktigt att informationen är lätt att förstå, att den är positiv (visar hur man avhjälper problem) samt att de rekommenderade åtgärderna är enkla att utföra.

Därefter undersöktes hur ett antal insatser som utförts eller utförs av några aktörer (MSB, Göteborg och Malmö stad, Civilförsvarsförbundet) i Sverige, har utformats. Egenskaperna analyserades sedan utifrån vad som framkommit i litteraturstudien. Parallellt med undersökningen av insatserna intervjuades personer som är aktiva inom området. Intervjuerna kretsade kring problem och möjligheter, men även de insatser som inkluderades i uppsatsen då vissa av intervjuobjekten arbetade med dessa.

Analysen visade att lagstiftningen som berör området inte är tillräckligt tydlig när det gäller ansvar, att samarbete mellan aktörer på samma nivå inte utövas, och att man bör använda fler kanaler och repetera budskapet fler gånger då man går ut med information i kampanjer.

Nedan presenteras de punkter för förbättring som framkommit under arbetet med uppsatsen.

- Initiera en diskussion om vem som skall bära ansvaret för att stärka individens beredskap och hur sådana aktiviteter skall finansieras. Diskussionen skall utmynna i en klar lagstiftning.
- Utse MSB till samordnare för aktiviteter ämnade att bygga individens beredskap, men låt kommunerna stå för det lokala utförandet.
- Sveriges Kommuner och Landsting bör inkludera frågor om allmänhetens uppfattning om sin säkerhet, beredskap och ansvar i samband med kris i deras årligt återkommande undersökning *Öppna jämförelser*.
- Kommunerna bör samarbeta med varandra i samband med arbete för att höja individens beredskap, för att på så sätt reducera dessa aktiviteters kostnader.
- Utveckla arbetet med att utforma kampanjer och dylikt så att alla grupper kan ta till sig informationen.
- Förbättra involveringen av allmänheten, med syftet att förbättra utformningen av aktiviteter och för att skapa engagemang bland allmänheten i frågan. Projekten *Coexist* och *Malmöpanelen* i Malmö kan vara förebilder.

- Identifiera grupper som kan vara speciellt svåra att nå, och utveckla material och organisation för att bättre nå dessa grupper. Till exempel handlar detta om att använda fler språk men även fler kanaler, speciellt sociala medier är underutnyttjade.
- Repetera kampanjerna i större utsträckning än vad som görs idag.
- Att bygga individens beredskap mot kriser är svårt när samhället tillsynes är säkrare än någonsin. Insikten kring detta leder till att behovet av samarbete och kreativitet är avgörande för framgång.

Table of contents

1	Introduction	1
1.1	<i>Background</i>	1
1.1.1	Natural disasters and climate change in Sweden	1
1.1.2	The Hyogo Framework for Action (HFA)	2
1.1.3	Changing capacity to respond to disaster	2
1.1.4	Disaster management – a responsibility at all levels	3
1.2	<i>Purpose</i>	3
1.3	<i>Aims</i>	4
1.4	<i>Problem statements</i>	4
1.5	<i>Delimitations</i>	5
2	Method	6
2.1	<i>Process</i>	6
2.2	<i>Literature study</i>	6
2.3	<i>Data collection</i>	7
2.3.1	Interviews	7
2.3.2	The analysed efforts	9
2.4	<i>Validity and reliability</i>	9
3	Swedish crisis management	10
4	The individual in crisis management	11
4.1.1	Identify collaborations and skills already existing in the local community	11
4.1.2	Foster the idea that that preparedness is everyone's responsibility	12
4.1.3	The public needs support to utilize their resources	12
4.1.4	Develop the collaboration between authorities and the public	12
5	Communicating risk	13
5.1	<i>Best practice of risk communication</i>	13
5.1.1	Involve and listen to the public	13
5.1.2	Know the public	13
5.1.3	Quantitative message properties	14
5.1.4	Qualitative message properties	14
5.1.5	Positive, concrete examples	14
5.1.6	Seeing peers taking action	14
5.1.7	Simplicity and effectiveness of action	15
5.1.8	Openness and honesty	15
6	Analysis	16
6.1	<i>The efforts analysed</i>	16
6.2	<i>The best practices and the efforts</i>	17
6.2.1	Involve and listen to the public	17
6.2.2	Know the public	18
6.2.3	Quantitative message properties	19
6.2.4	Qualitative message properties	21
6.2.5	Positive, concrete examples	22
6.2.6	Seeing others taking action	24
6.2.7	Simplicity and effectiveness of action	24
6.2.8	Openness and honesty	24
7	Results	25
7.1	<i>Problem statement 1</i>	25
7.2	<i>Problem statement 2</i>	25
8	Discussion	26
8.1	<i>Involve and understand the public</i>	26

8.2	<i>Diversify channels and repeat message</i>	27
8.3	<i>Resources and responsibilities</i>	28
8.4	<i>The problem of the un-rocked boat</i>	29
8.5	<i>Remarks on improving methods and suggestions on further studies</i>	30
9	Conclusions	31
10	References	33
11	Appendix A	36

1 Introduction

1.1 Background

1.1.1 *Natural disasters¹ and climate change in Sweden*

According to the Organization for Economic Co-operation and Development (OECD), the impact of natural disasters around the world has increased since the early 1960s. During the last century, disasters have annually led to an average of 79 000 casualties, and around 200 million people have been affected. In the future, the impact of natural disasters is likely to be even more severe. Climate change and the subsequent increase in frequency and amplitude of extreme floods, storms and droughts may increase the risk posed by natural disasters (OECD, 2003).

On the basis of the global climate change models in the *Fourth Assessment Report* published by the Intergovernmental Panel on Climate Change (IPCC) in 2007, the Swedish Commission on Climate and Vulnerability has made regional model predictions of the future climate change in Sweden. The results are presented in the report *Sweden facing climate change – threats and opportunities²* (SOU 2007:60).

The resulting problems can be summarized (SOU 2007:60, 2007):

- Floods: The increased risk of floods will mainly affect buildings, roads and railways. Today six million square meters of building area is at risk of flooding once in 100 years, a number which is likely to increase. Contamination and damaged pipes can affect the supply of drinking water. Prolonged power outages can result from flooded infrastructure.
- Landslides: Exceptional rainfall and variations in ground water level increase the risk of landslides. It is estimated that 200 000 buildings are situated in areas where the risk of landslides will increase due to climate change.
- Coastal erosion and sea level increase: Blekinge, Scania, Halland and the west coast are the most exposed areas. According to simulations of IPCC, the sea level will rise between 9 and 88 cm in Swedish waters. This combines with more prevailing westerly winds, causing an increased risk of flooding of low-lying areas, of which many are inhabited.
- Heat waves: During the European heat wave of August 2003, 33 000 people are supposed to have deceased because of the heat wave. Older and ill people

¹The term “natural disaster” has in later years more and more been replaced by terms like “disaster caused by natural hazards” or “disaster caused by natural events”, in order to emphasize that these type of disasters are not natural but instead caused by human vulnerability and exposure (Wisner, Blaikie, Cannon, & Davis, 2003). Despite this the term “natural disaster” is used throughout the thesis.

² Klimat- och sårbarhetsutredningen, SOU 2007:60

are most at risk. The decreased number of cold days will decrease the number of deaths due to low temperatures, but this effect is weaker.

- Storms: Models predict different scenarios on future storms. Some models show an increase of the strongest winds in most parts of Sweden. Power supply and telecommunication are vulnerable, but this infrastructure is increasingly being storm proofed.
- Spreading of disease: When increased precipitation combines with increased temperatures, the risk of contamination of drinking water and food, and prevalence of vector born diseases (e.g. malaria, Lyme disease) is likely to increase.

In 2013 the IPCC released the *Fifth Assessment Report: Working Group I – The Physical Science Basis*. The scientific evidences of anthropogenic impact on the earth's climate are stronger today than during the time of writing the *Fourth Assessment Report*. The impacts of climate change can be seen today already (Kjellström, 2013).

1.1.2 The Hyogo Framework for Action (HFA)

In 2005 the World Conference on Disaster Reduction was held in Hyogo, Japan. The conference dealt with a strategic and systematic approach of reducing vulnerability and risk to hazards for communities, with the following expected outcome: “The substantial reduction of disaster losses, in lives and in the social, economic and environmental assets of communities and countries”. The conference adopted the *Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters*. The HFA identifies a number of *priorities for action*. A number of these relates to building awareness and preparedness activities to reduce disaster risk. Priority for action number three, *Use knowledge, innovation and education to build a culture of safety and resilience at all levels*, stresses the importance of a public who is motivated and informed to create a culture of resilience and disaster prevention. Priority for action number five, *Strengthen disaster preparedness for effective response at all levels*, argues that the impacts and losses from disasters can be reduced if individuals, communities and authorities are prepared and have the proper knowledge and resources to respond (UNISDR, 2005). In March 2015 UNISDR hold a conference in Sendai, Japan, with the goal to form the post 2015 framework for action (UNISDR, 2015).

1.1.3 Changing capacity to respond to disaster

During the years after the Cold War the armed forces of Sweden have transitioned from a sizeable defence force aimed to deter or respond to an invasion, into a smaller but rapid action force intended to be deployed abroad as well. Compulsory military service has been made voluntary; hence the share of population who undergoes military service has been decimated. One outcome of this transition is that the

possibility for the armed forces to provide support to the civil society in the event of a crisis has to some extent decreased (Ödlund, 2008).

According to Sundelius, public institutions in Sweden have during the last decades seen a decrease in resources and have partly been privatized. This has diluted public responsibility for a proactive crisis management (i.e. prevention and preparedness). The responsibility for the crisis management is today shared between public and private institutions, and the actual organization is blurry (Sundelius, 2005).

1.1.4 Disaster management – a responsibility at all levels

A possible result of the end of the Cold War is that the general public's mental preparedness to crisis has decreased. The intelligence analysis of the Defence Commission of 2007 shares the concern that the Swedish community lacks a common understanding of what a serious crisis really means (Lennmarker, et al., 2007). Instead, the Swedish public seem to expect the authorities to provide proper management of any situation (Enander & Johansson, 1995). Concerns that this approach is negatively correlated with levels of preparedness and capacity of the individual have been presented by Otway and Wynne (1989). In a study performed after the storms Gudrun and Per (in 2005 and 2007 respectively), households in Östergötland, Sweden, were interviewed about their thoughts on responsibilities of preparing for power outages. One third of the respondents claimed to have no responsibility to prepare, and one third claimed that they, in an ideal world, should not have the responsibility to prepare but in practice they had to in order to endure the power outage (Palm, 2009).

The *whole-of-society* (WOS) approach to societal hazards circulates around the idea that the whole community has to be directly involved and play a part in order to create a resilient society. This approach has superseded the *whole-of-government* approach, which has been criticized to not be inclusive enough. According to the WOS approach, individuals and families are often the ones most affected by a crisis, or are the ones who arrive at the disaster site before conventional rescue services. Hence, according to Lindberg and Sundelius, they should be made a central constituent of societal security and resilience (Lindberg & Sundelius, 2012).

1.2 Purpose

The climate change is likely to increase the frequency and amplitude of natural disasters worldwide, also in Sweden. The strain and impact on a society with little disaster experience, such as the Swedish society, has been evident during recent years, for example during and after the Gudrun storm in 2005. The HFA accentuates the importance of efforts to enhance public motivation and knowledge in order to strengthen disaster preparedness and resilience. According to the whole-of-society approach, the capacity of individuals is crucial for societal disaster resilience and

security. At the same time many individuals do not seem to view themselves as responsible to cater for their own preparedness and safety.

Against this background, the purpose of this thesis is to enhance the understanding of how risk communication can be used to strengthen the public to prepare for climate change related disasters. The thesis will analyse activities launched by a handful of actors in Sweden to increase public preparedness related to climate change. Moreover, the thesis aims to produce a number of recommendations regarding how efforts to increase individual preparedness can be improved in Sweden.

1.3 Aims

The work with the thesis will commence by acquiring a more profound understanding of the current best practice of risk communication and how the individual can be involved in disaster management. This will be done by scrutinizing scientific and grey literature.

Parallel to the literature study, interviews will be conducted with people that directly or indirectly are working to enhance public preparedness in Sweden. The interviews will be based around the *what*, *how*, and *why* of the efforts. The interviewees are working with public preparedness at different administrative levels: The Swedish Civil Contingencies Agency, MSB (central governmental authority), Swedish Civil Protection Association, CF (volunteer organisation), and the cities of Malmö and Gothenburg (2nd and 3rd largest municipalities in Sweden).

Then follows an analysis, where the actual routines in the cities above will be related to the theories and best practices of risk communication. Suggestions on how the efforts of building public preparedness can be developed will be presented.

1.4 Problem statements

The problem statements that will be answered by this thesis are:

- How should risk communication be designed in order to optimize the outcome of public preparedness efforts?
- Have activities been performed to raise public preparedness in Sweden? If so, are their designs aligned with the guidelines found in the scrutinized literature?
- How can the examined efforts and frameworks to strengthen public preparedness in Sweden be further improved?

1.5 Delimitations

To make the thesis feasible within given time limits, some delimitations are made.

Risk communication is used to make the public aware of many dangers, and hence the theories found during the work process can be applied to other dangers than disasters related to climate change. Because of the limited time available, however, only activities associated to developing public preparedness to climate change related disasters will be analysed.

For the interview study, the number of interviewees will be limited to maximum three from each of the four Swedish bodies MSB, City of Gothenburg, City of Malmö and CF.

Another delimitation was made connected to the literature study. Only Scopus³ was used to search for peer-reviewed literature.

³ www.scopus.com

2 Method

This section describes the process of the thesis and the methods used to answer the problem statements.

2.1 Process

The qualitative research method was deemed as appropriate considering the nature of the problem statements. The qualitative research method is less standardized and more flexible compared to the quantitative method, and can answer questions of the type *why* and *how* (Backman, 1998). Since the purpose of the thesis was to capture qualitative aspects of risk communication used to improve public preparedness, and how actions within this field are carried out in Sweden, a qualitative research process was believed to fit best.

The elements of the process are presented in Figure 1. The elements were not carried out in a strict order. Rather, they were performed somewhat in parallel to one another. By using this parallel approach it was possible to let the elements direct each other. According to Backman, this iterative process is characteristic for the qualitative research method.

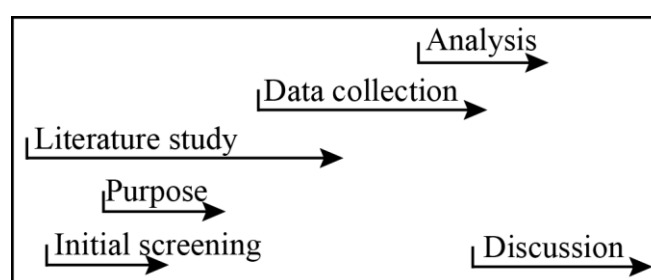


Figure 1: Rough presentation of how the thesis' elements were carried out.

2.2 Literature study

The literature review had two purposes. In the initial phase, the literature review provided information about issues within the area worth attention. Hence, it inspired towards establishing problem statements for the thesis. Once the problem statements were established, the literature study continued with the quests to find the best practices of risk communication, to examine the role of the public in the Swedish crisis management system and to identify possible rationales to involve the public in crisis management.

Peer-reviewed literature were found using Scopus, and grey literature were found via Google. Libris⁴ was used to find books, particularly books on method.

⁴ <http://www.kb.se/libris>

2.3 Data collection

To answer the problem statements, basically two elements of data collection were carried out. People active within the field of public preparedness at different administrative levels were interviewed about their views on different aspects of the topic. In parallel, information about the design of the campaigns and other information efforts to raise levels of public preparedness was gathered, so their design could be compared with the best practice.

2.3.1 Interviews

The qualitative interview has been presented as a seven-step process (Kvale, 1997). The steps cover the stage of the initial ideas, to the final report. The seven steps are:

1. Thematize
2. Plan
3. Interview
4. Transcribe
5. Analyse
6. Verify
7. Report

Thematize

The aim of the first step was to answer the three questions *why*, *how*, and *what*. *Why* answers to the question why the interview should be performed, i.e. the purpose. The purpose with the interviews was to acquire views and thoughts on strengthening public preparedness from people active within the field.

Answering the question *what* involves acquiring knowledge about the subject of the interviews. Knowledge of the subject is critical to formulate questions that are relevant and reveals if the knowledge coming from the interviews is new knowledge and has scientific value (Kvale, 1997). In order to acquire knowledge about the subject a literature study was performed. See section 2.2 above.

How answers the question how the interview will be performed. This question shall be answered after *why* and *what* (Kvale, 1997; Trost, 2005). For the purpose of the interview, a qualitative interview was selected, see section 2.3.4 below.

Plan

In order to capture views on improving public preparedness from people active within the field, interviewees working at MSB, two Swedish cities and CF were selected. The selection was based on position and experience within the field. Each interviewee can to some extent be seen to be active at different levels of the field; hence the design tries to capture different perspectives. The interviewees in the interview were:

Table 1: The interviewees and their associations

Anna Agarwall	MSB
Christina Andersson	MSB
Elisabeth Niklasson	CF
Lotta Nyman	MSB
Henrik Ohlén	City of Gothenburg
Jan-Peter Stål	City of Malmö
Marcus Årskog	MSB

All but one interview were performed over telephone, since available resources did not make travelling possible. The interview with Henrik Ohlén was performed in person at the interviewee's office.

Interview

The interviews were conducted in a semi-structured way, i.e. they were based on a set of predefined questions, but side-tracks were allowed (Gill, Stewart, Treasure, & Chadwick, 2008). The semi-structured approach gives multiple interviews a common ground, which makes them easier to compare, albeit it allows for spontaneous questions (Jacobsen, 1993). These types of interviews capture, as the name implies, qualitative phenomena, such as the culture of an organisation or the individual's experience of a concert. Since the interviews aimed to capture personal views of people working within the Swedish crisis management system within the field of public preparedness, the interviews were performed in a semi-structured manner.

The interviews were guided by a number of questions (also known as interview plan, see Appendix A), but additional questions were spontaneously added during the interview. The questions were modified depending on the position of the interviewee. The interview plan was sent to the interviewee a few days before an interview was scheduled. This was done in order to give the interviewee a chance to reflect on the topic and to start a thought process about the topic of the interview.

Transcribe

The interviews were recorded and transcribed, in order to make sure that what was said during the interview is reflected without bias. The record also acted as a permanent record of what was said (Gill, Stewart, Treasure, & Chadwick, 2008).

Analyse

When the interviews were transcribed, an analysis was performed by identifying statements and themes that were relevant with respect to the research questions of the thesis. Statements and themes were selected on the basis of their relevance to the problem statements.

Verify

When the thesis was finished, the recordings of the interviews were deleted. The parts from the interviews that were included in the analysis were sent to the corresponding interviewee, so each interviewee was given the chance to confirm the statements made, hence accomplishing response validation.

Report

During the main analysis of the thesis those statements were used to contribute to the themes that were identified. Some of the interviews were analysed once again, in order to further contribute to the main analysis.

2.3.2 The analysed efforts

The efforts that were included in the analysis were selected in order to capture a broad selection of efforts from different actors on different levels. The efforts included were launched by one central government authority (MSB), two municipalities (City of Gothenburg and City of Malmö) and one voluntary organisation. The efforts are further described in section 6.1.

2.4 Validity and reliability

The sources used to present the best practice of risk communication were acquired through different search databases. The majority was found with the scientific search engine Scopus. Others were found using the general search engine Google or the Swedish national library search engine Libris.

The sources can be divided into two categories. One category encompassed peer-reviewed scientific articles which ensures that the contents have been scrutinized and found to be credible and of high quality. The other category consisted of non-peer-reviewed sources, mainly books or reports. The reports were all published by credible bodies such as MSB and different UN organs. These reports often provide their message in the form of guidelines, and are probable to have enhance on how practitioners within the field actually design their measures, why it would be interesting to include them in the literature study.

The interviewees were selected due to their position and experience within the field. All of the interviewees had spent a minimum of four years in the profession to be deemed appropriate to interview. A couple of days before the interviews, each interviewee was given the chance to read through the questions, in order to grasp the general subject of the interview and reflect upon the questions. Attention was given to the crafting of the question, to make certain that they were clear and that the risk of misunderstanding was minimized.

3 Swedish crisis management

The Swedish crisis management is based on three principles. The first principle is the *principle of responsibility*. Actors responsible for an activity in normal conditions are also responsible for the activity in the event of a crisis. The second principle is the *principle of parity*, which means that the localisation and organisation of activities should, as far as possible, be the same under normal conditions as during crisis. The third principle is the *principle of proximity*. It states that crisis should be managed at the lowest level possible. One consequence of these three principles is that a lot of responsibility is given to the municipalities for the crisis management (Nilsson & Eriksson, 2008). If the municipality's resources are not sufficient and it fails to respond to a disaster, the municipality can get support from the second level, the county administrative board. If the crisis is too severe to be handled properly even on the second level, the state through government agencies steps in (MSB, 2010).

Crisis management in Sweden is to a large extent governed by one legislation (SFS, Lag (2006:544) om kommuners och landstings åtgärder inför och vid extraordinära händelser i fredstid och höjd beredskap, 2006a) and one ordinance (SFS, Förordning (2006:942) om krisberedskap och höjd beredskap, 2006b): *Legislation on municipalities' and county councils' measures before and during extraordinary events in time of peace and increased preparedness* and *Ordinance on emergency preparedness and increased readiness* (MSB, 2012). While being absent in the legislation and ordinance mentioned above, the role of the public is mentioned elsewhere. In bill 2007/08:92 it is stated that the state carries the main responsibility for the national safety, while at the same time individuals and companies have responsibilities to guard their life and property, and hence have a part to play in crisis management. It is also the government's view that volunteers play an important role in crisis, and that their willingness to help needs to be better capitalized (Bill 2007/08:92).

The bill 2007/08:92 also points to the importance of providing individuals and others with information on the risks that exist, so they can manage the risk. The government considers it important to cater for the different needs of individuals, identify different target groups and provide information in other languages than Swedish (Bill 2007/08:92).

In government communication 2009/10:124 it is stated that since the individual has a responsibility, the individual needs to be prepared and handle situations and needs that may occur in the event of a crisis. Even though the amount of information and education on Sweden's crisis management is extensive, the level of knowledge is not sufficient among the public. MSB should assist the municipalities in helping the individuals to prepare for crises (Comm. 2009/10:124).

4 The individual in crisis management

The approach to emergency management is described by Neal as a continuum, where one end (command and control) is characterised by standards and hierarchies, and improvisation is seen as counterproductive. The other end (emergent norms) recognises the importance of flexible ad-hoc structures and abilities to perform disaster management in the event of a disaster (Neal, 1995).

In order to build an effective system of disaster preparedness and response, it is important to harvest those *emergent structures* according to some research. Individuals and communities should be involved, together with relevant institutions and NGOs (Newport & Jawahar, 2003). When disaster strikes, the authorities will be working at their maximum capacity, and the role of a prepared public can be crucial for successful disaster management (Coppola, 2011). The idea of involving other than authorities in disaster management has grown stronger during recent years (Enander A. , 2005). The involvement goes beyond informing about hazards, it's about building capacity to deal with hazards from the bottom and up (Victoria, 2002).

Spontaneous public engagement in response to disasters has been observed in past disasters. Examples include search and rescue teams, clearing of debris and first aid (Neal, 1995). After the Gudrun storm in 2005, both spontaneous and previously organized (though not aimed at disaster management) congregations and individuals took part in clearing of power corridors and roads, checked the status of neighbours and organized information meetings (Guldåker, 2009).

Even though the engagement of the public can be beneficial to disaster response, there are also challenges associated with the phenomena. Gatherings of willing volunteers may for instance overwhelm disaster managers and congest the disaster site (Drabek & McEntire, 2003).

In order to identify themes for involving the public in disaster management, literature on the subject was scrutinized. The themes identified are presented below:

1. Identify collaborations and skills already existing in the local community.
2. Foster a public understanding that preparedness is everyone's responsibility.
3. The public needs to utilize their resources; they are not victims of disaster.
4. Formalize and develop the collaboration between authorities and the public.

4.1.1 *Identify collaborations and skills already existing in the local community*

Within the society, there exist institutions and collaborations which all have certain functions in non-crisis conditions. The web they form is sometimes referred to as *civic infrastructure*. Within those institutions and collaborations, skills may exist that can be important in order to deal with the consequences of a disaster. By integrating

the civic infrastructure with the disaster management of authorities, these skills can be utilized in the event of a disaster (Schoch-Spana, Franco, Nuzzo, & Usenza, 2007; FEMA, 2011; NRC, 2011). Community leaders know their communities, and provide short cuts to the understanding of the community (FEMA, 2011). Linnell points to the importance of utilizing examples of concepts which are already working, and learn from these (Linnell, 2013).

4.1.2 Foster the idea that that preparedness is everyone's responsibility

The idea that it is the sole responsibility of the authorities to deal with the effects of disasters can inhibit the participation of the community. By educating the public, the awareness of the hazards and how to reduce the risk can be increased, which will make community involvement more likely (Chou & Wu, 2014).

4.1.3 The public needs support to utilize their resources

Focusing on the risk won't increase preparedness. Since risks have different impacts on different communities, the focus should be on how a particular community can reduce the risk (Linnell, 2013). People are in the possession of resources, which, if utilized, can play an important role in independently preparing for and recovering from disasters (Aalst, Cannon, & Burton, 2008). Disaster risk reduction education is considered as the most important factor in reducing the impacts of disasters (Shaw & Izumi, 2014, s. 116).

4.1.4 Develop the collaboration between authorities and the public

In order to accomplish trust and a rigid framework of collaboration between authorities and the public, collaborations must be seen as a long-term activity. Setting up something just when a disaster can be anticipated is not enough (Linnell, 2013).

5 Communicating risk

Risk communication has been described by Rowan as efforts aimed to raise awareness, motivate action, educate, reach agreements and build trust in the communicator (Rowan, 1991). Renn stresses the importance of modifying risk communication in order to suit the receiver's specific needs. With the right information, people can make informed decisions about which measures to implement in order to attain their intended levels of preparedness and safety (Renn, 2005). During the last two decades, risk communication has changed from being characterized by a sender-receiver setup, towards focusing on a communication where both parts take part in a learning process (Kellens, Terpstra, & De Maeyer, 2013)

5.1 Best practice of risk communication

In order to identify themes in the current best practice of risk communication and strengthening public preparedness, a literature study was conducted.

The main themes identified in the literature were: (1) *Involve and listen to the public*, (2) *Know the public*, (3) *Quantitative message properties*, (4) *Qualitative message properties*, (5) *Positive, concrete examples*, (6) *Honesty and openness*, (7) *Organisational properties*, (8) *Seeing peers taking action* and (9) *Simplicity and effectiveness of action*. The nine themes are presented below.

5.1.1 *Involve and listen to the public*

To involve the public in the process is mentioned as a key best practice by all sources. Strong relationships should be formed with community leaders and other important figures before the event (Janoske, Liu, & Madden, 2013). If groups of peers and social networks are activated they can, through interpersonal communication, help change attitudes and behaviours (Chagutah, 2009). Sometimes agents from outside a particular community will not be as effective delivering a message as a member of that community would be. Risk dialogue can take place in the form of community meetings and forums, which also provides a chance for all stakeholders to discuss the risk (Sellnow, Ulmer, Seeger, & Littlefield, 2009).

5.1.2 *Know the public*

According to the reviewed literature, there are a number of reasons to analyse *who* the public are, in terms of culture, gender, age, education and risk perception (Sellnow et al., 2009). Different target groups should probably be targeted with different messages (Chagutah, 2009). Language proficiency and level of education can affect the understanding of the message. Extra attention has to be given when communicating with those with extra needs (Janoske et al., 2013). When the National Guard built a tent city surrounded by a fence in Watsonville, California, after the Loma Prieta earthquake, some of the Latino families choose to seek shelter elsewhere.

This has been attributed to the tent city's and the National Guard's resemblance to Central American prisons and death squads, respectively. If the organizers of the tent city had known the Latino families' history and let that reflect the design of the city, the Latino families might have stayed (Neal, 1995).

5.1.3 Quantitative message properties

A risk communication message shall be delivered in different channels, both conventional and unconventional, with the target group in mind (Chagutah, 2009). The message needs to be repeated over time (Janoskeet al., 2013) (Wood, Mileti, Kano, Kelley, Regan, & Bourque, 2012). Other research also suggests the message to be repeated, confirmed and delivered by official sources in different channels (Mileti & Fitzpatrick, 1992; Tierney, Lindell, & Perry, 2001). A comprehensive list of possible channels to use for communication of public education by Coppola (2011, s. 277) is presented in the analysis, section 6.

5.1.4 Qualitative message properties

The message should be delivered in clear and concise ways, and be easy to understand (Janoskeet al., 2013). By using focus groups the message can be refined and improved over time to reach the desired effect (Sellnow et al., 2009). Is the message compatible with what is known about the public, and does the message come at the right time (Chagutah, 2009)?

A construct of the actionable risk communication model (ARC) is that messages have to be consistent between sources and messages, imperative in communication theory and the diffusion of innovations theory. Conflicting information will cause confusion amongst the recipients, questioning of the information and inhibit action taking (Wood, et al., 2012).

5.1.5 Positive, concrete examples

Findings from research strongly suggest that the information received is a key motivator when aiming to build preparedness in a context where real disasters are absent. In order to build preparedness, research suggests the information to contain specific directions on what actions to take, and how these actions will steer away from damage in the future (Wood, et al., 2012). The importance of specific and concrete suggestions of actions is confirmed by Mileti and Fitzpatrick (1992) and Gollwitzer (1999).

5.1.6 Seeing peers taking action

Information of actions to take can be reinforced by seeing others performing the same actions. The closer related one is to the person seen performing the actions, the greater the effect. Notably, this effect is more efficient on strengthening preparedness

than reading or hearing a message about the need to take action (Wood, et al., 2012). Further, according to the diffusion of innovations theory (Rogers, 2004), if the actual results of an innovation can be observed, the innovation is even more likely to be adopted (Wood, et al., 2012). In a study by Mileti and Fitzpatrick (1992), individuals who saw peers taking measures to handle a certain risk were more likely to engage in seeking information about this risk.

5.1.7 Simplicity and effectiveness of action

According to the diffusion of innovations theory (Rogers, 2004), innovations that fill a gap or perform something more effectively are more likely to be adopted. If actions are encouraged they should be as similar as possible to actions already carried out by the receiver (Janoske, Liu, & Madden, 2013). It has also been shown that the perceived effectiveness of certain actions dealing with earthquake risk is a stronger incentive for performing those certain actions than the perceived risk (Wood, et al., 2012). In other words, how effective an action is perceived to be in containing a risk, is a stronger incentive to take action than the perception of the risk itself.

Other authors contend that in order for the receiver of information to take action, the information has to provide examples of measures that can be taken to deal with the threat, and evoke the feeling that the addressee is capable of putting these measures into action (Kotowski, Smith, Johnstone, & Pritt, 2011). The idea that the message should evoke the feeling of capability is also an integral part of the theory of planned behaviour: intentions of behaviours are dependent on three factors, one being perceived behavioural control (Ajzen, 1991). The person-relative-to-event theory holds that levels of preparedness will increase if communication is partially aimed to increase the perception that available resources are sufficient to deal with a threat (Mulilis & Duval, 1995; Duval & Mulilis, 1999).

5.1.8 Openness and honesty

The communicating organization must be characterized by openness and honesty, as such a posture creates trust and the opposite would endanger the relationship with other stakeholders (informers as well as target groups) (Sellnow et al., 2009; Warg, 2000). A lack of openness may result in organizations starting to work against you (Janoske et al., 2013). For more on trust, see (Kasperson, 1986) and (Kasperson, Golding, & Tuler, 1992).

6 Analysis

The analysis is structured around the themes found in the literature study presented above. The efforts to encourage public preparedness are analysed on how they comply or differ from what is found in the literature.

The interviews were used in the analysis to gather information about the efforts to analyse them relative to the best practice.

The analysis does not aim to cover everything of what has been done and how it has been done within the field of encouraging public preparedness in Sweden. Rather, the analysis aims to exam how the performed efforts relate to the theories. The analysis will help to answer the problem statements and form a basis for further discussion.

6.1 The efforts analysed

Efforts that are included in the analysis are briefly described below. Due to the scope of the thesis, only efforts that are related to climate change are analysed. The selection process is described in section 2.3.2.

Tram ad by City of Gothenburg

The campaign consisted of ads in the trams of Gothenburg. The short message was that the citizen is highly dependent on electricity in daily life; hence possible longer power outages may cause severe problems. The ad asks the citizen to consider how to manage such an outage, and presents a list of things to keep at home in the event of an outage.

Circular by City of Gothenburg

The circular from City of Gothenburg contained the booklet “*Krisberedskap – så funkar det: Att förbereda sig på det värsta*” (KBM, 2006), published by Swedish Emergency Management Agency⁵. In 40 pages the booklet informs about threats, the importance of preparedness, responsibilities, legislations governing crisis management and how the crisis management is coordinated on local, regional and state levels. The booklet finishes by describing the crisis management during three possible crises that may strike Sweden; ice storm, pandemic flue and terrorist attack.

“72 timmar” by City of Gothenburg

During one week employees from the office of *Civil Protection and Preparedness*⁶ at the City of Gothenburg manned a booth in central Gothenburg to inform about the responsibilities of the individual in the event of a crisis, and what measures can be taken to manage the first days of it. The booth was combined with ads in trams and public spaces, and roll-ups at borough offices. The campaign was mentioned (as news, not adverts) in at least radio, television and two newspapers.

⁵ Krisberedskapsmyndigheten, now superseded by MSB.

⁶ In Swedish *Samhällsskydd och beredskap*.

Dinsäkerhet.se by MSB

Dinsäkerhet.se is a webpage run by MSB, providing information to the public about risks, safety and how to prepare. The scope is wide, ranging from everyday accidents with a focus on children and elderly, to dangerous substances and natural disasters.

Material for educating in schools by MSB

MSB provides material to be used in education about societal and public safety and preparedness during accidents, crises and war. It is available at preschool, elementary school and gymnasium levels, and consists of student material, accompanying teacher guides, facts and suggestions of additional relevant information.

Of the school material provided by MSB, only the material directed towards the groups 12-16 years and students in the gymnasium age (16-18) are included in the analysis since these are the only ones that relates to climate change.

72 timmar by CF

72 timmar is a one-hour, free of charge briefing about the local municipal crisis preparedness, and how the public can prepare for the consequences of a crisis. It is organized by CF, and financed by MSB under a special mission given by the Swedish government in 2014. The Swedish government ordered MSB in cooperation with appropriate voluntary organisations to "realize an information effort to the public to increase the knowledge about the society's crisis management and to increase the individual's own ability to handle the consequences of a crisis" (Andersson, 2014, s. 1)

City of Malmö

The City of Malmö was investigated for possible efforts to increase public preparedness. Only one effort was found, a project called Coexist. Coexist was launched in October 2012 by the City of Malmö, the majority of the faith communities in the area, MSB and the Swedish Commission for Government Support to Faith Communities. Coexist is not a public preparedness project, still it is an example of involving and creating new means of communication with the public. Hence it is relevant to the scope of the thesis and therefore included in the analysis.

6.2 The best practices and the efforts

6.2.1 Involve and listen to the public

Overall, there are few examples within the reviewed efforts where the public has been involved to the extent that the reviewed literature recommends. MSB can be said to be the actor included in the study that has reached the furthest because of how they

involve the audience. Regarding the school material provided by MSB, students from the target audiences were included in focus groups when the material was designed; the same applies to teachers and rescue service workers (Lotta Nyman, personal communication, 12 Nov 2014). Although teachers and rescue service workers are not the target group for the communication, it is reasonable to suppose that teachers have a lot of experience with the target group, hence being able to contribute to the design of the material. On the website⁷ of the school material, it is also possible to sign on to an email list whereby one becomes a recipient of a questionnaire which provides feedback on the school material to MSB.

Dinsäkerhet.se, also provided by MSB, lets the public comment on each page through a Facebook plugin, which is another way of involving the public. The comments from the readers of Dinsäkerhet.se includes recounts of own flooding experiences, questions on where one could access sand bags to protect one's own house from flood, questions about how to reduce the risk from lightning and for how long water can be stored. The administrators of Dinsäkerhet.se take part in the commenting, answer questions and moderate the debate. Årskog sees the involvement of the public in this type of activities as something that is increasing. During the design process of Dinsäkerhet.se, focus groups were used to acquire feedback on the design (Marcus Årskog, personal communication, Oct 10 2014).

The City of Malmö initiated the project *Coexist* in October 2012. According to Stål, the project has proven valuable when wanting to communicate with groups that are hard to reach with conventional communication, an experience that is confirmed by Sellnow et al. (2009). Together with other means of communication, *Coexist* is one important channel (Jan-Peter Stål, personal communication, 3 December 2014).

The other actors, namely City of Gothenburg and CF, have not taken any measures to involve the public in the design and execution of the type of efforts that are examined in this thesis.

6.2.2 *Know the public*

The examination of the actors and the efforts reveals that the majority of the examined efforts seem to be designed with the target group or groups in mind, but not all actors have taken explicit action to understand their target groups.

The City of Gothenburg has according to Lexell identified the target groups. The identification of the target groups was then reflected in the design of the communication for all the three efforts examined. For the *72 timmar* campaign specifically, a number of workshops were held with people from the office of Civil Protection and Preparedness and communicators from the borough offices. During the

⁷ <https://msb.se/sv/Forebyggande/Barns--ungas-sakerhet/Skolmaterial/Vill-du-paverka-vart-utbildningsmaterial-och-stod-till-skolan/>

workshops it was established that the target group was defined as everyone in the age of around 13 and above (Kenneth Lexell, personal communication, 2014-11-25).

The school material provided by MSB is divided into rather narrow categories defined by age. The categories are 4-7, 6-10, 9-13, 12-16 years of age and gymnasium. According to Nyman, the knowledge goals of all material is always dependent on the age of the receiver, but also, if any, related writings in steering documents of the school (Lotta Nyman, personal communication, Nov 12 2014).

According to Agarwall, when designing Dinsäkerhet.se MSB sees their different target groups as divided by age. Even if they aim to reach the whole of the public, the campaigns are designed with certain target groups in mind. Reaching out to too many target groups simultaneously will result in a message “too wide”. The ambition is that all material should be legible and easy to understand. Some material is available in other languages than Swedish (Anna Agarwall, personal communication, Nov 28 2014). According to Årskog it would be favourable to translate a greater portion of the material provided by MSB to other languages than Swedish, but that currently available resources limit this. Årskog also reports that reoccurring discussions are held with language consultants about communicating with those with functional limitations (Marcus Årskog, personal communication, Oct 10 2014). Regarding people with disabilities, MSB are thinking about how to design the material so that it is available for everyone. According to Agarwall, MSB texts almost all of the video material, and try to use a simple language combined with pictures that provide the message. MSB participates in a research project on risk in a home environment by the Chalmers University of Technology, which partly focuses on disabilities. MSB is also now producing a report on groups who cannot take the same level of responsibility for their own safety (Anna Agarwall, personal communication, 2015-02-05).

6.2.3 Quantitative message properties

The reviewed public preparedness efforts have utilized a variety of different communication channels, albeit the scope of possible channels is wider. Table 2 presents the different channels that were used in the reviewed efforts, together with possible channels put forward by Coppola (2011).

Table 2: Channels proposed by Coppola (2001), and channels used found in the study.

Coppola (2011)	City of Gothenburg			MSB		CF	City of Malmö
	Tram campaign	Circular	72 timmar	DinSäker het.se	School material	72 timmar	
Television							
Radio							
Newspapers	x	x					
Magazines							
Internet			x	x	x		
Schools					x		
Businesses							
Organizations							
Churches							x
Libraries							
Advertisements	x	x ⁸	x				
Special events			x			x	
One-on-one meetings			x				
Informal social networks							
Within family networks							
Other			x ⁹	¹⁰	x ¹¹		

The tram campaign and circular from the City of Gothenburg each utilized one channel only, tram ads and a folder, respectively. The most recent campaign, *72 timmar*, uses advertisements in public places, folders, roll-ups and personal meetings in the city’s major transport and shopping hub, but also in the borough offices.

The school material provided by MSB is intended to be used in a school environment and administrated by a teacher, which to some extent limits the number of channels to be used. But within the school environment, a number of possibilities for different communication and learning strategies can be found. Examples of such are given in the teacher’s instruction available at the web site, and include discussing among students, playing games, report writing etc. How the material is conveyed is up to the teacher. Due to the limited time available no such efforts have been examined in this thesis. In the material the interactive computer-based quiz “Isstormen”¹² is included, which conveys the information in another channel than the rest of the material.

Dinsäkerhet.se uses text, videos, pictures and maps to convey their information about preparedness related to climate change. The web site is the main platform for their information, but according to Agarwall other channels such as Youtube, Twitter and Instagram are used. When certain campaigns are launched, they are also advertised in other channels such as television and cinema (Anna Agarwall, personal communication, Nov 28, 2014).

⁸ The circular was distributed with the City of Gothenburg’s magazine “Vårt Göteborg”.

⁹ The campaign is presented at the borough offices of each borough.

¹⁰ Youtube, Twitter and Instagram

¹¹ MSB is including the role playing game “Blackout” in their material for schools.

¹² Translates “The Ice Storm”

According to Stål, the project Coexist can act as an additional channel to use to reach groups that otherwise can be hard to reach. Stål regards Coexist as important in this respect (Jan-Peter Stål, personal communication, Dec 3, 2014).

In order to be successful, risk communication should be repeated over time according to the literature. Of the studied efforts to increase public preparedness, most are done as a “one-time only” campaign, while others are permanently in place. The City of Gothenburg has staged three different efforts since 2012. While being quite different in the format, they all share the property of being launched only once.

6.2.4 *Qualitative message properties*

The *tram* campaign by City of Gothenburg consists of a short message, communicating that one has to think about what to do during a longer power outage, when functions we take for granted in everyday life go out of service. It also provides a short list of things to keep at home. The abandoned tram stuck in snow makes the message stronger.

The *72 timmar* campaign by the City of Gothenburg is more extensive in terms of possible disasters that are covered compared to the tram ad, but the presentation is still simple and specific. It shortly recounts disasters that are relevant for the Gothenburg region, of which all relates to climate change. The supplied folder explains that the modern society is vulnerable, and that the resources of the society need to be directed to help those who can't help themselves, and what actions one should take to be prepared. The actions are presented in a checklist format. The campaign is considered easy to understand and concise.

The booklet (KBM, 2006) contained in the circular sent out by the City of Gothenburg gives a quite comprehensive recount of the crisis management system in Sweden. Given the context of it being sent out to households, it is probably too comprehensive. It is difficult to imagine someone that was not on a search for information about the topic to thoroughly read the booklet.

In general, the school material seems to be clear and concise enough when considering the target groups. It is regarded positive that the material is available in two different versions, where one contains more information, since this allows the amount of information to be adapted to the target group or maybe even individuals in a target group. Compared to most of the other material analysed, however, information on how the public can prepare is almost totally absent.

At large, the information on Dinsäkerhet.se is presented either in text or checklists. The checklists are centred on how to prepare and what to do in the event of a disaster, while the texts provide deeper explanations on the subject. The information is divided

with respect to the type of hazard, such as flooding, storm, heat wave and the design of the Swedish crisis management system. Overall it can be regarded to be clear and concise.

Another finding from the literature is that there should be consistency between different channels. During the analysis of the material, discrepancies has not been explicitly looked for due to the limited time available. The fact that a number of the investigated efforts are based on material from MSB may increase the level of consistency between different channels. It is possible that MSB, as a central agency, can sustain higher standards with regards to the consistency with research on disaster management. Notwithstanding, MSB is a large authority and the presumption above rests on a good coordination between different departments as well.

6.2.5 *Positive, concrete examples*

The tram ad campaign by the City of Gothenburg is, possibly due to the ad format chosen, rather condensed. To deal with possible power outages, the ad recommends being prepared and shows a list of things to keep at home. The ad can be said to be concrete and positive since it shortly gives advices on how to deal with the effects of a power outage.

The circular that was distributed by the City of Gothenburg consisted of the booklet “*Krisberedskap – så funkar det: Att förbereda sig på det värsta*” (KBM, 2006). The circular has a wide take on crisis management, and only mentions how the public can prepare briefly. It lacks concrete and positive examples of what actions the public may take to increase their preparedness. The circular explains the Swedish crisis management system and its different levels, but lacks concrete examples of what the public can do to increase their preparedness. Hence, it is unlikely that it would induce increased public preparedness.

The material studied from the *72 timmar* campaign by City of Gothenburg contains actions the individual or family can take to prepare for disaster. The checklists are concrete and specific. Hence the campaign is considered to comply with the literature.

Dinsäkerhet.se is divided into nine sections (e.g. *Kids and the young, Fire, Dangerous substances*), of which there are two that relate to climate change, namely *Nature’s impact* and *Your crisis preparedness*. The two latter have been included in the analysis. *Nature’s impact* depicts different natural hazards that are relevant to a Swedish context, such as floods, storms, heat waves et cetera. *Your crisis preparedness* gives more general instructions on how to prepare before and act during a crisis when functions we rely on in daily life do not work. Overall, both sections contain easily accessed checklists, combined with more thorough explanations of the risks and actions to take to reduce them. The texts are positive (inducing a sense that

the effects of crisis can be dealt with) and concrete (the instructions on what actions to take are rather specific and straightforward).

Overall, the school material provided by MSB contains some positive and concrete examples of actions to take. The standard material mainly focuses on what actions to take in the event of flooding, thunderstorms, landslides and mudslides, and what to keep at home. The more covering material also includes descriptions of the mechanisms behind those events.

The booklet used by CF in the *72 hours* campaign starts off with a brief explanation of the responsibilities within the Swedish crisis management system. The rest briefly depicts the five essential needs for a human to survive: water, heat, sleep, food and information. The focus is mainly on how those needs can be satisfied in a crisis situation, and which preparations need to be done. The focus is positive (focusing on what actions to take) and concrete and specific.

The majority of the efforts that are analysed include checklists, which can be regarded as a concise and easy-to-understand way to convey examples of what actions to take. The checklists are in general combined with pictures illustrating what to keep at home or the actions recommended. This could for example help for readers not fluent in Swedish or the young. The actions are in general nothing extraordinary since they are all easily performed. A representation of the generic checklist on what to include in a “box for crisis” can be represented by the list used by City of Gothenburg in the campaign *72 timmar*, see Figure 2 below.



Figure 2: "Box for crisis", from the *72 timmar* campaign (City of Gothenburg)

6.2.6 Seeing others taking action

Within the analysed material, there are few examples of peers taking action. Dinsäkerhet.se showcase a short movie where a family in an apartment building has to endure a longer power outage. The short movie is set in the kitchen, where the family gather with a neighbour, where they together perform different actions to cope with the consequences of the power outage.

The booklet used by CF during the campaign *72 timmar* contains a handful of examples of people taking action to deal with problems such as fire, power and heating outages et cetera.

No other effort than the two described above depicts peers taking action to prepare for or mitigate effects of crisis.

6.2.7 Simplicity and effectiveness of action

Since the actions encouraged by the different efforts analysed are similar in content and appearance, they are analysed together. In general, when actions are encouraged in the analysed material, they are easily carried out. The actions resemble actions that are performed in daily life. The recommendations can be to stack up on some extra food, and to acquire a radio with fresh batteries, actions that are uncomplicated to perform.

6.2.8 Openness and honesty

The degree of openness and honesty exerted by the mentioned actors and the resulting public trust are too complicated to analyse in this thesis. However, every now and then scandals of misconduct or bribery connected to municipal administrations emerge. Such scandals are likely to damage public trust in officials, which obstructs the work and processes of municipal administrations. At the same time, it is possible that such scandals put focus on the issue, and in the long run help to sustain at least basic levels of openness and honesty.

7 Results

In this section problem statement number one and two are answered by summarizing the theory and the analysis. The third problem statement, how efforts can be improved, is answered in the discussion.

7.1 Problem statement 1

How should risk communication be designed in order to optimally support public preparedness efforts?

According to the scrutinized literature, it is important to consider the recipient of the risk communication process, namely the public in this case. The public shall be involved through groups of peers and community leaders, something that may be effective in changing behaviours. It is also important to understand *who* the public is, in order to be able to design the communication properly. Factors that need consideration include age, culture, language proficiency, education and gender.

Further, the literature recommends the communication to be repeated and delivered in a range of different channels. The communication needs to be designed with the needs and capabilities of the recipient as a main guiding factor. It should also be easy to understand, clear and concise.

When aiming to strengthen preparedness, the literature holds that the advices should be concrete and positive and it should be explicit how the actions will reduce the risk. If the recommended actions are similar to everyday actions or can be considered easy to perform, they are more likely to be adopted. The literature also points out the positive influence of seeing a peer performing the desired action can have on the likelihood of the recipient performing the same action.

The literature also recommends the sender of the risk communication to be open and honest as an organization, in order to allow the development of a good relationship with the receivers of the risk communication.

7.2 Problem statement 2

Have efforts been performed to raise public preparedness? If so, are their design aligned with the guidelines found in the scrutinized literature?

A number of efforts have been and are performed in Sweden in order to increase preparedness, see section 6.1.

The efforts analysed partly align with the literature. Of the studied efforts, only two examples of involving the public were found. MSB has utilized focus groups during the design of their efforts. The City of Malmö has initiated the project *Coexist*.

Although it has not yet been used to induce public preparedness, it serves as an example of how the public can be involved. There are examples where the efforts have been designed with the recipient in mind, but overall there has been no thorough analysis done on whom the efforts are directed at, and how the efforts should be designed accordingly. Overall, measures to involve and understand the public have to be put in place.

Regarding the crafting of the message, there are evidences of both alignment and misalignment with the scrutinized literature. The efforts in general only utilize a small number of channels, and repetition of the campaigns is rare. Additionally, the efforts only sport two examples of peers taking action. However, the majority of the efforts are short and clear, and the actions they recommend are positive, concrete and most of them are easy to perform. Some of the material also offers deepened information if requested by the recipient.

Openness and honesty have not been included in the analysis, see section 6.2.8.

8 Discussion

The discussion presents some of the challenges associated with public awareness and aims to provide recommendations on how public preparedness related to climate change can be improved in Sweden.

8.1 Involve and understand the public

Develop platforms and processes to involve and understand the diverse public.

In the analysis of the efforts, it came to light that only MSB and the City of Malmö had taken measures to involve the public. This fact raises concerns that possible and important mechanisms, such as reaching out to hard-to-reach groups and making use of information agents within the community, are not exploited. Creating connections with the public can also leverage the understanding of the public, which may help in designing the communication.

Involving the public can obviously be done in many different ways, and the *Coexist*-project in Malmö serves as a good example. Even if the purpose of *Coexist* is to connect otherwise rather separated groups within the Malmö community, the format could also be applied when working with public preparedness. According to Stål, *Coexist* helps the City of Malmö to reach groups that are otherwise hard to reach (Jan-Peter Stål, personal communication, 3 December 2014). The City of Malmö has also

taken the initiative to *Malmöpanelen*¹³. *Malmöpanelen* is a panel consisting of citizens representative of the Malmö population. The purpose is to extract opinions on a number of things related to the city, by letting the members of the panel answer questions. I believe the panel can also be used to induce public preparedness. Therefore I recommend questions on how the members of the panel regard their own preparedness and the city's efforts to induce the same to be included in the questions for *Malmöpanelen*. This information could also help the City of Malmö to direct and design their efforts in the most effective way.

Another recommendation is for the Swedish Association of Local Authorities and Regions (SKL) to include the citizens' perception of their own safety, preparedness and responsibilities in a crisis, when they enact statistics concerning the performance of Swedish municipalities in their yearly survey *Öppna jämförelser*¹⁴. This is likely to put more attention to the issue, both from a municipal and public perspective.

8.2 Diversify channels and repeat message

Utilize a greater number of the channels available and repeat the message in order to maximise outreach. Identify groups who can be hard to reach, and modify the campaigns accordingly.

The majority of the efforts that have been analysed are launched as one-time campaigns. Only the school material and Dinsäkerhet.se by MSB are more permanently in place. To have an impact, I recommend the campaigns to be repeated to a greater extent than today. Repeating the campaigns would be associated with diverting resources on buying advertising space and the like, and probably also increased labour costs. Notwithstanding, when the material can be reused, there will be no costs associated with designing new material from scratch.

Comparing the types of channels that were used in the analysed efforts with the list provided by Coppola (2011), reveals that there is potential to use a greater variety of channels. Increasing the number of channels would likely increase the spreading of the message. Considering how widespread and talked about social media is today, it is interesting that of the analysed efforts only MSB has used social media for the purpose of improving public preparedness.

Increasing the number of channels is also important from a democratic perspective. It is likely that with the general design of most of the efforts today, some target groups will not be reached by the communication. These concerns partly rise because of the insufficient number of channels used mentioned above, but also due to the fact that the majority of the communication is given in Swedish only. According to the

¹³ <http://malmo.se/Kommun--politik/Var-med-och-paverka/Malmopanelen.html>

¹⁴ Translates *Transparent Comparisons*.

literature, language proficiency and level of education can inhibit the understanding of the message. There are immigrant groups in Sweden who have limited skills in the Swedish language, and there is a risk that such groups may miss or will not be able to digest the information. One recommendation would therefore be to combine Swedish and other languages in the communication. As was mentioned in the scrutinized literature, working together with civil society organizations (such as religious and cultural congregations) may be effective, why this is also recommended as a possible improvement in order to reach out to the mentioned groups.

8.3 Resources and responsibilities

Initiate a broad discussion on who should be responsible for developing public preparedness, and manifest the outcome with an articulated legislation and sufficient funding.

During recent years it has been made clear that there is a discrepancy between what the public expects to be helped with, and what the authorities provide during a crisis. This was also expressed by some of the interviewees. Stål at the City of Malmö expresses that the public expect the authorities to “save them” in the event of a crisis, and mentions the 2004 tsunami in the Indian Ocean. The expectations of many Swedish citizens struck by the tsunami on Swedish authorities were not met. According to Stål, the responsibilities of the public in a crisis situation need to be made clearer in the legislation (Jan-Peter Stål, personal communication, 3 December 2014). I would also argue that giving the public more responsibility is in line with the principles of proximity and responsibility. The individual is at a level below the municipality, closer to the event and responsible in a non-crisis situation. Hence, I argue that an individual in possession of the proper resources (of which is available to most of us, such as health and financial ability to acquire equipment) should take a greater responsibility in preparing for and dealing with crisis.

The legislation on responsibilities of municipalities to enhance public preparedness is today practically non-existing. There are a number of Swedish laws that relates to the management and preparation of crisis, but none addresses the responsibility to inform the public. The Swedish government has in a number of bills and government communications stressed the importance of involving the public and enhancing public preparedness¹⁵. However, I question how much effect this has compared to actually implementing those ideas in the legislation, since no actor explicitly owns the issue today.

Stål expresses that he would like to see efforts to increase public preparedness to be the responsibility of a central government authority. He believes that would make

¹⁵ E.g. bill 2007/08:92 and government communication 2009/10:124.

such efforts more effective (Jan-Peter Stål, personal communication, 2014-12-03). On the same topic, Andersson puts it: *“I believe the central authorities should take more responsibility for the information, I believe that’s how to get effect”* (Christina Andersson, personal communication, 2014-09-26). In tandem with these thoughts, I believe it would be more effective to have a central authority, such as MSB, responsible for producing material and designing processes on how the public preparedness can be increased. However, it might still be worthwhile giving the municipalities the responsibility of delivering the information and creating relationships with and involving the public. Still, inevitably, they have the opportunity to be closer to and better know the public in their area.

Some of the interviewees expressed that efforts to improve public preparedness are unfortunately strained by the financial resources available. This is according to Ohlén particularly evident for smaller municipalities, where a small tax base makes those activities expensive per capita compared to larger municipalities (Henrik Ohlén, personal communication, 2014-09-22). I think this example stresses the importance for municipalities to get together and cooperate in order to be cost-efficient, but also that from the governmental level the sufficient funding is provided.

What is most important at this stage is that municipalities, central authorities and politicians initiate a discussion about how the responsibilities and funding of effective and efficient systems aimed to build public preparedness should be designed in the future.

8.4 The problem of the un-rocked boat

Be aware of the difficulties of strengthening public preparedness when we live in a society where crisis is relatively infrequent.

Disaster risk is, for most people in many places, not an everyday concern. In a study by Morgan, Fishhoff, Bostrom and Atman (2002), people were asked which risks that evoke most concern for them. Ten per cent of the mentioned risks were related to disasters (natural and technical), surpassed by accidents, crime, economic risks, relational problems or problems at work (Coppola, 2011). This prioritization may be totally rational, but still it points to the problem that if people don’t worry about disasters and crisis, it will be a difficult task trying to strengthen public preparedness. Interviewees in this study also express that it is hard to influence the public on the matter when Sweden is relatively inexperienced when it comes to disasters (Christina Andersson, personal communication, 2014-09-26), and that the abolishment of the mandatory military service has taken away an automatic “preparedness trigger” (Henrik Ohlén, personal communication, 2014-09-22). The idea of the un-rocked boat has been described in the literature (Reason, 1998); the event-free time prior to a

catastrophic event may reduce risk awareness and inhibit the ability to deal with the event.

I believe this is a problem when working to strengthen public preparedness in Sweden. Major events have occurred in the last generation (30 years), such as Estonia and the Gudrun storm. However, I believe that people direct their energy towards everyday-issues, and hence become somewhat “immune” to influencing efforts. This is something I believe one has to be aware of when trying to build public preparedness, hence calling for even smarter and more ingenious campaigns and developed cooperation.

8.5 Remarks on improving methods and suggestions on further studies

There exist a number of possible points of improvement for the thesis, which have not been executed due to the limited time available. For example, in order to get an understanding of if public preparedness efforts related to climate change are carried out on a general basis in Sweden, a questionnaire could have been sent out to a large sample of Swedish municipalities and the county administrative boards. Such a questionnaire could have revealed if size of municipality or disaster exposure influence to what degree actions are taken. It should have given a more valid picture of which and to what extent measures to enhance public preparedness are carried out in Sweden.

It also would have been interesting to compare Swedish efforts with what has been done in other countries. For example, Andersson mentions Canada as a country where the topic has gotten attention and that MSB is looking at Canada for inspiration (Christina Andersson, personal communication, 2014-09-26).

The majority literature used in crafting the best-practice were originating from Western countries, while all of the efforts analysed were Swedish. It is not unlikely that different cultures would react different to risk communication. Hence it would be interesting to investigate how risk communication should be altered in different contexts.

During the work of the thesis, a number of other themes for further research have emerged, which may serve as themes for future theses. The themes include:

- Who should be responsible of what to build effective and efficient systems to encourage public preparedness?
- How does the problem of “the un-rocked boat” influence the awareness of hazards in today’s society?
- How can social media be used to increase the impact of efforts to strengthen public preparedness?

9 Conclusions

This chapter provides the conclusions that can be drawn after working with the problem statements and finishing the thesis. The answers to the problem statement, how to strengthen public preparedness, and if efforts executed in Sweden are aligned with these guidelines, are presented in Section 7.

The area of strengthening public preparedness is in no way new in Sweden, having gone from focusing on military invasion preparedness, to preparedness to a broad scope of crises. However, it seems as there are many possibilities for improvement. To start with, legislation that would govern responsibilities is unclear if not non-existent. There have been found no examples of cooperation between actors on the same level (such as two municipalities) in this study, something that would have contributed to making efforts more cost-efficient. Further, efforts can be criticized for missing important target groups, being launched just once and hence “drowning” in the medial flood and using too few of the possible channels. Few examples of involvement of the public were found.

However, positive aspects have also been found during the study. The majority of the efforts focus on positive, easy-to-perform actions that are similar to everyday activities, and they are presented in a clear and understandable manner. So in these perspectives they are in line with recommendations in literature. MSB have taken actions to reach out to segments of the population who are deemed as particularly difficult to communicate (such as intellectually disabled), and are currently writing a report due in March on the topic. Having interviewed and met people working within the field, there seem to exist a consciousness and curiosity of the problem and a will to improve.

The recommendations that surfaced during the work with the thesis can be summarized as:

- Stipulate which authority/ies that should carry the responsibility of enhancing public preparedness and how such efforts should be funded. The result of the discussion should become manifested in the legislation.
- Make MSB responsible for coordinating research, designing processes and producing material in support of public preparedness campaigns, while the municipalities execute them locally.
- The Swedish Association of Local Authorities and Regions (SKL) should include the citizens’ perception of their own safety, preparedness and responsibilities in a crisis, when enacting statistics concerning the performance of Swedish municipalities (i.e. *Öppna jämförelser*).
- Municipalities should exploit possibilities of cooperating to reduce costs (e.g. time and money) connected with the implementation of public preparedness campaigns.

- Efforts to improve public preparedness should be aligned with the needs and capabilities of intended target groups and advices should be easy to understand and adopt.
- Involve the public to a greater extent, with the purpose of improving the design of the efforts but also to create engagement in the issue (the *Coexist*-project as well as *Malmöpanelen* serve as examples of possible arrangements in a Swedish context).
- Identify groups that are hard to reach and develop measures to overcome these barriers. To this effect, one should expand the scope of languages as well as channels used to communicate. Especially social media is underutilized.
- Move from “one-time” campaigns to sustained efforts in order to increase impact.
- Enhancing public preparedness is tricky when the society is seemingly safer than ever. Therefore, successful efforts directed to build public preparedness needs cooperation between actors and ingenuity.

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11 Appendix A

The interviews were prepared according to the method describe in section 2. Below are the questions that were presented to each interview. The text below has been translated from Swedish.

Christina Andersson, MSB

1. I would like you to present your tasks at MSB.
2. What is your view on the responsibility and role of MSB to increase public preparedness in Sweden?
3. In what ways do you think that the society's view on the role of the individual in the management of a crisis has developed over time?
4. What level of interest do you perceive to be shown about the role of the individual on different levels in Sweden?
5. How do you believe that the view of the public's role in disaster management will develop in the future?
6. How can the cooperation with voluntary organisations aimed to build public preparedness be developed?

Henrik Ohlén, City of Gothenburg

1. Please describe your and your department's role.
2. What is your view on the municipal administration role to build public preparedness and inform about crisis management?
3. How do you think that can be developed?
4. Is it clear in legislation and by other means who is responsible to engage in activities to encourage public preparedness?
5. What are the differences between building public preparedness in an urban versus a countryside context?
6. What are your reasons behind choosing the efforts you have so far executed?
7. Have you taken any measures to reach out to people with Swedish as a second language?
8. Have you taken efforts to evaluate you efforts?
9. How would it be possible to develop your efforts?
10. Overall, do you believe the area of encouraging public preparedness to be somewhat new and that it will develop in the future?

Jan-Peter Stål, City of Malmö

1. Please describe your role.

2. What responsibilities does the public bear for its own safety during a crisis?
3. Is it important to work to build public preparedness, and if so why?
4. Who should bear the responsibility to build public preparedness?
5. Have measures been taken within the City of Malmö to enhance public preparedness?
6. What are your thoughts on involving the public in crisis management?
7. Have actions been taken by the City of Malmö to build public preparedness?
8. Why were these actions chosen?
9. Is it clear in legislation what the responsibilities of the municipality to enhance public preparedness really are?
10. What can be improved within the area of building public preparedness? Who should be responsible for what?

Marcus Årskog, MSB

1. What is your view on the responsibility and role of MSB to increase public preparedness in Sweden?
2. What is your view on the responsibilities of the public in the event of a disaster?
3. What channels do you use to induce increased public preparedness?
4. Do you design your communication with different target groups in mind?
5. Can you give some examples of what to think about when designing communication aimed to induce increased public preparedness?
6. Have MSB taken measures to involve the public in the process of building public preparedness?
7. Can you see any points of improvement on the efforts to build public preparedness?
8. What measures has your division at MSB taken to secure your functionality in the event of a crisis that affects you?