Doctoral thesis

Emergency preparedness management and civil defence in Sweden
An all-hazards approach for developed countries’ supply chains

Elvira Kaneberg
Acknowledgement

The writing of this thesis took place during the long aftermath of what is now simply known as the “new and ever-changing threats to civil society.” During the writing and in the very last stages of reviewing this thesis, the refugee crisis in Syria put the number of persons seeking asylum in Sweden at historically high levels in 2014 and 2015. In 2014, the largest forest fire ever struck a vast area in Västmanland, Sweden. An outbreak of Ebola hit West Africa in 2014. The terrorist attacks in Brussels happened in 2016. While proof-reading, the terror attack in Stockholm occurred. The Swedish Armed Forces carried out an exercise to practice its ability to face an armed attack against Sweden, Aurora 2017. These complex emergencies (among many more) and preparedness planning highlight several of the issues I discuss in this thesis. They illustrate the point I wish to make in this thesis: complex emergencies are political at heart.

This thesis is the result of true engagement effort. Since the start, I have worked together with very exceptional, knowledgeable and experienced people in research, practice and teaching on emergency preparedness management. On the long road towards this thesis, I have incurred many debts. I take this opportunity to express my sincerest gratitude to all the experts who brought their specific knowledge in the interviews and to colleagues at JIBS, FMV, SAF, FHS and MSB. I also wish to pay my dues to those who have established the various aspects of crises management and humanitarian research upon which this thesis builds. I gratefully acknowledge the anonymous reviewers at the journals JHLSCM, JCCM, JDRR, who provided me with constructive comments that helped me to shape the arguments in the articles towards publication. Without their contributions, there would be no research-based knowledge to report upon in this thesis.

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My greatest gratitude, however, belongs to my children, Sofia, Sebastian, and Jairo, family and friends. Thank you, Irma T, for your utmost support. They have had to endure my unusual fascination with understanding the irritated policies of the civil society readiness to prepare for the changing demands and my episodic attempts to describe my ideas. Finally, I express gratitude to my loving husband Håkan for his patience and unconditional support in this thesis process until finalization. Håkan, thank you for being you and thank you for being there for me.
Abstract

This thesis addresses the evolving role of supply chain networks in the structures of the emergency preparedness planning. The thesis focuses on the management of planning in emergency preparedness and civil defence in Sweden. Various levels of planning are combined with insights from business and network theories to understand how the civil society actors involved meet demands imposed by complex emergencies and changing threats to civil society. Empirically, the study is based on five case studies that primarily use interviews and secondary materials from observations, documents and research. The combined findings and analyses of the embedded case studies are integrated into a conceptual whole (called kappa) that explains how the roles and relations of actors in emergency planning need to develop over time. The most important finding of this study is that civil society in developed countries must be organised in a completely different way than today to meet the changing demands. The all-hazards approach to planning offers civil society actors a rationale for entering into different networks. The supply chain networks can provide structure to the different types of planning. Moreover, this study shows that civil society actors have strategic capabilities for meeting threats, but these should be addressed in roles and tasks for the safety and security readiness. This capability can be achieved at different levels of planning (tactical, operational, strategic) and in different relations (civil, commercial, military, voluntary), which explains the significant differences between the emergency preparedness management in different response operations. It is suggested that a lack of political willingness or policy readiness to all-hazards planning provides substantial choices in interpreting the role and task of the emergency preparedness management system, through which supply chains networks mainly become a contextualized condition. Two underlying preparedness views are identified that contribute to the planning of actors and their relations when involved in the Swedish safety and security readiness. The civil defence planning for developing civil-military relations is considered in networks for structuring, managing and coordinating these relations, on the one hand. The emergency preparedness and all-hazards approach planning, for managing the commercial, voluntary and individual relations, and for delimiting the networks into manageable nets, on the other hand. This thesis contributes to the current understanding of emergency preparedness management and civil defence planning using an all-hazards-planning strategy as objective instead of a fragmented planning objective (in separated systems). This understanding is linked to the evolving role of the supply chain network as the solution to the urgent need of structure of the fragmented preparedness planning to meet the increasingly changing demands. An all-hazards-planning approach helps to describe the managing
and planning structures and how supply chain networks need to develop into the preparedness systems as delimited structures over time. Moreover, this thesis contributes to the emergency planning literature by paying attention to a different type of planning for safety and security in two ways: first, by specifying what essential capabilities of civil society actors are linked to the operationalisation of planning; second, by providing insights into civil-military coordination along networks over time. Rather than defining the essential differences between actors in the networks, including the military and civil actors (which refers to public authorities and the commercial and voluntary sectors in Sweden), this thesis suggests that civil-military relations, public-private collaboration and voluntary involvement in the supply chain network are essential capabilities for any developed country to deal with the risky availability of essential resources. By showing how this different preparedness planning is described and located over time, this thesis discusses emergency preparedness and network theory, all-hazards planning, applicability to other developed countries, safety and security strategies, and the relations among civil society actors to examine the dimensions in supply chain network structures that can support the planning.
Sammanfattning

Avhandlingen fokuserar på planering och ledning av krisberedskap och civilt försvar i Sverige. I avhandlingen behandlas problematiken med hur olika försörjningsnätverk ska kunna utvecklas och samordnas för att ge en positiv effekt på Sveriges beredskap. Olika försörjningsnätverk identifikeras för att ge underlag till strukturer och nivåer i beredskapsplaneringen. Avhandlingen ger exempel på hur olika aktörer som behöver ingå i den nationella planeringen och styrningen behöver koordineras för att möta snabbt förändrade krav på försvar och säkerhet. Olika planeringsnivåer kombineras med lärdomar inom bl.a. logistik och nätverksteori inom näringsliv och militära områden. En viktig del utgörs av förståelsen för hur samhällsaktörer behöver bli involverade för att möta komplexa krissituationer (inklusive krigshot) och förändrade hot mot samhället.

Avhandlingen bygger på fem sammanhangande studier baserade på informationsinsamling via; intervjuer, material från observationer i olika länder och inläsning av relevanta dokument och aktuell forskning. Resultaten och analyserna av studierna är integrerade i en helhet som förklarar hur roller och relationer mellan aktörer i beredskapsplanering behöver utvecklas över tiden med stöd av nätverkens olika komponenter (aktörer, resurser och aktiviteter). Studierna bidrar med kunskap om civil-militär samordning samt samverkan mellan offentlig verksamhet, frivilligorganisationer och näringslivet.

En viktig slutsats i avhandlingen är att beredskapen i det civila samhället i ett utvecklat land som Sverige behöver utvecklas och ”moderniseras” för att samhället ska kunna möta snabbt förändrade hot och olika krav på beredskap. Planering måste omfatta alla sorts risker och hot (även krigshotet) och det ska vara ledande för hur samhällets aktörer behöver involveras i olika försörjnings- och beredskapsnätverk.

Effektivare beredskapsplanering är en strategisk förmåga som innebär att aktörer ska fungera i roller och med de uppgifter som bidrar till Sveriges säkerhet och försvar. Denna förmåga uppnås på olika sätt och på olika nivåer, genom bl.a.; olika sorters planering (taktisk, operativ och strategisk), olika typer av utvecklade relationer (civila, kommersiella, militära, frivilliga), samt samordnade försörjningskedjor över tiden och koordinerade aktiviteter för olika kombinationer av responsoperationer i både fred och krig.
<table>
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<tr>
<td>AHA</td>
<td>All-Hazards Approach</td>
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<tr>
<td>CD</td>
<td>Civil Defence</td>
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<td>CI</td>
<td>Critical Infrastructure</td>
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<td>CPSC</td>
<td>Civil Protection Security Council</td>
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<td>CS</td>
<td>Civil Society</td>
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<td>CSA</td>
<td>Civil Society Actor</td>
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<td>EFESA</td>
<td>European Food Safety Authority</td>
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<td>EMA</td>
<td>Emergency Management Act</td>
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<td>EPM</td>
<td>Emergency Preparedness Management</td>
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<td>ES</td>
<td>Emergency Supplies</td>
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<td>ESDP</td>
<td>European Security Defence Policy</td>
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<td>EU</td>
<td>European Union</td>
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<td>FFO</td>
<td>Swedish Voluntary Defence Organisations</td>
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<td>FMV</td>
<td>Swedish Defence Materiel Administration</td>
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<td>FOI</td>
<td>Swedish Defence Research Agency</td>
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<td>FRA</td>
<td>National Defence Radio Establishment</td>
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<td>GC</td>
<td>Government of Canada</td>
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<td>GO</td>
<td>Governmental Organisation</td>
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<td>IFVA</td>
<td>Iceland Farmers Association</td>
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<td>IMF</td>
<td>International Monetary Fund</td>
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<td>INGO</td>
<td>Internal Non-Governmental Organisation</td>
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<td>IRAR</td>
<td>Icelandic Risks Assessment Report</td>
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<td>IRAWG</td>
<td>Risk Assessment Working Group</td>
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<td>MSB</td>
<td>Swedish Contingencies Agency</td>
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<td>NAFTA</td>
<td>North American Free Trade Agreement</td>
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<td>NATO</td>
<td>North Atlantic Treaty Organisation</td>
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<td>NESA</td>
<td>National Emergency Supply Agency</td>
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<td>NGO</td>
<td>Non-Governmental Organisation</td>
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<td>NPM</td>
<td>New Public Management</td>
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<tr>
<td>OECD</td>
<td>Organisation for Economic Cooperation and Development</td>
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<td>PCA</td>
<td>Partnership Cooperation Agreement</td>
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<td>PPP</td>
<td>Public-Private Partnership</td>
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<td>SAF</td>
<td>Swedish Armed Forces</td>
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<td>SC</td>
<td>Supply Chain</td>
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<td>SCM</td>
<td>Supply Chain Management</td>
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<td>SCN</td>
<td>Supply Chain Network</td>
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<td>SCNM</td>
<td>Supply Chain Network Management</td>
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<td>SDC</td>
<td>Swedish National Defence College</td>
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<td>UN</td>
<td>United Nations</td>
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<td>UNDP</td>
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Preamble

How can Sweden create a robust system to face new and ever-changing threats to civil society? In supply chain management, civil society comprises actors, relations, planning and networks to facilitate political readiness and to frame a broader variety of threats to society. Tendencies such as conditions and terms for emergency preparedness activities are constantly changing. This is also true when business and public actors need to be involved to cope with the general goals of safety and security in developed countries. The complicated relations between civil society and markets is that competition in the market has become harder and global. Product lifecycles have become shorter, and customer preferences are changing rapidly to adapt to new demands. Efficient lead times, high-quality suppliers and high-quality products and services are even more important conditions for becoming prepared in terms of meeting new threats and remaining competitive.

My interest in civil-military relations to meet complex emergencies began in 2010. At that time, Sweden showed little interest in this topic. Eight years later, interest in developing civil-military relations as goal to the safety and security readiness has increased substantially. My first experiences with civil-military coordination during the Haiti earthquake in 2010 motivated me to investigate the conditions for civil-military coordination in Sweden. After my master’s thesis, I began to sketch a more comprehensive doctoral study on emergency preparedness management and eventually on civil defence planning. Inspired by broad empirical evidence, the content of this dissertation is based on several sources, including my own practical experience from more than twenty years in business administration within industry (e.g., Bombardier) and in the public sector (e.g., the Swedish defence material administration). I became concerned of the complications of civil society when facing changing demands, such as civil-military relations, the relationship between business and civil society actors, the importance of the voluntary sector in emergency planning, and the impact of developed countries’ requirements on policy and vice versa. I realised the need for different management and planning approaches to efficiently meet the new threats to civil society. Exchange with customers and suppliers regardless of geographical distances is only one of the challenges to today’s business relations. Challenges are not only a consequence of the global impact on the business environment; I believe that they are also largely a consequence of new opportunities from, for example, technological developments, policy changes, and economic growth demands.
1. Introduction

Emergency preparedness management (EPM) and civil defence (CD) in developed countries are embedded in global safety and security changes. Studies have gradually recognised that safety and security changes do not arise as isolated happenings but that changed demands are making the supply chains difficult to grasp (e.g., L’Hermitte et al., 2016; Carmeli, 2008). In addition, the supply chain network literature acknowledges that emergency managers are gradually becoming concerned with changes to demands that often make the true networks become invisible and conventional management approaches inefficient (e.g., Gattorna, 2010; Wasssenhove & Tomasini, 2009; Towill and Christopher, 2002). Research on the supply chain network (SCN) as an explicit planning setting is driven by the idea that the involvement of different civil society actors (CSA) in planning has value for the different SCN’s coordination to solve the chaos, making preparedness planning different from other types of planning (Kaldor, 2013; Oloruntoba and Gary, 2006).

When developed countries (DC) need to link their civil society to safety and security, it is impossible to debate a country’s political readiness to respond to changed demands without relating it to worldwide risks (e.g., major cyber-attacks, major terror attacks, emergencies, antagonistic threats, and war), geopolitical risks (e.g., increased fragmentation of the EU, the North American trade tensions, the Russia-NATO conflict, the South China Sea conflict, and the Gulf conflict), and economic growth risks (e.g., expansions, slowdowns, and recoveries of countries to full capacity) (BlackRock Investment Institute, 2017). Global safety and security lurks in what the Swedish war correspondent Magda Gad (2017) has called a “conventional and low-intensive ‘Third World War’ where the United States and Russia globally and Saudi Arabia and Iran regionally battle through agents in countries like Iraq, Syria, and Yemen”. This is a different type of war that deeply involves the emergency preparedness systems of developed nations.

Safety is said to be a fundamental part of civil society to fulfil basic needs required by society (Barton, 2000). Providing security and, with it, a sense of safety is closely related to the other dimensions of public readiness (Shaftoe, 2000, p. 231). This sense of safety arguably enhances trust and exchange between CSA and contribute to replying to the changing demands. Trust avoids markets and approves relationships. Axelson and Easton (2016) suggest that a lack of balance between actors’ resources is an important driving force for SCN processes to be introduced for changing demands. From any perspective, the SCN offers a completely different view from that traditional business approaches to a more integrated planning. There are, however, humanitarian principle implications that might contribute to the management of the civil-military exchange under the all-purpose label of
efficient emergency preparedness management. Specifically, prior work that involves the tenets of CD planning apply in almost any application of emergency management. This notion suggests that planning emerges within the contexts of EPM and CD to reflect a new reality in developed countries that is, however, imperfectly understood. The recognition of DC as “rich democracies that have devoted substantial national resources to welfare provision” (Swank, 2002, p. 68) is associated with global geopolitical risks, worldwide risks, and economic growth risks in different parts of the world that surfaced after the Cold War ended in 1989. These challenges are also relevant for Sweden (Trägårdh, 2007).

EPM refers to “the long-term planning of activities to strengthen the overall capacity and capability of a country” and to efficiently respond to all types of hazards in civil society (WHO, 2007, p. 8). The notion of CD “was born out of wartime” and has been considered a model in which civilian-military relations are developed to protect civil society in response to war (Alexander, 2002, p. 2). CD’s association with EPM is grounded in complex policy and regulatory guidelines with regard to wider preparedness planning, including the problem of war (Nielsen & Snider, 2009; Alexander, 2005). In developed countries, the all-hazards approach (AHA) can provide structure for the planning of any type of complex emergency and to meet major threats to civil society, even war (Canada, 2012; Cornwall, 2005). The terrorist attack in Stockholm on April 7, 2017 (Horn, 2017), is an example that suggests that Sweden requires a different type of planning to engage all actors’ capability, including the military, in emergency planning (Boin & McConnell, 2007, p. 37). These two faces of policy (EPM and CD) are the two essential elements for understanding the more specific challenge to civilian-military relations.

Some scholars (e.g., L’Hermitte et al., 2016; Wassenhove, 2009; Carmeli, 2008) have called for revising the SCN research with a broader scope to meet new threats. CSA are once again interested in global strategies to provide readiness in the safety and security changes. Changes to improve actors’ involvement in efficient SCN do occur, but there is no mechanism by which the intertwined CSA direction and capabilities can be distinguished (civil, military, voluntary, and commercial actor’s). In terms of strategy, Axelson and Easton (2016) argue that the SCN provides not only a useful structure to planning but also mechanisms to manage problems and coordination among actors. Gattorna (2006) argues that a strategy well implemented is better than a changed strategy poorly executed. Original intentions expressed in business plans are often dissipated or lost before they are even executed (Gattorna, 2010). While this failure to implement plans is clearly a result of changing market conditions, competitor actions and harmful government regulations, there are also implications that Håkansson and Johansson (2006) attach to the forces that drive SCN changes and that remain an issue of disagreement. Thus, due to lack of structures, it seems meaningless, at this point, to speak about any optimal preparedness planning system.
Building on Medvedev (2015), Tomasini and Van Wassenhove (2009), Boin, Hart, Stern, and Sundelius (2005), Perry and Lindell (2003), and Alexander (2002), this thesis examines how diverse types of networks can provide support to the preparedness planning. The SCN is one emergency preparedness settings that can serve as foundation for developing the demanded readiness of Sweden. SCN can be coordinated in several ways to provide structures in planning to meet complex emergencies and changing threats to civil society. To understand the developments associated with global safety and security, the case of EPM and CD in Sweden is used to provide knowledge about complex SCN’s structures. This is particularly suitable when CSA are required to adapt their planning to the changing demands due to persistent new and changing threats and at the same time to provide flexibility, efficiency, and responsiveness in response operations.

1.1 Complex emergencies: new threats for developed countries

The shift of complex emergencies from low-income and middle-income countries to developed countries has increased dramatically in the global arena. Safety and security inequalities in developed democracies have increased as new threats and are a persistent burden on civil societies. Emergency preparedness management should be a priority from the initial stages of policy and should be accompanied by organisational structures, relationships and the management of supply chains to address current safety and security inequalities.

Academic achievement in SCM has been devoted to the challenges caused by growing demands and market requirements as well as policy direction. This scenario is tied to transnational complexity, including technological developments, business complexity, conflicts and threats to DC. After decades of efforts to manage resources and planning operations for growing demands, supply chains’ normal ways of operating need to change. These challenges are even more severe in the context of the emergency preparedness in developed countries. This definition of complex emergencies reflects its subjective nature as a constructed threat; it speaks of an emergency as a situation in which policymakers experience “a serious threat to the basic structures or the fundamental values and norms of a system, which under time pressure and highly uncertain circumstances demanded making vital decisions” (Rosenthal, Charles and t’ Hart, 1989, p.10; Stern, 2003, p.4).

Awareness of challenges to the management of complex emergencies may depend on the type of threat. A traditional distinction suggests that threats, including the threat of war, natural emergencies and man-made disasters, are more complex than ever before. War can essentially be characterised as a violation of civil freedom as it is expensive, destructive, and uncertain. Peace
is the arrangement that governs peaceful relations between nations (Kaldor, 2013). In connection with Cohen (2007, pp. 37-38), the statement that civil society has “become global” targets democratisation and integration but no longer the state; instead, it targets the emerging, complex global order.

Current strategies, in contrast to tactical and operational strategies, challenge public managers in dealing with these new and rapidly changing threats. Military involvement in civil tasks may involve political consequences. Public trust in the political readiness to address peculiarities of complex emergencies may necessarily involve a different type of policy. The involvement of different actors, such as military and commercial actors, in diverse ways is an area that has been recognised by Rosenthal et al. (2001) and Boin et al. (2005), in agreement with other research suggesting that complex emergencies are characterised by sets of specific conditions such as “severe and largely unexpected threats, high uncertainty, and the need for urgency in decision-making” (McConnell and Drennan, 2006, p. 60). Inspired by Boin et al. (2005), these unexpected threats to civil society are linked to values, rights, and sovereignty, leading to complex emergencies (e.g., safety, security, welfare, democracy, health, integrity, and expectations in emergency situations).

Emergency management (e.g., Hiles, 2002; WHO, 2007) in developed countries is limited. The reasons for this include rapid global changes and the fact that research does not develop with the same regularity; it takes time to understand changes and the way changes affect developed countries’ civil society. Furthermore, complex emergencies are increasing, and risks are shifting around supply networks. Other concerns include current commercial settings to improve emergency preparedness for an overall approach and trends leading to rapidly changing, complex, dynamic supply networks. There is little empirical evidence on complex emergencies linked to the SCN nor a managerial perspective with tools to identify, assess, and manage current uncertainty across global borders. Additionally, much of the emphasis on routine emergencies (e.g., usual floods, hurricanes, or accidents) excludes a perspective on the actual managerial complexity (Alexander, 2002). In Sweden, actors’ capability to assess threats such as terrorist activities that cause mass casualties and massive disruption is increasingly shifting to involve the supply chain networks and the complexity in adapting to changed demands. For example, complexity in procurement and uncertainty in supplies availability entail supply network risks in terms of the identification, assessment and management of complex emergencies.
1.2 The problem of emergency preparedness: the “ugly step-child” of developed countries

The amount and complexity of emergencies and threats have increased in recent times. Developed countries are not insensitive to these trends. All around us, the environment is changing, and the geopolitical situation is rapidly shifting. Economic growth and resource availability are affected by global changes, which in turn are driven by human development and growth. The effects of, for example, Hurricanes Katrina and Rita on world oil prices show that uncertainty is not restricted to local or agricultural economies (Schipper and Pelling, 2006, p. 19). Because complex emergencies are very political events, Sobel and Leeson (2006) claim that “the Federal Emergency Management Agency (FEMA), the United States Department of Homeland Security, is persistently confronted with problems in government disaster management to coordinate the response to disasters since back in 1996” (2006, p.55). They argue that each major US emergency brings yet another account of FEMA failure and yet another Congressional investigation into the coordination problems in FEMA. The failures of FEMA and of government disaster relief more generally that occurred in the wake of Hurricane Katrina in 2005 are nothing new; identical problems manifested after virtually every previous major emergency. What was different this time, however, was the visibility and severity of the failure and of the human suffering it caused. Government policy errors are geographically diffuse and difficult to identify. After Katrina, however, significantly greater media attention exposed these problems in FEMA and government emergency management. Policy errors feed into supply chains with resource degradation and scarcity, affecting both human well-being and the safety and security environment of DC. In such supply chains and their related networks, climate change, natural hazards, antagonistic threats and war play significant roles, just as management influences their complexity for civil protection.

Developed countries’ governments and the insurance of businesses, military, public and private actors in SCNs are required now more than ever to cope with emergency preparedness. In some cases, emergency management-related claims have increased by more than a full order of scale in just a decade. It is vital for national emergency managers and governments to recognise the general trend of the impact of complex emergencies on civil society to effectively react and respond to them. To illustrate these trends, the extraordinary increase in number and budgetary impact of complex emergencies in the last decade in Sweden are the concern of this thesis, as well as a discussion of the impact on government and the insurance of businesses, military, public and private actors in supply chains. Despite the increasing impact of complex emergencies and the changing threats to civil society, Sweden’s national, regional and local levels’ investment in in emergency mitigation planning is limited. Some municipalities have no
emergency plans at all. Where plans exist, they address only a small range of possible threats, and some do not include coherent mitigation aspects. Threats and complex emergencies are therefore perceived as a fragmented picture when mitigation plans are gathered at the national level. Emergency mitigation planning at the municipal and regional levels is critical for national safety and security strategy.

Despite the increased number of complex emergencies and new threats to developed countries, there are few academic studies on emergency preparedness (e.g., Alexander, 2002; Kaldor, 2013; L’Hermitte et al., 2016; Perry and Lindell, 2003a). Swedish civil-military actors find it difficult to communicate, coordinate and manage when they are required to coordinate their activities not only in emergency preparedness planning but also to provide a joint response to changing threats in the system of civil defence (Kaneberg, 2017). This situation is changing, however, as demonstrated by the increasingly high level of attention after the Stockholm terror attack in April 2017, which hastened political negotiations to demonstrate policy results.

1.3 The tricky role of civil defence

Civil defence (CD) is vital to understand the role of civil-military relations in several ways. As most emergencies typically involve multiple actors, managers and military commanders rely on some level of coordination between these actors. A basic problem that undermines any attempt to coordinate the civil and military actors in CD planning is the institutionalised use of force among the international community. However, civil-military actors that are expected to play roles in dealing with changing threats and changes in safety and security find it tricky to refer to this form of force and to function as part of the emergency solutions. However, as the area of complex emergencies remains undefined, either of the roles played by civil and military actors provides guidance for the uneasy relationship between emergency preparedness planning and CD planning. Alexander (2005) claims that the implications of these relationships partly originate in changes related to civil society rights and expectations in emergency operations, such as when civil-military coordination is required to return to basic functions to reduce uncertainty.

There are diverse types of civil defence in terms of different organisations, structures and relationships. One type combines civil society organisations and military structures to fulfil the general goals of safety and security from peace to war, as in the UK, France, Germany and Poland (Hyde-Price, 2004). The other, used over the past two decades, is civil defence that is primarily concerned with armed aggression, as in China and Japan (Dinstein, 2017). DC have experienced terror attacks since 11 September 2001, the subsequent war in Afghanistan and the reopening of the Gulf War. These events determined
the way in which civil defence is perceived and practised. One change has been the reduction of supply pressures focused on conventional war and the policy of making the best use of military capability.

Civil defence has had multiple meanings over time and in different circumstances. For example, it has meant life-saving activities and even, in some cases, could be used to mislead the public for political ends (Medvedev, 2015; Grant, 2009). With the new emphasis of the US civil defence after the terror attacks of 11 September 2001, civil defence appears to have become inherent in civil society’s readiness regarding safety and security. With regard to advancing such political readiness in the context of a developed country, it can be said that “civil defence is concerned with plans to reallocate the civilian population in the face of actual or potential aggression [...] civil defence is administered by a combination of military and civil authorities and regulations” (Alexander, 2002, p.210). This definition is seen as evidence of the close relations between the “military and the state” (Nielsen and Snider, 2009, p.11). The evidence of the relationship between these two capabilities of civil society is a significant ongoing problem in the current developments. State and civil-military relations are indeed a problem, but military plans and politics are often part of the problem.

A large public sector and a vital civil society pose challenges to military planning with serious implications for emergency preparedness (Trägårdh, 2007). Civil-military relations are at the top of the list when both actors struggle for available resources with different objectives. An important question is what forms of civilian-military relations will best sustain the safety and security of Sweden. Since the predominant focus in existing SCNs has been on the individual relations between actors, the literature should pay greater attention to the larger networks in which such relations can develop and exist (e.g., Håkansson and Johanson, 2002; Möller, 2006).

1.4 Supply chain complexity in emergencies and the impossibility of managing the chaos

The conditions for conducting business change constantly over time. This is no less true when business relations are related to emergency preparedness management in the context of DC. In Australia, for instance, it is well understood that the effectiveness of public-private business strategies and the level of emergency preparedness can determine the success of an emergency response (Cretikos, et al., 2008). Despite these orientations to emergency preparedness, little is known about the actual level of emergency preparedness or the increasing demand for emergency goods, performance and variety. Growing demands combined with more complex services and technologies used during complex emergencies such as fires, terror attacks, IT attacks and other emergency situations has led to several key problem areas.

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One problem is that many emergency managers are not fully aware of the increasing demands on products and services that impact the complexity of SCNs in terms of organisations, structures and relationships. They may see only the physical movements involving scale, technological uniqueness, quantity, degree of customisation in the final product or service, quantity of alternative design and delivery paths. However, complexity, according to Gattorna (2010, p.4), makes “the true supply chain network invisible” in terms of information needs and information sources, the number of response loops in the production and delivery system, the variety of diverse knowledge bases, skills and competencies incorporated in the end user requirements, and the extent of supplier involvement in planning.

When Axelsson and Easton (2016) view planning from an operational standpoint, they emphasise the management of relationships. Such relationships may be initiated by either actor. The key problems are the choice of partners, the coordination of resources and actors and the management of individual relationships. The first problem is largely strategic in terms of actors’ extended competition in strategic positions along SCNs that is described in terms of competing forces. The second problem is recognised as the delimitation problem. Single actors have limited resources; they must choose how much and to what extent they will devote to each relationship in the SCN over time. The third problem concerns the way the individual relationships are managed. One fact in network approaches is that the focal relationship cannot be managed in isolation from the other relationships of an actor and represents a channel through which resources can be accessed. Failure to see the full SCN in the structure of preparedness planning can be damaging. Furthermore, identifying it but then implementing incorrect solutions can be fatal for the management of actors’ relations at the organisational and operational levels. This thesis addresses these gaps by describing collaborative activities and outcomes in response to complex emergency conditions in Sweden. Swedish public managers suggest that their collaborative achievement is associated with preparedness planning and with the response to disruptions affecting other critical infrastructures. The same mindset now suggests that resolving conflicts among actors will rescue SCNs and businesses (e.g. resolving conflicts among actors leads to good SCN performance). This is especially true in this new age of terrorism and complex emergencies, where the hope is that technology will make commercial relations secure and manageable in the field of operation (McManus, Seville, Brunsdon, and Vargo, 2007). The relations among CSA are addressed in planning through networks as they implicate managerial choices necessary for coordination, information, and collaboration that lead to an efficient response to threats (Hiles, 2002). With coordination and collaboration, actors can develop greater flexibility (Fenton, 2003, p.23). This thesis addresses the efficiency measurements for increasing actors’ flexibility and responsiveness with regard to requirements in DC. As such, managers must recognise that
emergency preparedness management is associated with complex SCN and that the management of such an arrangement comprises all types of hazards (Boin et al., 2005).

1.5 The all-hazards approach: coordinating different supply chain networks demands

The all-hazards approach (AHA) addresses SCN to grasp the relations in the entire business concept to cope with future unpredictability (Gattorna, 2006). The AHA “is a main approach used by developed countries to meet and structure the planning of all types of hazards, including war” (Boin and McConnell, 2007, p.37). Supply chains in aggregation are businesses and involve any combination of processes, functions, activities, relations and pathways along which product services, information and financial transactions move in and between enterprises in both directions (Gattorna, 2010, p.1-4). From this perspective, supply chains involve networks of actors, relations and activities. All of these are involved in the movement of these elements from the original producer to the ultimate end user, and “everyone in the network is involved in making enterprise happen.” Here, it also refers to the ability to manage, including full-cycle mitigation, preparedness, responses, and the rehabilitation of a civil society. Civil society actors are required to coordinate their activities not only in planning but also when they are required to provide a joint response to changed demands (L’Hermitte et al., 2016; Carmeli, 2008).

According to McConnell and Drennan (2006a), the AHA is designed to respond to threats that impact civil society’s safety, economic growth, environment, and territorial security through war. Complex emergencies, changing threats and risks in DC involve antagonistic (or hostile) threats to civil society. Such threats are defined as a limited collection of risks and uncertainties that need to be addressed in risk management and in CD planning for war (Ekwall, 2009). In this sense, antagonistic threats are deliberate (caused), illegal (defined by law) and hostile (have a negative impact).

Deliberate threats are significant in the larger context of economic growth risks, water system failures, power outages, cyber-terror, and other scenarios that may not affect national security but that do affect CI services. CI failures can cause breakdowns at the national, regional, or local levels, with services and supplies denied for hours, days or months (Lewis, 2002). Illegal threats to legal institutions are grounded upon the control and exploitation of integral parts of the global network and are usually associated with economic growth risks (Bakioğlu, 2016). Thus, a risk is commonly defined as the likelihood of a negative incident combined with the economic impact of that incident/source (Ekwall, 2009, 2010). Legislators define an acceptable level of
preparedness to maintain a balance with regard to the type and amount of resources required to meet such threats (Gray, 2010). Hostile threats have increased since the end of the Cold War, mainly in Europe and in other developed countries (Matisek, 2017). In shaping the safety and security strategies of developed countries, one fundamental fact about defence policy is related to emergency planning. In emergency planning, the military’s capabilities to provide support to civil society have yet to be modelled in response to hostile threats (Gray, 2010). In summary, according to Pursiainen (2001), CSA’s understanding of the AHA to hostile, illegal, and deliberate threats is relevant for decision-makers when implementing safety and security strategies in practice.

1.6 Civil society in developed countries

Civil society is an important concept for creating broader safety and security capabilities in a variety of civil society functions (e.g., Foley and Edwards, 1996). The term civil society and the way it relates to safety and security capabilities is critical to emergency preparedness through different courses of action (Adger and Vincent, 2005) that involve an accelerated, long-standing process. The concept denotes a collaborative engagement between organisations and individuals (Walzer, 1992), but civil society must be organised in a different way to deal with the increased safety and security changes. According to Foley and Edwards (1996), such collaborative engagement is learned and reinforced through trust. Kaldor (2003, p.44) describes “civil society as the trusted channels through which social agreements between the state and organisations are negotiated and reproduced.” Here, the use of social agreements is meant to highlight an organisational outcome and to reflect the EPM and CD systems in the roles of humanitarian response and as coordinated capabilities for any kind of emergency planning. Following Kaldor (2003), however, the actual social contract is also an everyday process of actors’ engagement through which trusted interaction between the economy and the state involves reasons and abilities to meet safety and security changes. Thus, with increased safety and security uncertainty, social agreements in DC are not concerned with legalistic types of agreements; rather, the agreements could perhaps be described as the politics behind civil society readiness. This type of civil society readiness to changing demands in DC, however, leaves many questions unanswered (Bhalla and Lapeyre, 2016).

Some of these unanswered questions are partly definitional, and some are partly structural. With regard to the definitional questions, civil society’s capability of safety and security in DC should be defined and interpreted in connection with new demands in relation to changing threats and the threat of war (Clayton, Oakley, and Taylor, 2000). In that sense, the lack of
interpretation of the changing demands in developed countries also generates a lack of involvement. For example, due to different policies, tasks and capabilities, commercial, voluntary, and military actors have difficulties becoming involved in emergency planning. Regarding structural questions, a lack of involvement of essential actors in emergency planning can also hinder the availability of markets, such as when society strives to access commercial entities, skilled groups, professionals, labour unions, military capability, and voluntary support. Furthermore, interpretation and involvement are driving mechanisms of current emergencies and are often embedded within the complexities of SCNs. Timely recognition of changing threats thus crucially depends on both the capacity of society to interpret when a threat may develop into a full war and the type of involvement (EPM or CD) for all types of hazards in the context of DC. However, despite the increased importance of this matter, this perspective has not been reflected in academic studies of emergency management (Newton, 2006). Thus, the literature on civil society indicates the need to increase understanding of the politics behind different courses of action with regard to safety and security (Perry and Lindell, 2003, p. 336).

1.7 Developed countries and the diplomatic role

In this thesis, the definition of a developed country (DC) is concerned with the level of development and countries’ relative significance in global socioeconomic and political stability. The growth of countries is by no means limited to the most successful or the most industrialized countries that export capital and resources to the rest of the world. DC are also related to engagement in diplomatic relations towards global safety and security (e.g., Dunning, et al., 2008; Rygel et al., 2006; Alexander, 2005; Boin et al., 2005). Building on DC’s vulnerability, emergency preparedness planning and emergency response to all types of hazards imply new demands. The vulnerability of DC has only become significant in relation to global changes in the last decade. Understanding the vulnerability of DC, ranging from complex emergencies, socioeconomic failures, antagonistic threats, terror and cyber-attacks to storms and flows associated with hurricanes, is vital for determining the degree of civil society readiness to secure and protect their critical infrastructures.

To date, however, there is no generally accepted criterion grounded in theory or an objective benchmark. The level of economic development is clearly not a concept that can provide a basis upon which countries can be classified. Despite this difficulty, different conceptual aspects need to be recognised. The pragmatic starting point of this thesis is therefore the need for such a classification (Christensen, Danielsen, Lægreid, and Rykkja, 2016). This thesis focuses on DC’s capabilities to protect CI from vulnerabilities as an
essential concern in both EPM and CD (Boin and McConnell, 2007). The World Bank’s (2017) definition of DC refers to advanced democracies with substantial economic growth and complex structures. The definitions used between 1970 and 2010 are generally associated with countries that have emerged into the developed category, such as the countries in the Organisation for Economic Cooperation and Development (OECD)1 (Babecký et al., 2012). Within the EU2, developed countries such as Sweden are member states supported by “The Treaty of Lisbon” signed on 13 December 2007. The Lisbon Treaty provides the legal basis for humanitarian aid and civil protection and the mechanisms for cooperation with NGOs, international organisations, Red Cross Societies and UN agencies (EU, 2014).

Regardless of their specific association, developed countries such as Canada, the UK, Japan, Poland, Iceland, Australia, the Nordic countries, and the United States are quite different in terms of culture, institutions, social policies, and levels of inequality. Hence, other classification methods to define developed countries need to be used (World Bank, 2016). Developed countries share rather persistent risks that transcend their political, ideological, social, and technological boundaries. These risks together require a qualified global civil society to ensure the ability to address the increasing global safety and security vulnerabilities (Boin et al., 2005, p. 1). These global safety and security vulnerabilities refer to worldwide risks, geopolitical risks, and economic growth risks (e.g., Babecký et al., 2012; Christensen et al., 2016; Hildebrand, Turnill, Boivin, and Reerink, 2017; Kaldor, 2013; Trägårdh, 2007; World Bank, 2016, 2017). These risks are transnational, meaning that they are complex and uncertain and always include an international and global dimension that actors need to consider (Carl, 2014).

The aspects that lead developed countries into vulnerabilities include differences in structure and levels of democracy, debt and poverty from emerging economies (Babecký et al., 2012). Countries with limited resources, despite extraordinary progress, may still not be able to reduce their level of poverty. The consequences of persistent poverty put pressure on developed countries’ objectives and their ability to mitigate risk, which in turn destabilizes global collaboration (World Bank, 2016, 2017). Therefore, initiatives have been implemented to systematically reflect upon and take action to create the structural arrangements for EPM and CD planning for war in most developed countries (Christensen et al., 2016).

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1 **OECD**: on 14 December 1960, 20 countries originally signed the Convention on the Organization for Economic Cooperation and Development. Since then, 15 additional countries have become members of the OECD. [http://www.oecd.org/about/membersandpartners/list-oecd-member-countries.htm](http://www.oecd.org/about/membersandpartners/list-oecd-member-countries.htm).

2 **EU**: mechanism for civil protection and humanitarian aid to tackle the needs arising from a conflict or disaster. This mechanism helps EU countries provide emergency supplies for humanitarian aid (date: February 2015). [http://europa.eu/european-union/about-eu/countries_en](http://europa.eu/european-union/about-eu/countries_en).
Understanding the safety and security concerns in developed countries is relevant to studies on EPM coordination and efficiency (Christensen et al., 2016). Thus, coordination and efficiency in EPM and CD systems are goals that require specialised and flexible CSAs (Balcik, Beamon, Krejci, Muramatsu, and Ramirez, 2010).

### 1.7.1 The Swedish system and the changing demands

For Sweden, recent developments in global safety and security have created a larger political space for CSA. With this larger political space, CSAs are required to support EPM and CD systems to increase their country’s capabilities to meet changing demands (Salamon, Anheier, List, Toepfer, and Sokolowski, 1999). Initially, such ambitions, which were reinforced by public sector reforms, were termed the New Public Management (NPM) (Salamon et al., 1999). NPM is viewed as a solution to the mismanaged SCNs that led to excessive and mismatched supplies (Christopher and Lee, 2004). Sweden, by contracting out its public service provision to the private sector, encouraged business relations (Christensen and Laegreid, 2001). CSAs could choose and design their relations to avoid financial risks such as overloaded stocks and penalties for the non-delivery of goods associated with complex natural or technological emergencies and war (O’Brien, O’Keefe, Rose and Wisner, 2006).

Olson (1990) admits that Sweden is a developed country characterised by a long-standing successful economy. The Swedish welfare state has played a vital role in the development of a distinctive set of public policies and institutions recognised as the “Swedish Model.” Challenging this view, Hodgkinson (1999) claims that equivalent attention should be paid to the burden of the Swedish model due to “too much” bureaucracy when addressing new and unexpected difficulties. The Swedish welfare system is associated with increased population, declining support for the government, increased competition from for-profit actors, and developments towards a profit culture. These developments are viewed as an offset to membership within the European economic union (Hodgkinson, 1999, p. 235).

Interestingly, however, when examining Swedish safety and security, policies regarding the fundamental long-run Swedish preparedness have focused less on essential structural vulnerabilities and more on a short-run profitable culture (Trägårdh, 2007). What distinguishes Sweden’s civil society from the civil society of other countries is that Sweden has worked for peace and democracy for more than fifty years. Peace and democracy are built into the country’s cooperative arrangements with many different types of national and international organisations (Olson, 1990, pp. 3-4).

This thesis focuses on Swedish preparedness planning, which is relevant to increase understanding of how SCNs can be arranged when many different actors and their relations are required to coordinate in the different levels of
planning (Hiles, 2010). SCNs can provide Sweden with structures to facilitate reliable structures to the preparedness planning with several associations in favour of national and global safety and security. When addressing complex emergencies and major threats, including the threat of war, Sweden might also be required to organise its civil society in a different way than today. Swedish preparedness planning is built on different levels of government (national, regional, and local), however, when an emphasis is on civilian-military coordination preparedness planning has not yet been mirrored at all administrative levels in the Swedish system and nor defined to the particularities of different response demands (MSB, 2009). Thus, the probabilities of a well-coordinated preparedness planning remain low.

1.8 Contextual positioning of the thesis

This thesis explores emergency preparedness management and civil defence planning in the context of civil society in developed countries. Based on the AHA, the SCN offers structures to the myriad actors, activities, resources, decisions, and processes involved in response operations. The concern of this thesis is to explain the AHA as meaning all types of complex emergencies, changing threats, and the threat of war among the vulnerabilities of civil society and to explain the relation between emergency preparedness and civil defence as the relevant settings for political readiness to address safety and security in civil society. The understanding of SCN can provide policy incentives for the involvement of different relevant actors and their relationships in emergency preparedness and in civil defence. Thus, countries are considering improving their SCN collaboration to fulfil the demands of the system’s resilience, actors’ flexibility, and relational responsiveness. One area of importance is the civil-military coordination through networks to provide settings to the coordination of elements in different levels of planning. These concepts are shown in Figure 1.

Figure 1. Conceptual framework

Source: based on “roadmap thinking” of Ghoshal (2005)
1.9 Purpose and research questions

This study’s emphasis is on challenges in management when the SCNs of the developed country of Sweden are stressed to provide structure to an adequate response to complex emergencies, changing threats and the threat of war. Building on the increased relevance of planning for war, the Swedish CD has been adopted as a system that allows civil-military planning. As such, CSA need to develop more flexible, efficient and responsive relations in SCNs to a robust capability in the total defence. Addressing these two essentials of planning for Sweden’s safety and security involves great managerial challenges. This thesis represents an effort to shed light on the conditions for an AHA in critical SCN settings for the efficiency of growth planning, the flexibility of actors, and the responsiveness of relations. Consequently, the purpose of this thesis is as follows:

To examine the management of supply chain networks in the emergency preparedness and civil defence planning in Sweden and to investigate a developed country’s readiness when faced with complex emergencies and changing threats to civil society.

In line with the overall purpose of the thesis, some research questions can be established. First, in the context of EPM and CD in developed countries, supply chains structures become very complex (Gattorna, 2006; Alexander, 2005; Boin et al., 2005). One of the challenges is the definitions of EPM and CD, which have long been controversial (Alexander, 2002). Whereas some define the EPM as focusing on emergency planning and response to complex emergencies, the CD is often related to civil-military planning for war. The actors that are involved in these relations provide goods, services, and skills for ensuring planning efficiency (Pedraza, Martinez, Stapleton, and Van Wassenhove, 2010, p. 26). These perspectives are in line with the way Kaldor (2003) views CSAs’ engagement in the readiness of CS to changing demands. Therefore, to shed light on EPM and CD planning, SCNs settings in the context of developed countries are examined with regard to an AHA to address several types of emergencies and new threats. Thus, the following research question is proposed:

RQ1. How can supply chain networks be managed to support the emergency preparedness and civil defence planning in Sweden when faced with complex emergencies and changing threats to civil society?

A second research question is concerned with the management of SCNs for shaping the planning and to increase understanding of the system’s resilience provided by actors’ flexibility, and their responsiveness relations. When designing SCNs (Kapucu, Arslan, and Demiroz, 2010), actors’
flexibility is fundamental to capture coordination and cooperation and to provide actors’ responsiveness when they are required to be involved in different types of networks (Zhang, Vonderembse, and Lim, 2002; McManus et al., 2007). Finding two SCNs that engage in similar planning practices for collaboration and responsiveness is a daunting task. Therefore, when CSAs are required to engage in EPM and CD planning, they provide opportunities for unique combinations of networks (Alexander, 2002, 2005; Hiles, 2010). In practice, there are several ways to achieve relational responsiveness, but defining one set of best policies does not make much sense. Thus, in relation to the overall purpose of this thesis, further exploring CSA’s roles in planning over time and their capability for flexible adaptation in different SCNs in the context of a developed country should lead to a better understanding of different networks in EPM and CD practices. Therefore, the following research question is proposed:

**RQ2.** How can CSA integrate their planning of SCNs over time based on their roles and their capability for emergency preparedness and civil defence?

Considering an AHA to safety and security strategy, EPM planning in relation to CD planning is emphasised through different SCN situations. The integration of these two forms of planning might affect resilience when an overall system is required for changing demands. Whereas the CD was born out of wartime planning to organise and develop “civil-military relations” (Alexander, 2002, p.2; Nielsen and Snider, 2009), the EPM is a more blurred system corresponding to the planning and response to threat demands and complex emergencies (Alexander, 2006; Cretikos et al., 2008). These definitions, when considered with regard to the national readiness systems, the planning seem to lack a comprehensive strategic, operational, and tactic approach to adequate levels, resulting in contradictory SCN constructions. Alexander (2006, p.5) claims that many aspects of planning at the strategic level are at best theoretical and at worst absurd, which in turn implies unclear safety and security strategies. As planning is vital at all levels, a poor AHA may be negatively related to resilience goals. To address the latter part of the overall purpose, the following research question is proposed:

**RQ3.** How can an AHA planning be improved to increase emergency preparedness and a civil defence system’s resilience?

### 1.10 Expected contribution and limitations

This thesis aims to contribute to the literature on SCNs by examining settings for the AHA planning, actors and their relations in EPM and CD systems in Sweden. This thesis is different in the sense that planning efficiency, actors’
flexibility and relations in SCN settings are studied in parallel with EPM and CD. Most studies have either considered the concepts individually or included other concepts in the SCN literature. Emergency planning and its efficiency have been studied as a central concept in EPM but not as a sub-mechanism of an SCN or when examining CD planning efficiency. This thesis is also expected to contribute to the emergency preparedness literature by focusing on the involvement of CSAs, including the military, in planning in developed countries, mainly Sweden. This is in contrast to much of the existing literature on SCNs, which has a planning focus. This expected contribution is due to the inclusion of actors’ skills and their different strategic relations in the activities associated with EPM and CD planning as analysed by their roles and explicit capabilities. While most studies in the EPM field have not yet considered all these aspects together, the focus on EPM and CD in developed countries is intended to contribute to theory through application of different network settings. In support of this contribution to the preparedness planning resilience, responsiveness, coordination and cooperation, and CSA’s flexibility, the thesis also contributes to an extended AHA for both safety and security in developed countries to address complex emergencies, changing threats and the threat of war. In EPM, CI vulnerability aspects are taken into consideration.

Limitations
This thesis focuses on one developed country and is primarily concerned with the Swedish systems of emergency preparedness and civil defence. However, it is important to study other developed countries to understand how relations and activities are interrelated in different civil society settings. In this way, the analysis and relevant conclusions can improve. The focus of this thesis is limited to the organised share of CSA, including the military, volunteers and commercial actors, thereby generating a new set of preparedness capabilities that does not involve individuals, who are the larger part of society. The focus on the AHA aims to reflect on all types of hazards, including complex emergencies, changing threats and the threat of war, which vary in their likelihood and impact. This thesis focuses on the AHA in developed countries, not in less developed countries. The emphasis on EPM and CD planning is designed to improve emergency response operations. The emphasis in this thesis is mainly on the complexities of managing SCN to allow planning settings rather than on the response or reconstruction phases. This means that the greater consideration is given to emergency planners and managers.

1.11 Disposition of the thesis

This thesis has two sections. The first section, which includes the introductory chapter, also reviews the literature and the theory addressed in the thesis.
Chapter 2 presents the theoretical keystones of EPM, CD, and civil society as well as the different choices and structures. The section begins with a brief overview of EPM and CD to underline the importance of civil society in planning for dealing with complex emergencies and changing threats. The concept of CD is considered in Sweden when a different course of action is required to address the threat of war to such a developed country. Additionally, the SCM structures are considered for moderating the networks of actors, resources and activities. Through SCN coordination and cooperation the planning generates flexible structures. Finally, the concepts of EPM and CD are used to link managerial perspectives and approaches to strategic, operational, and tactic planning to the expected resulting output of an overall resilient system. In Chapter 3, the philosophy, methodology and method are discussed with regard to the study design, data collection and research approach. Information on the collected data and approaches is presented in the attached studies. Chapter 4 includes a summary and discussion of the empirical findings of the thesis. Chapter 5 presents an analysis and discussion and provides answers to the three initial RQs. Chapter 6 presents conclusions and implications and some concluding thoughts and recommendations for further research.

The second section includes the five studies. The studies are included to address the overall purpose of the thesis by focusing on the research questions. Study 1 is an examination of EPM planning in which emergency actors and their resources are essential elements that can be operationalised through coordinated SCNs in developed countries’ contexts using the example of Sweden. This study specifically addresses RQ1 by means of a set of interviews in Sweden. This study provides insights from several emergency preparedness managers and expert actors. The study is co-authored with Professor Susanne Hertz and Assistant Professor Leif-Magnus Jensen. It serves as an input to the subsequent Studies 2, 3, and 4. Study 2 is a research study that explores voluntary actors’ involvement in EPM and CD networks in the context of developed countries. The study considers the volunteer sector as playing an essential role in planning efficiency in Sweden, in which adequate conditions, structures, and management need to be provided. This study is co-authored with Professor Susanne Hertz and Assistant Professor Leif-Magnus Jensen. Study 3 examines the military’s involvement in EPM and addresses civilian-military relations in emergency response through planning. This study is single authored. Study 4 analyses the organisation of commercial relations in coordinated SCNs with the efficiency of EPM and CD. This study is single authored. Studies 2, 3, and 4 address RQ2 and are based on empirical data gathered from Sweden. Study 5 examines the strategic planning for AHA. Strategic planning is a condition for EPM and CD in providing safety and security to Sweden. The study follows the findings from Studies 2, 3 and 4 regarding actors’ involvement in SCNs. By connecting the conclusions in Study 1 on EPM resilience, Study 5 discusses AHA planning in the context of
1 Introduction

Sweden and the linkages of EPM and CD to an overall strategy. The study serves to answer RQ3. This study is single authored. In Figure 2, the flow and order of the studies along with their purposes are presented.

1.12 Summary

The chapter presented an introduction to the thesis. It began by explaining the complex emergencies in the context of developed countries. The problem of emergency preparedness and the tricky role of civil defence were presented as the contexts of two parallel systems to meet the challenges faced by global civil society with regard to safety and security shortages. When discussing the problem of complex supply chains in the context of EPM and CD, SCN provide structure to the AHA planning in diverse ways. Viewing efficiency in connection to the network frame, the managing of delimited networks is an unresolved matter in the preparedness planning. This background was followed by an overview of the development of safety and security in developed countries as well as the status of current emergency planning in Sweden to address complex emergencies, threats to civil society and the threat of war. The discussion covered issues such as civil society, complex emergencies, the AHA in the SCN, developed countries, and the Swedish model. Following this background, the purpose of the thesis was presented along with three research questions. Finally, the focus, intended contribution and limitations were presented, followed by an overview of the links between the included studies.
Section 1
KAPPA

Kappa
- introduction, problem statement;
- purpose, research questions, contribution, disposition;
- review of literature;
- methodological background;
- empirical findings;
- analysis and discussions;
- conclusions and implications

Research Study 1: The EPM and actors relation in planning
Examination of the CSA and their relations in the emergency preparedness planning in developed countries

Research Study 2: The voluntary actors involvement in the EPM planning
Analysis of the voluntary sector networks that support the EPM and CD in developed countries, specifically, public and non-profit networks and the mechanisms that affect management efficiency

Research Study 3: The management of the military involvement in EPM
Analyses the civil-military relations to respond to emergencies and the related problems in their communication, coordination and the exercise of authority in developed countries

Research Study 4: The commercial actors relations in strategic SCN
Studies the managing of commercial actors in strategic networks in emergency preparedness:
A study of multiple networks from Sweden

Research Study 5: The AHA in EPM and CD planning for safety and security
Examines the role of civil defence and emergency preparedness AHA in the improving strategic responsiveness to changed demands in developed countries

Section 2
STUDIES 1-5

Figure 2. Summary of the thesis
2. Literature Review

In this chapter, an overview of several important concepts and theories addressed in this thesis is provided. Specifically, this chapter reflects on the conceptual framework presented in figure 1 and provides a brief overview of the literature associated with the governance of the planning of supply chains in the emergency preparedness and civil defence structures of developed countries. This chapter on SCM and SCN settings in business and humanitarian literature starts with an overview of emergency preparedness underlying issues in civil defence, civil society and all-hazards approach to complex emergencies, changing threats and the issue of war. The relationship of emergency preparedness to supply chain strategies is then briefly discussed, including efficiency, responsiveness, flexibility and resilience. Prior to emergency preparedness management, emergency planning, actors, and relations are presented in their broader logic. When debating emergency preparedness management, the concept of planning elements is discussed, which continues with the summary of the essential elements of the emergency preparedness literature and a review of mechanisms in relation to response efficiency.

2.1 The emergency preparedness context

Keystones such as efficiency, flexibility, responsiveness and resilience deal with emergency preparedness and civil defence. Emergency preparedness is inherent in the definition of “political readiness” resilience (Perry and Lindell, 2003b, p. 338). Emergency preparedness is a complex, multidimensional and contemporary area of interest that is central to the design and conduct of research in management-related disciplines (Jackman, et al., 2013; Fritz, et al., 2012; Quarantelli, 1985). As such, organisational behaviour, human resource management, industrial relations, and the general field of management are associated areas of research (Easterby-Smith, et al., 2012). Civil defence refers to when planning is enhanced not in isolation but in civil-military relations. For example, to ensure the national safety and security of countries over time, total defence planning is an approach in some developed countries (Nielsen, 2011), like in Sweden (Witney, 2008).

Since Wassenhove’s (2006) emergency preparedness and logistics studies, planning has been a segment of the different management portfolios of emergency preparedness (e.g., strategic, operational, tactical planning). Other segments are emergency response and reconstruction. A valid question is whether the emerging planning demands are replacing the existing demands or complementing them (i.e., when the coordination of diverse types of SCNs
is required for effective responses). Here, the SCN is seen as the management process for gathering relevant actors, resources and activities and restructuring and explaining the relationships when supply alternatives to the traditional transaction cost approaches are required (Axelsson and Easton, (Eds.), 2016). In particular, as “networks are stable but not static,” specialised networks permit elements of emergency planning to meet the changing threats to civil society (Axelsson and Easton, 2016, p.23); (Ekwall, 2010). In this view, however, such networks are also changing, partly in response to events external to the networks and partly because of the businesses that help to define them. In addition, as new networks can constantly be designed, and old relationships disappear, the network can transform over time. Therefore, the network provides a platform for planning to meet the changing demands.

In terms of strategy, network research does not only provide useful insights; scholars also generally suggest that the network view should integrate the temporal aspects of choices in planning (Axelsson and Easton (2016). Some definitions of strategic planning are related to operational mechanisms for reacting and responding to changing demands in developed countries (Boin and McConnell, 2007; Cornwall, 2005). Emergency preparedness management in developed countries is complex. For example, in June 2007, The State Emergency Service of New South Wales, Australia, responded to almost 20,000 storm-related requests for assistance, while widespread flooding resulted in the evacuation of more than 6000 residents. “The failure of sewage and water utility pumps resulted in contamination of flood water, as well as difficulty in ensuring adequate quality and quantity of drinking water. A natural disaster was declared for a total of 19 local government areas with a population of over 1 million people The total storm damage bill is expected to reach A$1.5 billion” (Creticos, et al., 2008, p.2).

Most differences in the preparedness systems of countries are grounded in social and economic progress. Nielsen (2011) places countries into groups, the most famous example of which is grouping countries as either developing or developed. In Nielsen’s illustration, developed countries are classified by criteria such as per capita income, market access, and level of vulnerability. In the approaches of the United Nations Development Program (UNDP), the World Bank, and the International Monetary Fund (IMF), developed countries are grouped quite differently. However, their classifications are similar in that they designate approximately “20–25 percent of world countries as developed […], and countries belonging to the same category are considered alike […]; for example, all three institutions grouped Sweden, Canada, Finland, Poland and Iceland as developed based on their structures, economic systems, administrative systems, market access, and level of vulnerability” (Nielsen, 2011, pp. 18-19).

Boin and McConnell (2007) argue that keystone issues such as changing realities, critical infrastructures (CI), vulnerabilities, and civil society actors cause developed countries to address emergency preparedness in several
different ways. Changing realities in developed countries refer to developments in the post-war period; for instance, the context of emergency preparedness (and planning) previously involved national threats considered to be from “external” threats rather than “internal” failures of critical infrastructures (McConnell and Drennan, 2006a, p. 68). CI vulnerabilities imply a massive and complex scale when the core values or life-sustaining systems of a community come under threat (e.g., to safety, security, welfare, health, or integrity due to violence, destruction, damage, or other forms of danger) (Rosenthal, Boin, and Comfort, 2001). The CI is a concept central to emergency preparedness and refers to “effective functions to provide public services, enhance quality of life, sustain private profits and spur economic growth in well-functioning societies” (Boin and McConnell, 2007, p. 50; Alexander, 2005; Drezner, 2011; Boin et al., 2005; Ansell, Boin, and Keller, 2010; Boin and Hart, 2003).

2.2 Civil defence

Civil defence (CD) was born out of wartime to plan activities for civilian protection (Alexander, 2005). Previously, CD was defined by Alexander (2002, p.210) as planning to reallocate the civilian population in the face of actual or potential aggression. CD is managed by a combination of military and civil authorities and builds on doctrines and regulations. Nielsen and Snider (2009, p. 247) argue that CD is “an effective model to develop civil-military relations.” One function of CD is to enhance the role of preparedness for the uncertain national safety and security of countries (Nielsen, 2011). However, because plans and strategies are supposed to be kept secret from an assumed enemy power, CD planning is not usually subject to rules of accountability and freedom of information (Nielsen, 2002). This way of contextualizing civilian-military relations, although significantly different from the current paradigm, is not new for developed countries (Nielsen, 2011). For example, the US, Sweden, Finland, and Canada are currently seeing a wider role for CD in emergency planning.

One of the critiques of CD with regard to the significant consequences for civilian-military relations concerns the domination of political appointees at the national level (Nielsen and Snider, 2009). In addition, a deep mutual understanding must be present to provide the basis for civil-military relations that can survive significant disagreements. In the EPM, this requires actors to be flexible to secure the integrity and functioning of structures and to resolve ambiguities and conflicts (Kleindorfer and Saad, 2005). As such, CD planning is affected by factors such as policy orientation, information availability, and communication (Nielsen, 2011). For illustration, information is an area that enables explanations of the linkages among public demands, policy responses, and the nature of policy changes (Fox, 2008, p. 331). Smith (2005, p. 624)
argues that understanding the extent to which policies affect the CD planning conditions within or outside a country’s borders is fundamental because such policies impact both actors and civil-military relations.

Against this background, this thesis aspires to contribute to the disciplines of global safety and security and to the field of political readiness and its application in different countries to meet complex emergencies and new threats (and war). Research on CD has been dominated by the difference between developed and developing countries. For example, while developing countries such as Bolivia and Somalia are limited in their ability to affect global policy decisions or to determine their domestic CD outcomes, the overemphasis on safety and security is dominant in the role of the US and EU in shaping conditions for CD outcomes. Recently, however, studies have attempted to examine the shifting role of CD among other groups of “middle powers” countries, called the Third World block (Efstadthopoulos, 2015, p.4). Countries such as India, Brazil, South Africa and China are seen as becoming a force for the negotiation of safety and security on their own. The term “middle powers” here is based on Allain (2017), who suggests that safety and security require middle power states to develop approaches and enhance the emergency preparedness and response capabilities of countries (e.g., UN peacekeeping missions).

The governments of Canada, Finland, Poland, Iceland, and Sweden provide examples of the use of autonomous safety and security policies. Based on their international behaviour, these countries are recognised as middle powers (Esping-Andersen, 2017). Middle powers are guided by foreign policies towards a “humane internationalist” view, such as “[the] tendency to pursue multilateral solutions to international problems, [the] tendency to embrace compromise positions in international disputes, and [the] tendency to embrace notions of ‘good international citizenship’ to guide [...] diplomacy” (Allain, 2017, p.10-14). In this sense, CD, EPM, and the ethical responsibilities of the governments of developed countries are conditioned on the structure of the international system (Pratt, 1990). Guidance and direction for civil-military relations should develop with the inclusion of plans to accomplish such ethical responsibilities (Nielsen, 2002).

2.3 Civil society as the readiness capability

If there is no “readiness,” using the word in a rather general sense, between civil society individuals and the political and economic centres of power in a negotiated and organised system, then readiness models favoured by developed countries should be valid. In other words, civil society, as the medium through which social contracts are reproduced among actors, is the organised readiness capability to reflect the role of human preparedness for the changing safety and security reality (Kaldor, 2003, pp. 44-45). One
approach to civil society is therefore to regard the organised actors as the capability for readiness in developed countries. While organising civil society in a different way than today is the goal in addressing changing demands, it could be argued that one way is by starting with what this research offers: a focus on Swedish civil society. As such, Sweden is a developed country that both describes and can provide a strategic alternative. However, the safety and security of Sweden has remained an incomplete object. In Sweden, complex emergencies and potential threats to civil society appear as different aspects of a problem when referring to the protection of the Swedish CI. Therefore, in terms of the complete devastation and chaos that may follow an attack to a CI, “infrastructural breakdown presents great challenges that are beyond the [...] planning and management capacities of public authorities” (Boin and McConnell, 2007, p. 52) in Sweden. If this discussion of what makes other developed countries unique from a social and economic perspective is correct, then it also applies to Sweden. When the research focus is mainly on Sweden, then it is also possible to view with more clarity the threatening tendencies (Cohen, 2007).

The fact that the democratic functions of self-governance are conducted through actors suggests the importance of a linked network of democratically constituted institutions, including the national state, local governments, and civil society organisations. From this perspective, civil society has a broad and undoubtedly important role in EPM, but this role has only been indirectly addressed in the humanitarian literature (Anheier, et al., 2012; Kaldor, 2001b; Trägårdh, 2007). One reason for this failure is that civil society concerns the role of community associations, initiatives, movements, and networks related to but distinguished from the government, business and private spheres (Trägårdh, 2007). One of the major challenges in civil society is the decision to support or oppose the use of military actors for civil purposes (Kaldor, 2013). In EPM and CD, civil society therefore refers to a wider social sphere in which independent organisations are required to not only fit the democratic dimensions but also the economic dimensions (Trägårdh, 2007).

To fulfil goals in the social and economic dimensions, Ansell et al. (2010) argue that one of civil society’s weakness is the traditional EPM. Because the keystone of an overall approach in EPM is to overcome political challenges and to satisfy the demand to cope with worst-case situations, such challenges need to be properly addressed in emergency planning. Boin et al. (2005) argue that dealing with complex emergencies and changing threats carries specific political and administrative challenges that not only involve the responses but also the need to be perceived and legitimated in the planning. In particular, Van Wassenhove (2006) argues that both emergency preparedness and response demands are topics worth considering in the humanitarian domain. By contrast, according to Wassenhove (2012) and Starr et al. (2014), little research has addressed operational management in the humanitarian field.
2.4 AHA: complex emergencies, threats, war

To guide the coordination of actors when strategic, operational, and tactic planning is required, SCN can provide collaborative mechanisms. In these coordinated mechanisms, collaborative networks call for clarification of the complex emergencies, current threats, and the threat of war (Kisangani and Pickring, 2007). Such clarification is relevant for understanding the requirements for the safety and security of countries. Thus, research on the way governments and civil society actors can provide safety and security is absent in SCN discussions in terms of emergency preparedness management in developed countries (Boin and Bynander, 2015).

The terms “complex emergency” and “changing threats” (and the threat of war) are used differently in the humanitarian literature. In this thesis, the overall understanding of what threats (and war) and complex emergencies are challenges our views on the EPM and CD systems in developed countries. As such, the strategy, planning, actors, relations and emergency management are overwhelming. CI breakdowns and war in developed countries are part of the changed threats and complex emergencies that involve antagonistic (or hostile) threats to civil society. Such threats are grounded in globalisation and are defined as a limited collection of risks and uncertainties that need to be addressed in emergency management and in CD planning that addresses the threat of war (Ekwall, 2009).

![Figure 3. All-hazards approach to different types of threats](https://via.placeholder.com/150)

In this thesis, the AHA leads to different planning for strategic, operational, and tactical purposes in which all actors and relations at all planning levels are connected in the SCN literature (Koski, 2015; Farahani, et al., 2014; Jahre, et al., 2010; Hunt 2002). In Figure 3, the AHA is illustrated in terms of complex emergencies, changing threats, the threat of war and CI breakdowns to mean the components of threats, uncertainty and urgency. According to Canada
(2012), Cornall (2005), and Ekwall (2009), understanding these components allows the AHA process to generate a multidimensional, high-level view of the threats and emergencies faced by developed countries. The outputs from the AHA process should provide decision-makers in EPM and CD with an improved understanding of the relevant threats that could affect their safety and security objectives as well as the mechanisms of the SCNs. The AHA has the potential to efficiently oversee all key aspects of the inherent uncertainties along the SCN that are measured in the risk assessment process.

There is widespread use of different concepts that often mean emergency. These concepts refer to an unwanted and unexpected situation in the terms of crisis and catastrophe and are highly relevant for emergency preparedness objectives (Martin and Tatham, 2014; Tomasini and Van Wassenhove, 2009; Kovàcs and Tatham, 2009). The term “complex emergency” refers “to a crisis of sufficient magnitude to engage the attention of the world community not restricted to the nation-wide character” (Landon and Hayes, 2003, p. 2). On the other hand, Ekwall (2009) views changing threats as delineations between antagonistic (or aggressive) threats and other emergencies and uncertainties. In this sense, antagonistic threats are deliberate (caused), illegal (defined by law) and hostile (have a negative impact on the CI network). The recognition that antagonistic threats towards CI networks in developed countries are a problem leads to the recognition of one of the major challenges in EPM and CD in developed countries. Antagonistic threats towards civil society have always been a feature in both business and politics. Civil society and actors may have distinct functions and goals, but they may use similar strategies to manage antagonistic threats; however, the effects and consequences change based on the circumstances.

The WHO (2007) suggests that when countries take a strategic approach to emergency preparedness, the AHA is essential. McConnell and Drennan (2006a) argue that in exploring the AHA, the planning processes and other mechanisms necessary for emergency preparedness, mitigation and response are similar regardless of the nature of the threat. In addition, Boin and McConnell (2007) contend that developed countries cannot afford to develop separate systems for each type of threat to which they are vulnerable because threats and emergencies vary in their likelihood and impact and are difficult to predict (Von Lubitz, Beakley, and Patricelli, 2008). Similarly, Cornall (2005) highlights the strategic role of the AHA because it extends the earlier short-term focus of EPM to a long-term, global scale. In a long-term setting, the literature suggests that global civil society actors ensure autonomy and access to the markets and the rule of law to provide safety and security (Kaldor 2003).
2.5 Emergency preparedness: relation to supply chain strategies

Emergency preparedness is described by Kovács and Spens (2007) as crucial to successful responses in which managerial decisions concerning resources, activities, and capabilities are normally combined within supply chains to deal with uncertainty and complexity. One major challenge to supply chain management (SCM) is to deal with uncertainty at the strategic, operational and tactical levels (Pettit and Beresford, 2009; Van Wassenhove, 2006). One form of SCM is the supply chain network (SCN) that is used in emergency preparedness as a planning model for integrating actors, processes, operations, resources, and skills. In SCNs, “actors do not exist in a vacuum but are always connected to other actors” (Axelsson and Easton, 2016, p. 120). Due to the scarcity of resources and deficient information, the development of collaboration, coordination and cooperation is the main concern of SCNs; while reducing competition among actors, they generate efficiency, flexibility and responsiveness (Smith, 2005). Within the context of emergency preparedness management, there has been an explosion of transnational courses of action (or strategies) when dealing with complex emergencies and changing threats (Ansell et al., 2010). Although a major business strategy in the design of global supply chains is efficiency (Van Wassenhove, 2006), the humanitarian field favours “agility” as a strategy to reduce redundancies along the supply chain. Redundancy generates costs in terms of inventory or other operational capacity (L’Hermitte et al., 2016, p. 178). One of the greatest challenges in SCM and in SCN therefore, is to address efficiency and agility simultaneously with uncertainty. According to Beamon and Kotleba (2006), efficiency is a strategy for addressing redundancies and uncertainty. Efficiency therefore leads to agility. According to L’Hermitte et al. (2016, p. 174), agility denotes the ability of an emergency preparedness system to develop and maintain operational responsiveness and flexibility to manage “unexpected [...] supply chains” and uncertainties.

According to Kaplan (2002) and Hulthén (2002), the focus on the emergency supply (ES) is linked to uncertainty when different emergency supply demands are required. Changed demands of ES involve relations between buyers and suppliers’ relationships in supply chain systems that are involved in the same planning (e.g., the order fulfilment process) and that work in the same direction. Although buyers are generally the end users of a product or a service (e.g., transportation, water, food, medicine), the role of buyers in emergency operations increases through planning, and such interactions reduce the uncertainty of demand (Hulthén, 2002; Kaplan, 2002). Due to the increased degree of uncertainty (e.g., CI breakdowns, supply chain disruptions) in developed countries, the literature suggests different courses of action (or strategy principles) to address complexity, uncertainty, costs, time, and capabilities. The courses of action are agility, resilience,
efficiency, flexibility, and responsiveness (Boin and McConnell, 2007; L’Hermitte, et al., 2017; Smith, 2007). Here, the focus is on resilience as the strongest strategy priority of policy makers to overcome individual, institutional and civil society vulnerabilities and priorities (Boin and McConnell, 2007). Efficiency refers to providing items in the most resourceful manner to minimise the loss of life and maximize the value of operations (Beam and Kotleba, 2006, p. 2). For example, food, clothing, medicine, medical supplies, machinery and personnel are ES that are closely linked to SCM (e.g., contribution quality, costs, time) (Vaillancourt, 2016, p. 66). On the CSA’s side, responsiveness is the ability to sense and identify operational risks and to swiftly produce suitable responses (Catalan and Kotzab, 2003). Flexibility is the ability to act in a timely manner and to adjust operations rapidly (L’Hermitte, 2015). Kovacs (2011) discusses supply chain capability in terms of efficiency, responsiveness, flexibility, and resilience and the way these strategic perspectives have been promoted as the ultimate performance indicators in the emergency preparedness field.

In summary, any SCN involves flows of elements organised in diverse types of planning to apply different courses of action in emergency preparedness. Table 1 shows different courses of action that can help to create value to SCNs and how these are intended to be used in this research.

<table>
<thead>
<tr>
<th>Course of action</th>
<th>Value to SCN</th>
<th>How this strategic ideal is used in this study?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency</td>
<td>Low-cost supplies and economies of scale with accurate demands</td>
<td>Efficiency will be used to reflect on the transition from the tactical planning to operational planning, i.e., when SCNs become operationalised in emergency response</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>Rapid response and fast deliveries in unpredicted conditions</td>
<td>Responsiveness will be used in connection to the EPM when it relates to developing actors’ relations in SCNs and their ability to remain responsive to collaborative planning</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Rapid adaptation to meet changing demands over time</td>
<td>Flexibility will be used as a requirement for actors when integrating into the several types of SCNs in emergency preparedness to improve tactical planning and access essential planning elements</td>
</tr>
<tr>
<td>Resilience</td>
<td>A system’s stability over time</td>
<td>Resilience will be used mainly to describe the EPM system’s ability to return to its normal operating performance after responding to an emergency. Resilience might comprise strategic planning when the system is adapting to dynamic processes involving actors in different SCN, time demands, and influences from external actors</td>
</tr>
</tbody>
</table>

Table 1. A summary of courses of actions relating to supply chains
2.5.1 Efficiency

Halldórsson and Kovács (2010, p. 9) define efficiency in relation to demand, which involves time-based strategies, global sourcing arrangements, and the use of “generative mechanisms”. L’Hermitte et al. (2017) contend that when addressing supply chain practices in the humanitarian literature, efficiency is associated with operational strategies. In addition, Pettit and Beresford (2005) identify the major benefits of efficiency as reducing costs not only in the recovery phases but also in supply chains (Van der Laan, De Brito, and Vergunst, 2009). However, Van der Laan et al. (2009) argue that supplies in the emergency context are characterised by uncertainty and unpredictability, and it might be that inefficient planning is inherent in emergency preparedness management. In this sense, L’Hermitte (2015) argue that efficiency strategies might not be fully appropriate for all types of emergency preparedness planning. L’Hermitte et al. (2017) challenge Gaillard’s (2013) view for not paying equal attention to an efficiency prerequisite as a capability of a system. L’Hermitte (2014) argues that to reduce civil society’s vulnerability to emergencies, an efficient emergency preparedness system must enable CSA to go beyond their ambitions of profitability. By focusing on essential aspects and critical relations (e.g., civilian-military, commercial, volunteer) in planning, key prerequisites can be integrated into the EPM system (Kapucu et al., 2010). To achieve an efficient EPM system in a developed country, planning elements, actors’ capabilities, and critical relations need to be aligned with the supply chains based on the specific demands to reduce and prevent CI breakdowns (Gaillard, 2013). As efficiency develops, emergency systems need to make compromises related to CSA’s performance based on the supply chain design criteria (Halldórsson and Kovács, 2010). For example, the incidence of food safety scares is the primary driver of supply chain change, with the UK as arguably the most advanced country with high-profile public scares. The Australian and Canada food industry experienced a food safety scare, but to date, the UK, Canada, Australia have not experienced a major food scare on the scale of less developed nations (Hobbs, et al., 2002).

2.5.2 Responsiveness

SCM scholars have generally considered the requirement of responsiveness in key performance measures of customer benefits (Beamon, 1999). In this sense, supply chain responsiveness addresses not only speed but also the efficiency of the supply chain in the response phase. Kim and Lee (2010) draw attention to the bias associated with relying solely on a choice between speed and efficiency. Instead, in the view of Kim, Suresh and Kocabasoglu-Hillmer (2013, p. 5602), responsiveness concerns supply chain disruptions, that is, the “ability of the supply chain to satisfy customers’ needs”. Ghosh, Das and
Deshpande (2014) acknowledge that the scope of responsiveness lies somewhere within the network of actors operating the supply chain. In other words, “responsiveness is defined [...] as the ability to respond and adapt [...] effectively based on the ability to [...] understand actual [...] signals” (Catalan and Kotzab, 2003, p. 677).

In the emergency preparedness context, responsiveness is related to actors’ flexibility to remain responsive to collaborative planning (Catalan and Kotzab, 2003). Based on this logic of improving the supply chain’s responsiveness, Kovács and Tatham (2009) emphasise the preparation of supplies and the necessary interoperability between CSAs as significant elements. In the view of Jahre and Fabbe-Costes (2015), responsiveness requires preparedness, the rapid arrangement of relevant resources, and the ability to adapt efficiently in settings at all levels (e.g., local, regional, national). Ghosh et al. (2014), on the other hand, suggest that responsiveness requires the effective coordination of activities and the integration of processes along the supply chain.

2.5.3 Flexibility

According to Zhang et al. (2002), in emergency preparedness, the flexibility prerequisite exists because the system must have the ability to respond quickly and to achieve good performance with regard to skills, products and services based on both supply chain flexibility (e.g., mechanism flexibility) and EPM system resilience. In this sense, according to Kovács and Spens (2007), flexibility, as a requirement for a supply chain in emergency preparedness, lies mainly in the assessment and planning components (e.g., procurement, warehousing and transport, depending on the strategies used). Ertem, Buyurgan and Rossetti (2010) contend that procurement strategies can include contracts and flexible agreements with suppliers of key ES. Agreements can help streamline the procurement process in the initial planning. Stevenson and Spring (2007, p. 690) argue that supply chain flexibility should be considered above other types of organisational flexibility (e.g., manufacturing flexibility, agility, and supply chain responsiveness) in the “flexibility hierarchy.” They argue that there is a wide range of reasons why supply chains need to be flexible; thus, it is argued here that flexibility can also be used proactively.

2.5.4 Resilience

A major concern among emergency preparedness managers and academics is how to measure resilience and how organisations might achieve greater resilience through SCNs in the face of increasing threats. Stevenson and Spring (2007) argue that organisations in EPM play a significant role in flexibility. In this sense, resilience is a concept that has many definitions; it can refer to resilience in the supply of materials, the resilience of the system,
or the resilience of CSA (McManus et al., 2007). Resilience is the ability of a system to return to normal operating performance within an acceptable period of time after suffering distress (Catalan and Kotzab, 2003). This includes adapting dynamic processes involving the conditions, time demands, and influences of external actors. McManus et al. (2007, p. 4) claim that resilience highlights the expectations of decision-makers about their enterprise and the key actors. It offers a way to test existing plans and create new ones. In other words, “resilience is a function of an organisation’s situational awareness, management of keystone vulnerabilities and adaptive capacity in complex, dynamic and interconnected environments” (McManus et al. (2007, p. 2)).

Resilience in emergency preparedness is seen as an intricate managerial approach to preparedness systems in developed countries. Developed counties depend on the functioning of CI to provide public services, enhance the quality of life, and maintain private profits and economic growth (Boin and McConnell, 2007), which calls for the use of coordinated approaches. Resilience addresses the growing dependence on interconnected CI, which brings with it a sense of vulnerability to complex emergencies and threats such as terrorism and climate change (Perrow, 2007). McManus et al. (2007) draw attention to developed countries’ urgent need to prepare for CI breakdowns and the importance of resilience when considering the interconnectedness of contemporary organisations in SCN.

Resilience relates to the levels of actors’ integration in SCNs with regard to a frequently changing process. However, SCN integration can be affected by various levels of aggregation (i.e., the relational, the system and the network), which in turn have effects on system resilience (Axelsson and Easton, 2016). Moreover, resilience is achieved when systems are confronted with breakdowns and stress (e.g., CI failures). For instance, Folke et al. (2002) recommend that people become resilient not despite emergencies but because of them. Breakdowns can be understood not only as acute critical breakdowns (e.g., CIs such as transportation, food, or health) but also as long-lasting, slow CI breakdowns (e.g., pension deficits, environmental damage, general welfare). Holling and Gunderson (2002) extend the perspective to business and environmental resilience and to an integrated dynamic interplay with flexibility across multiple scales and timeframes. Similarly, Olsson et al. (2006) argue that the role of institutions, leadership, social capital and social learning includes aspects within the scope of resilience.

2.6 Emergency preparedness mechanisms

Perry and Lindell (2003b) view emergency preparedness as the political readiness to react and respond to demands from threats, but EPM has been criticized for ignoring efficiency, flexibility, and responsiveness in essential preparedness structures (i.e., the system, the actors, and their relations) (Boin
and Bynander, 2015; Kleindorfer and Saad, 2005; Larson, 2011). The reason for this criticism is that political readiness may refer to different things at different times. For instance, in terms of trust, commitment, coordination, loyalty, resources, and actors, very little has been written about how these aspects are linked to the SCN while building on coordination (Larson, 2011). Similarly, critics highlight the nature of safety and security changes in terms of new demands (Van Hoek, 2001) as they relate to the actors’ responsiveness and the SCN’s ability to grasp market turbulence (Van Wassenhove and Tomasini, 2009). The management of responsiveness is a necessary capability that includes organisational structures, information systems, training, planning, logistics processes and the mindsets of actors (Towill and Christopher, 2002; Van Wassenhove and Tomasini, 2009). In the humanitarian logistics literature (e.g., Tatham, Pettit, Jahre, and Jensen, 2010), there are three main levels of management: planning, actors, and the relations among actors are seen as essential to emergency preparedness when dealing with the complexity of developed countries. These three levels are described below to provide a conceptual view of an emergency preparedness system

![Emergency preparedness levels](image)

**Figure 4. Emergency preparedness levels**

### 2.6.1 Emergency planning mechanisms

Emergency planning can be defined as the assembly of the elements necessary for the efficient functioning of preparedness mechanisms. As such, the SCN, the actors and the relations are mechanisms in emergency preparedness response, reconstruction, and coordination and cooperation (LI and LIU, 2009). Critically building on humanitarian theory, Larson (2011) claims that emergency response is unnecessarily costly due to obsolete planning practices (e.g., preparedness, response, reconstruction, and coordination). For instance, one of the most costly and complex parts of an emergency preparedness system involves national governments that operate formal programmes for sharing information with intermediaries and local authorities. Previous legislation allowed buyers in SCNs to use the so-called “warranty” defence, which required only that they prove the emergency supplies were not compromised while under their control (Hobbs, et al., 2002)
Taking an emergency planning view, Perry and Lindell (2003b) argue that when moving from the local to the regional to national level, planning levels vary in terms of technology, the level of integration and expert resources. The strategic level of planning for emergency activities includes consideration of unwanted consequences on the safety and security of countries. For example, healthcare, property, and social and economic activities can, in some instances, provide information about the probability of escalating threats (Boin and Bynander, 2015). The operational level of planning is usually associated with the rehabilitation, coordination, and management of interconnected complex SCN systems and processes (Van Wassenhove and Tomasini, 2009). Other concepts and elements of planning are connected to the tactical level, which is associated with distance and time pressures during the response and recovery phases (Kovács and Spens, 2007). These levels of planning (strategic, operational, tactical) cannot be designated to specific time periods but are inherent in the resilience of emergency preparedness systems (Davoudi and Porter, 2012).

One of the major challenges in emergency preparedness is that there is disagreement when some actors claim that there is lack of local infrastructure to engage in global operations given the high uncertainty and urgency (Martinez, Stapleton, and Van Wassenhove, 2011). In addition to these challenges, developed countries are tested by diverse types of threats to their infrastructures in which CSA, including the military, need to be involved in information and communication processes to provide efficient planning and to limit costs (Banipal, 2006). Landon and Hayes (2003) state that complex emergencies are crises of a sufficient magnitude and include humanitarian crises, the breakdown of a national political authority and/or violent confrontations. On the other hand, Boin et al. (2005) argue that changing threats involve core values, the safety of people, or the functioning of critical infrastructures.

The emergency preparedness literature on developed countries and a comparison with less developed countries highlights the importance of incentives for change in determining the respective roles of public policy and private sector responses to safety and security issues (Hobbs, Fearne, Spriggs, 2002). This research compares the incentive structures for changes in SCN legislation and in private sector business strategies based on experiences in the UK, Canada, Australia and Sweden. With respect to CI (e.g., food, healthcare, information) safety and security deficiencies, these countries are quite different, leading to different incentives for change and alternative legislative and private sector responses. For example, in the UK, incentives were primarily related to crisis management and the restoration of consumer confidence following a few high-profile food safety scares. In Canada and Australia, the policy focus has been on risk management and the prevention of trade-threatening food safety issues. Private sector responses to food safety have included the growth of strategic networks in the UK and Australian beef
industries. These are less evident in Canada (Hobbs, et al., 2002). While there are a number of similarities in the development of CI safety initiatives in the developed countries discussed, there are also some significant differences in the key drivers and how they have influenced the process of ensuring levels of planning discussed in the humanitarian literature: preparedness, response, reconstruction and coordination (Van Wassenhove and Pedraza Martinez, 2012). This four-stage process is shown in Figure 5. Based on this outline, planning is vital for the efficiency of the emergency preparedness system. Preparedness allows for the management of the integration of essential elements (i.e., human resources, knowledge management, process management resources, and CSA) into coordinated SCNs. Planning for emergency response is highly strategic and allows SCNs to switch from the planning process to accurate responses. Planning for reconstruction requires the capability to coordinate SCNs so they can effectively return to the planning phases and evolve based on experience.

![Figure 5. Four-stage process of emergency planning](source: Sullivan (2003); Lindell (2013); Van Wassenhove and Pedraza Martinez (2012)

### 2.6.2 Emergency preparedness planning

Emergency preparedness planning can be seen as a set of rationales for entering into relationships (Quarantelly, 1997). It involves concern with actors ‘ability to exploit SCN access when ensuring the safety and security of society. Sisiopiku (2007) claims that planning is strategic as SCN mobilisation must occur in response to complex emergencies and to meet demands imposed by threats to the CI a of country. In planning, it is not enough that technical
knowledge is available. Innovation requires changes in SCN structures as well as changes within the actors integrated (i.e. actors’ training and self-mobilisation) (Perry and Lindell, 2003b). Actors must adapt old relationships and internal activities and develop new relations in training in response to the changing demands imposed by the new threats (e.g., terrorist acts). Mobilisation requires resources, and if such resources are not available among actors in the SCN, then innovation will fail (Axelsson and Easton, 2016). It is also apparent that they must be the correct resources in the required combinations. In terms of strategic planning, the SCN not only provides useful insights but also enables the accountability of political systems (in developed countries) in terms of appropriate responses (Perry, 1991). The strategic alternatives have been described in the emergency preparedness section (see section 2.5). The general picture is of actors at the centre of a net of relationships that constrain them and provide opportunities. Changing patterns of relationships, as in civil-military coordination, is not an easy task of strategic planning. In SCNs, civil and military actors can change their positions and acquire more control over their involvement. Thus, the central concept is one of balance and political sense, which is the key to EPM and CD planning (Alexander, 2005; Van Wassenhove, 2006).

Coordination implies that each actor or network is closely connected to the others and that they share the same information (Christopher, 2011, p. 227). Alexander (2005, p. 162) categorizes emergency planning activities through generic approaches that cover all types of hazards. Thus, in emergency planning, “all-hazards” means that the planning in general terms covers the response to all types of threats to civil society (including war). Taking an overall approach, in the view of Alexander (2005), enables economies of scale to be achieved and ensures the viability of essential elements in planning and flexible operationalisation for multiple emergencies (Van Wassenhove and Pedraza Martinez, 2012).

McConnell and Drennan’s (2006a) main premise is that pre-emergency activities can be expensive, and the closer a simulation is to reality, the greater the expense. Boin and Lagadec (2000) argue that emergencies do not respect organisational training or planning. By their very nature, emergencies are chaotic, unpredictable, and threatening, and they do not provide emergency managers with the time or the information they would ideally like to have before making decisions (e.g., contemporary emergencies are increasingly inconceivable in a world of globalisation, terrorism, and mutating viruses). Although exercises are necessary for preparedness planning, McConnell and Drennan (2006a) argue that adjustments in policies, practices, and behaviours are by no means inevitable. In this regard, while organisational recommendations for change are understood as requiring cooperative planning, a lack of funding for lessons learned might reduce the level of operational preparedness.
2.6.3 Planning for emergency response

Sobel and Leeson (2006, p.58) have argued “that the placement of FEMA under the Department of Homeland Security after 9/11 created a shift in priorities from planning for natural disasters to planning for terrorist attacks, analysing the issue from the perspective of public choice suggests that the problem with this reorganisation was that it added additional layers of bureaucratic approval. After all, the flooding of a major city through a terrorist attack on a dam or levy was certainly a well-known potential terror threat. Many potential terrorist attacks could have resulted in the necessity of a major evacuation. It’s thus hard to argue that the focus on terrorism somehow prevented the agency from preparing for the flood and evacuation of New Orleans.”

Planning is vital element of SCNs as emergency response generally involves actors’ capabilities in supply chain structures (Oloruntoba and Gray, 2006). Therefore, inspired by Hoffman (2008), the terms “planning” and “preparedness” in this thesis are meant to include not only observations of response approaches but also the execution of readiness initiatives. In broad terms, emergency managers are joined by law enforcement, the military, legislators, and elected administrators in calling for and preparing plans to address complex threats such as terrorist attacks and wars. Planning places complex threats (e.g., terrorism, cyber-attacks) in the general context of understanding human behaviour under stress by logically drawing on the literature on natural and technological disasters. For developed countries, according to Alexander (2002), complex threats imply features that separate them from other types of emergencies. In terms of consequences and planning milestones, however, there are inevitable similarities. The literature proposes several constructs to represent the problems that can arise in the context of generating emergency response plans (Perry and Lindell, 2003b). The first is an emphasis on the presence of a plan as a document rather than an emphasis on the planning process for the threat. The second is a general awareness of planning for natural and technological disasters on the part of elected officials, policy actors and law enforcement officials responsible for emergency planning. From this perspective, planning refers to the ability to quickly change and reconfigure actors and resources in response to variations in demands (Byman, et al., 2000).

Several attempts have been made in the SCN literature to methodically explain emergency response planning as a construct. There are generally two major approaches to explaining emergency response planning that have much in common: one concerns the benefits of CSA coordination, and the other concerns competences and capabilities. Boin and Bynder (2015) discuss the reasons why CSA coordination is needed and how it can be achieved in emergency response operations. The authors review the benefits of coordination to improve actors’ capabilities. The benefits of coordination include flexibility, which is mainly related to gaps between the demand and
supply of public resources. CSA’s skills, on the other hand, are specific aspects that can generate flexibility, such as when the military is involved in response operations (Rietjens, Voordijk and Boer, 2007). Some scholars have used different goals, skills, and standards to explain actors’ flexibility in emergency response planning as it relates to the balance between, speed, cost, and efficiency in the supply chain (Tomasini and Van Wassenhove, 2009). Kovács and Tatham (2009) divides response planning into controlling mechanisms and capabilities, which is largely in line with the skills, structures, and flexibility among actors required for emergency response planning (Min et al., 2005). On the other hand, flexible capabilities, which are relationally focused, can be viewed as structures that can link actors and provide a framework for safety and security strategies when civil-military capabilities are operationalised.

2.6.4 Planning for emergency reconstruction

Lindell (2013) defines emergency reconstruction or disaster recovery as the ability of an emergency preparedness system to restore normal civil activities in SCNs and to help the community return to its normal routines. Similarly, Sullivan (2003) views reconstruction planning as the potential to provide “effective recovery from disaster […] through arrangements which are accepted and understood by” emergency agencies, military bodies and the community.” Reconstruction planning has proven to enable efficient recovery from emergencies (Lunn, 2001) by framing how recovery will be prepared for and how the recovery process will actually be conducted (Lindell, 2013). Ferreira (2010) emphasises the potential of reconstruction planning for coordinating resources, information, and processes to facilitate the management of emergencies and to develop relationships among CSA (Lunn, 2001). Lindell (2013) highlights that reconstruction planning enables CSA to engage in multiple activities without changing the goals of the reconstruction process. Thus, with flexible reconstruction assessments (short-term) and efficient recovery (long-term) planning, reconstruction management can be integrated with emergency response phases or provide conditions in which CSA (e.g., commercial, community) can begin the process of recovery. Taking the reconstruction process as an integral element of SCNs that cannot operate in isolation, Sullivan (2003) categorizes reconstruction into a four-stage process, including preparedness, response, reconstruction and coordination. This view is in line with that of Ferreira (2010), who maintains that these SCN elements enable the flexible management of CSA.

2.6.5 Planning coordination and cooperation

SCN is, in simple terms, a structure that permits coordination and cooperation when optimised choices in EPM and CD are necessary for dealing with
complex emergencies and where a mixture of political factors, conflicts and extreme vulnerabilities are at play (Rietjens, 2006). The definition of coordination and cooperation, according to Gordon (2001), concerns interaction, mutual support, joint planning, and the constant exchange of information at all levels between all CSA (among all military structures, all civilian organisations) and “[...] civil influences, which are necessary to achieve an effective response (according to agreed objectives) in emergency operations” (Rietjens, 2006, p. 7).

A lack of coordination and cooperation undermines the fair and balanced assessment of an emergency (Boin and Bynander, 2015). In fact, efficiency can be partially attributed to coordinated management (Marcus, 2006). Leadership is regarded as an operational and coordinated action in which many agencies work together to achieve national preparedness (Marcus, 2006). According to Wood (2000), in a complex emergency context, preparedness coordination can apply to specific military and civilian responses. As such, the formulation of political and socioeconomic responses will depend on whether the life-threatening emergency has been deliberately imposed or manipulated rather than stemming from a natural or accidental emergency.

Coordination and leadership have occasionally been interconnected in the literature; however, most scholars (e.g., Boin and McConnell, 2007; Cornall, 2005), have regarded coordination as an outcome or indicator of leadership. Nevertheless, Wood (2000) argues that coordination can be achieved through methods other than leadership. In complex emergencies and with unknown threats, however, the public credibility of the government is weakened, such as when coordination is embedded in cross-agency and cross-government SCN strategies for terrorist acts or when coordination is achieved through society towards a durable peace. The latter argument seems to stem from Heaslip’s (2011) distinction between peacekeeping and the more recent paradigm in emergency management regarding the AHA logic. Rietjens (2006) examines the same issue and argues that coordination and communication should be viewed on a spectrum. Rietjens (2006) analyses cases such as military actors who primarily believe in the advantages of coordination efforts (which they constantly strive to achieve through logical and clear structures). Effective communication among civil authorities, humanitarian organisations, the population, and the military is vital to grow trust and mutual understanding for coordinated behaviour among (unknown) partners. However, one can argue that in such cases, other reasons for working together might be used as precondition in relation to operational problems. The difficulty seems to stem from the different viewpoints regarding the provision of information and the exchange of intelligence as subject to security concerns. Coordination has been widely discussed as having diverse drivers, as exemplified by Last (2000, p. 88), such that “everyone wants coordination, but no one wants to be coordinated by others.”
Consequently, coordination is frequently absent (van den Berg & Dabelstein, 2003).

Other concepts and terms similar to coordination are the SCN (Van Wassenhove, 2006) and the relations among different CSA, such as suppliers, aid agencies, and volunteers at all levels (national, regional, and local, individual) (Kovács and Spens, 2007). Balcik et al. (2010) provide a comprehensive study of the coordination of actors in humanitarian supply chains and show that a humanitarian SCN mainly requires adequate mechanisms, while the CSA engage in relations with those receiving aid. They argue that when moving from the relations in SCNs to those among CSAs the level of coordination and collaboration in planning increases. Kapucu et al. (2010) differentiate SCNs with expectations regarding the required resources and the “effective and wise use of such resources.” In the case of massive CSA participation, there are types of different civil-military and commercial-non-profit coordination; for instance, with a wide variety of resources, there is a need for greater coordination, communication, and fit (to eliminate redundancies) and management (to increase understanding and eliminate constraints). In contrast, Kleindorfer and Van Wassenhove (2004) limit SCN coordination to the essential flows (physical products, information, and financial aspects). McManus et al. (2007) further argue that coordination can be conferred to the economic activities of politicians, general managers and civil society only if the SCN does not allow goods to be produced and delivered in accordance with the requirements (place, time, cost, manner) and does not create efficiency. Bharosa, Lee, and Janssen (2010, p. 50) propose “exercise and management” as the next step in the evolution of coordination and for overcoming relational obstacles. Coordination is then “the managing of dependences between entities to impede difficulties when the tasks involve multi-agency coordination” (Bharosa, Lee, and Janssen, 2010, p. 50). The difference is that coordination in a humanitarian context involves various organisations/actors, each of which has its own processes, information, applications, and other technology. Coordination occurs in SCNs at various levels of emergency planning. Denning (2006) examines the community level to refer other levels of planning that require coordinated functions in internal interactions as well as pre-agreed agency leaders at various response levels. However, the other side of any coordination is that in a condition in which demand is difficult to predict, coordination will also be difficult to manage due to the vast number of actors in the SCN. This would be recognised in cases where communication and relationships are a problem (McManus et al., 2007).
2.7 The emergency preparedness actors

When examining actors’ involvement in SCNs in emergency preparedness, one must describe exactly who is included within the definition of civil society. Civil society is a term generally used to classify people, institutions, and organisations that have the goal of working towards or expressing a common purpose through ideas, actions, and demands on governments (Gemmill and Bamidele-Izu, 2002). Membership in civil society is diverse. Kaldor (2013) describes civil society actors (CSA) as organisations, associations, networks, movements, and groups that build the organisational infrastructure of a global civil society. In this thesis, CSA and organisations are used interchangeably to shed light on their fundamental roles in EPM and CD. Actors control activities and resources. Thus, in emergency preparedness, there are actors at several organisational levels. Actors at lower levels can be part of actors of higher levels. Independent of the level, actors differ from each other in terms of structure, governance, formality, and the scale and scope of their operations and revenue. Developed countries’ CSA range from a large-scale workforce to voluntary networks, from non-profit corporations to associations with no identifiable location, and from single service providers to voluntary organisations. They perform and control activities, and they access strategic, operational and tactical planning by offering capability and market shares to the safety and protection of systems (Anheier, 2012; Kaldor, 2001a; Keane, 2001).

Current threats are characterised by a high level of complexity to which CSA’s flexibility is required for adequate responses (Clayton et al., 2000). However, their relations and agreements can change suddenly and increase in complexity depending on the threat in question (Kaldor, 2003). The question is whether CSA can perform adequately given the nature of current threats and their growth in number and scale (Salamon et al., 1999). There are increased claims of inconsistency in the sense that terrorism has impacted the way countries prepare and plan for emergencies. Alexander (2002) pays attention to other hazards because of their size, regularity and collective impact. Alexander (2005) argues that terrorism has the potential to cause millions of casualties, not in isolation but in dynamic settings. The threat of terrorism matters for preparedness because conditions change over time, especially conditions in developed countries. In addition, Kaldor (2001b) claims that in classic humanitarian interventions (e.g., earthquakes, mass starvation), a role for the military has been part of humanitarian responses throughout the world.

The global civil society actors mentioned by Kaldor (2001b) perform at different organisational levels and play roles not only in isolation but also in coordinated networks:

- the classic actors, (e.g., NGOs, INGOs, social movements) often claim to speak on behalf of victims;
networks (e.g., SCN, SCM) are coordinated in many ways;
other actors (e.g., think-tanks and commissions) are close to the elite and make use of the power of words
the media (e.g., radio, television, print media, websites) use the power of words;
the military forces (e.g., home guard, intelligence groups) support response operations and reconstruction;
commercial entities (e.g., buyers, suppliers) are providers of services and products on a profit basis;
the voluntary sector (e.g., religious, non-profit) is required when skills shortages and demand gaps appear; and
public actors (e.g., police, governments, fire brigades) implement governmental policies.

Figure 6 illustrates these actors of civil society who are valuable to the emergency preparedness system. However, the following section only discusses some of these actors, such as the military, the commercial and voluntary actors, within the framework of the study.

Figure 6. Civil society actors

Source: Kaldor (2013); Kovács and Spens (2008); Donaldson and Preston (1995)

CSA are highly strategic for emergency preparedness structures as actors through exchange processes develop relationships with each other (Kovács and Spens 2008). Actors are embedded in strong relationship complexity that gives actors access to other actors’ resources to address modern threats (Kaldor, 2013). From a similar perspective, Clifford, Defee and Fugate (2010)
argue that actors base their activities on control over resources. Such control can be direct or indirect, as Axelson and Easton (2016) proposed. Direct control is based on ownership, such as when governments own the military resources they control in military activities. Indirect control is based on relationships with other actors and the associated dependence with those actors, as when commercial, public organisations and voluntary actors are involved in EPM.

2.7.1 Military forces

Military forces are an essential actor for what Kaldor (2013, p. 110) calls “the changing international norms concerning humanitarian [...] expression in an emerging global civil society.” Cross (2012) notes an increase in the number of complex emergencies since the end of the Cold War around the world as both inter- and intra-state as well as ethnic conflicts have exploded from the borders of Europe and through the Middle East, Africa, and Asia. Recent research shows that in addition to responses to natural disasters around the world, these conflicts have resulted in historically high levels of military obligations, and military commanders are working increasingly closer with civil actors and agencies (Seipel and Heaslip, 2014). One area of controversy in the humanitarian literature is whether the military should be involved in the delivery of aid (Cross, 2012). Although the findings are somewhat inconsistent, examples of man-made emergencies such as the peacekeeping operations in Iraq in 2002/03 and Afghanistan 2004, natural disaster responses such as Haiti in 2010 and Pakistan in 2005, and even the recent terror attacks in Stockholm, London, and Paris in 2017 have shown that military engagement is often demanded for the delivery of aid, peacekeeping operations and peacekeeping enforcement (Nielsen and Snider, 2009).

Nielsen and Snider (2009) maintain that civilian-military tensions exist and are structural based on legislation governing departments of defence. Recently, however, tensions have stemmed from changes in security conditions. According to Nielsen and Snider (2009), managing these tensions should be a high priority among policymakers on both sides to improve these relationships. Rietjens et al. (2007) argue that the military’s strategic, operational, and tactical planning capabilities are not developed to provide humanitarian aid.

Civilian-military relations can be interpreted as organisational structures to implement strategy (Holguín-Veras, Jaller, Van Wassenhove, Pérez, and Wachtendorf, 2012). More significantly, as Smith (2007) states in relation to complex-related emergencies, when overwhelmed by what is perceived as “uncontrolled” migration, many will turn to military forces to deal with the challenge. In 1994, the US Defence Department implemented Operation Sea Signal to manage a surge of migration from Haiti and Cuba, which was driven largely by economic and political factors. A variant of Operation Sea Signal
may become the standard in the future, particularly as the threats of change-related emergencies become more severe and spark mass migration on an ever-larger scale. Traditional military planners may resist such non-warfighting roles and assignments, but the scale of destruction and resulting instability will likely require such deployments. After Katrina, for example, FEMA played the role of the responsible party for civil-military coordination and the coordination of all relief supplies and as the primary permission granter to allow military and suppliers to enter the disaster area.

2.7.2 Commercial entities

Pettit and Beresford (2005, p. 314) consider commercial actors other types of CSA that are undiscussed in the humanitarian SCN field. The authors argue that “the transfer of knowledge between commercial and other types of actors has been limited, and the latter remains relatively unexperienced.” Kovács and Spens (2007) argue that by engaging in commercial relations, commercial actors (e.g., business logistics specialists) have predictable demand goals, but humanitarian actors address unknown or changing situations and unpredictable demand. Humanitarian actors, who are associated with their commercial counterparts, have greater challenges in managing cooperation and coordination efforts (Larson, 2012). Several supply chain network management (SCNM) scholars have called for increased coordination and cooperation. McLachlin, Larson, and Khan (2009) suggest considering different emergency preparedness agencies, suppliers, the military, volunteers, and local and regional actors as suitable for operating in SCNM. Kleindorfer and Saad (2005) refer to coordination as a strategic structure “[...] equivalent to collaboration, in which redundancies and duplicated efforts and materials are avoided.” Larson (2012, p. 2) also highlights the strategic role of coordination “between business and humanitarian actors” and discusses how actors’ motivation (for-profit versus not-for-profit) and the environment (uninterrupted versus interrupted) in SCNM can balance the conflicting objectives of flexibility, efficiency, and responsiveness. From Rojas' (2000) perspective, the efficiency paradigm is one of the most important research subjects in SCNM theory and should be applied to the organisational performance of actors. One example of this application, according to Salamon and Sokolowski (2001), is the organisational performance of for-profit and non-profit entities and their contributions to social value. Rojas (2000) refers to for-profit organisations as vital for planning. In this regard, for-profit actors can help create flexibility in an SCN strategy.

2.7.3 The voluntary sector

The voluntary sector or voluntary actors are another important resource in emergency preparedness. Kendall (2003, p. 3) describes the volunteer sector
as an “extensively essential part of civil society” that increasingly takes on roles previously deemed the responsibility of the state. Fenton, Passey and Hems (1999, p. 2) argue that volunteer actors can help provide flexibility in situations in which “skill shortages and skill gaps demand types of ‘flexibility’ that allow for responsive volunteer actors to fulfil civil society missions.” According to Seippel (2010, p. 208), this ability to adapt to actual demands is a feature of volunteer actors when they assume roles in EPM and CD. Other scholars use flexibility and responsiveness as compatible indicators and do not participate in debates regarding their differences (Kaldor 2013; Trägårdh 2007). This is due to the fundamental overlapping characteristics of CSA in a civil society context, where there is often no strict distinction between voluntarism and professionalism.

Addressing the confusion around these interrelated ideas (professionalism vs voluntarism), Seippel (2010) proposes flexibility. Responsiveness, on the other hand, should be considered when addressing professionalism, whereby the functioning of missions is associated with management. Most importantly, Wijkström and Einarsson (2006) claim that non-profit actors, as in the volunteer sector, stem from a culture of labour and trade union movements. In Sweden, for example, they represented a reaction against the increased power of a capitalist class following the country’s industrialisation, and the free-church movement can be understood as a reaction by Swedish organisations to perceptions of an overly liberal national policy. In Seippel’s (2010) view, the relations between professionals and volunteers are very important. Professional organisations (administrators, organisations, and businesses) provide expert knowledge, and much of this knowledge refers to management practices. The members of volunteer organisations, on the other hand, feel responsible for and enthusiastic about their organisations. According to Seipel (2010), the main point is that volunteer actors provide skills based on voluntary obligations, while professional actors provide expert knowledge based on their organisational management, and the relations between the two have strategic value for the EPM and CD.

2.8 Emergency preparedness relations

This section describes only some key types of relationships that are relevant for the study of EPM: civil-military, commercial customers-buyers/suppliers, public-private, and non-profit-profit relations. Figure 7 illustrates several types of relations that can lead to the development of efficient SCN settings for the EPM and CD planning. In emergency management planning, for each of the essential elements, SCNs have been outlined between these elements. Elements form structures that can be proposed to generate coordination. Axelsson and Easton (2016) argue that actors develop and maintain relationships with each other; understanding the capability of actors requires
knowledge about the nature of actors’ relationships with other actors. In the same way, SCN activities are related to each other in patterns that are related to the networks’ choices (Kleindorfer and Saad, 2005).

SCNs are viewed as a critical mechanism through which different types of CSA can provide required supplies, equipment, and vital resources (Hale and Moberg, 2005; Van Wassenhove, 2006). In an SCN, different types of CSA have different relationships with different parts of the network (e.g., customers, suppliers, buyers, producers, and competitors) (Håkansson and Snehota, 2006). Network management may also be viewed as “promoting the mutual adjustment of the behaviour of actors with diverse objectives and ambitions […] in a given framework of interorganizational relationships” (Kickert, Klijn, and Koppenjan, 1997, p. 44).

These relations are believed to vary with regard to the amount of time required to address highly strategic supply issues (Gadde, Huemer, & Håkansson, 2003). The industrial network approach includes a design to manage responsibilities and environments that demand flexibility and responsiveness (Baker, Nohria, & Eccles, 1992). Snehota and Hakansson (1995) apply SCNs as an approach to business relationships in the global context as in-network CSA can construct a unique set of (internal and external)
linkages to manage exchanges of resources, actors, and activities. Since Larson’s (2011) study on SCNs, the relationships among CSA (e.g., governmental agencies, military actors, the voluntary sector, and commercial actors) have been used to explore unique issues. Several major relationships influence EPM and shape the coordination of different types of SCNs (Grandori and Soda, 1995). This is due to the escalating demands from threats in recent years, which have changed in scope and complexity. According to Hale and Moberg (2005), these threats include, for example, terrorist attacks, natural disasters, and complex emergencies (regional conflicts, migration). Similarly, low levels of emergency preparedness can create SCN disruptions. Because SCN disruptions can be critical to EPM planning, uncontrollable external events can have significant financial and operational impacts on organisations that are not properly prepared (Hale and Moberg, 2005).

Regarding emergency planning coordination, Van Wassenhove (2006) argues that a differentiated network can tolerate profit better than organisational hierarchies. In his view, the power of organisational dependence, the number of actors to be coordinated, and the amount of resources that need to be synchronised can pose limits on the size and scope of organisational hierarchies. Van Wassenhove and Pedraza Martinez (2012) admit that relations in EPM are linked to organisational hierarchies but are different from the relations among commercial, military and volunteer actors in networks structures. Thus, SCN coordination can help to balance the actors’ efficiency. Rietjens et al. (2007) examine such relations from an economic perspective (e.g., public, private, commercial, and professional). Thus, specialisation, experience, scale, and scope are identified as important for the efficiency of an SCN. Here, the role of technology, related costs, learning problems, and reductions in governance costs are emphasised. Other perspectives to understand the relations among actors in an emergency preparedness context include organisational characteristics (e.g., volunteers and non-profits) and strategic goals (e.g., civilian-military). Understanding these strategic characteristics can stimulate the formation of networks (Grandori and Soda, 1995).

2.8.1 Civil-military relations for safety and security

The understanding of civil-military relations is relevant for fulfilling the purpose of this thesis, which is to examine the relationship between emergency preparedness management and civil defence planning in facing changing threats to civil society. Civilian-military relations are important for enhancing security and safety in civil society and civilian control of the military. In preparedness “civil management is defined as the model to which the country’s elected leadership can rule over the armed forces.” For example, it seems desirable to make the best possible use of the relations between the top-level political actors and the highest-ranking generals and admirals. This
way of conceptualising and thinking about civilian-military relations, although
significantly different from the current paradigm, is not new to developed
countries (e.g., USA, Sweden, Canada) (Nielsen and Snider, 2009, p. 248).

SCN academics have largely regarded civilian-military relations as strategic
in humanitarian aid. Various approaches have been used to consider civilian-
military relations in humanitarian, emergency preparedness, and military
research. In contrast, Alexander (2005) claims that by the late 1960s, social
research had matured in examining such relations, which generated doubts
about the efficiency of the usual military system. Finally, beginning in the
1970s, researchers proposed non-military models of emergency preparedness.
One such example is the incident command system, which is distinctly
different from the traditional command and control model used to direct
troops during combat as it relies on information sharing and collaboration
between actors.

Another arena of discussion in civilian-military relations studies is the level
of military involvement in humanitarian assistance (Cross, 2012). While this
softer side of the military is welcomed for addressing the alarming increase in
complex emergencies throughout the world, many NGOs have expressed
unease with the military’s involvement in these activities. According to Cross
(2012), the general view is that in complex emergencies, there should be a
clear distinction between the military and non-military domains. This view is
reinforced by principles of the International Humanitarian Law, which
attempts to make a clear distinction between combatants and non-combatants
to protect the latter from armed attacks. Nevertheless, military actors are
becoming increasingly involved in establishing a secure environment on the
ground within which humanitarian activities can occur in safety and where
various forms of coordination and cooperation are crucial (e.g., in Haiti 2010
and Iraq 2003).

Byman et al. (2000) claim that civilian and military entities are often forced
into situations in which they must fulfill both political and humanitarian
objectives. These organisations face operational challenges when a wide range
of actors are involved who have divergent goals and objectives. Ultimately, this
will mean that problems will arise between actors who perceive the military’s
exercise of authority as challenging. Managing these problems should be a
high priority among all concerned actors, but most civilian policymakers often
have little contact with military actors and with warfare. Thus, civilian and
military entities can face a “clash of cultures.” Another complication is that
the relationships between generals and civilian leaders are usually personal,
political, and professional. The interpersonal relationships between civilian
and military actors can therefore become difficult. The problems inherent in
these relationships cannot be resolved through planning but demand further
exploration (Nielsen and Snider, 2009, p. 46).
2.8.2 Commercial relations with buyers and suppliers to SCN

A major concern among SCNs is how to operationalise commercial relations with buyers and suppliers and maintain control because, as Axelsson and Easton (2016) argue, suppliers may be competing for business in one sense and yet be mutually dependent in another. Commercial relations can be viewed from different perspectives, including that of the actor in an SCN, the network, or strategic coordination. Commercial relations are strategic and can therefore be defined as “complex business processes that require resource allocation from the buyer to the supplier to achieve a set of complex outputs. These outputs and inputs may be asymmetrical, depending on the desired outputs of the buyer and supplier. In addition, these relationships will be influenced by their respective external environments and constrained by the parties’ strategies, goals and powers” (Cousins, Lamming, Lawson and Squire, 2008 p. 173).

SCN is recognised as a strategic business process. One concise definition of an SCN is that developed by Lambert, Stock and Ellram (1998) as the integration of commercial relations with buyers and suppliers to provide products, services, and information that add value for customers. Commercial relations are required to integrate elements of emergency planning in networks. These relationships are referred to as profit relations when they concern commercial agreements in which the profit is calculated. Commercial actors that become involved in emergency preparedness despite the lack of an immediate profit incentive may understand that there is a “delayed financial outcome,” such as goodwill or the ability to seize an initial market share, as when renovating the CI (Swanson and Smith, 2013, p. 335).

Managing commercial relations along the SCN is strategic. In the view of Cousins et al. (2008, p. 172), relationships are defined as “processes” in areas such as culture and communication. Processes have important properties: first, they require inputs in the form of resources; second, they require an output. For example, communication (which is a process) requires resources; for example, a speaker is a resource who uses a communications process to achieve the output of knowledge transfer to the receivers of the communication. As in communication, relationships also require resources, such as people, technology, time, and effort, and they should have an outcome, as shown in Figure 8. Price or cost reductions (two distinct strategies that should not be confused), technology sharing, development, and risk sharing are possible outcomes. Processes need to be viewed as both efficient (how quickly they are conducted) and effective (how well they achieve the focus of the organisation’s strategy). The objective of efficiency in this sense is to allocate to the minimum amount of resources to achieve the maximum amount of output.
A more normative approach of theory has been observed when private actors participate in emergency responses because it is the “a moral basis for that claim” and the right thing to do (Gibson, 2000, p. 245). In this sense, commercial actors participate and provide expertise for the emergency response (e.g., communication systems) (Swanson and Smith (2013). According to Young (2000), another way to consider commercial relations is when non-profit actors allow the government to make changes to public policy while maintaining accountability to the public. Similarly, the government can attempt to influence the conduct of non-profit actors by regulating their services and responding to their support initiatives. This view does not suggest any specific relationship between the levels of non-profit and commercial activity. For example, non-profit actors can advocate for smaller or more efficient governmental processes, or they can advocate for new programmes and regulations that would increase government activity. Either way represents a choice to achieve the best deal for any actor (Cousins et al., 2008).

2.8.3 Public-private relations and public policy

Developed countries’ decentralisation of public policy have increased delegated forms of decision-making in which the private sector play a more prominent joint role in the preparation and implementation of public policy (Nijkamp, Van Der Burch, and Vindigni, 2002). In fact, according to Jamali (2004, p. 416), the growing importance of managing market mechanisms tied to the achievement of privatisation (in countries like Sweden) has sharply increased interest in continuously evolving “Public-Private Partnerships” (PPPs). PPPs are regarded as an “institutionalized form of cooperation between public and private actors, which, based on their own indigenous objectives, work together towards a joint target” (Nijkamp et al., 2002, p. 1865).

In the emergence preparedness context, commercial actors have made great progress in their contributions to emergency responses (Van Wassenhove and Tomasini, 2009) in developed countries. The emergency

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Figure 8. Relationship resources

Source: inspired by Cousins, Lamming et al. (2008)
needs (e.g., logistical, medical, food, shelter) during complex emergencies have outpaced the capacity of public actors (Koppenjan and Enserink, 2009; Schneider, 2005). This reduced capability of public actors to respond to emergencies is partially due to an excessive focus on costs (e.g., the costs of logistics) rather than strategic components (Beamon and Kotleba, 2006). PPPs have become a preferred institutional arrangement because they are perceived to remedy a lack of coordination in traditional public service delivery.

Commercial relations and the PPP concept have sometimes been used interchangeably in the humanitarian literature. One reason for this approach is that most attempts to utilize PPPs in Third World contexts do not seem to satisfy the required criteria. For example, donor agencies often promote privatisation and government subsidies to private entrepreneurs to build PPPs. Therefore, privatisation and subsidies should not be confused with PPPs (Jamali, 2004). Based on that logic, Gidman, Blore, Lorentzen & Schuttenbelt (1995) argue that most researchers regard PPPs as one possible outcome of a common range of possible relationships between public and private actors for the cooperative delivery of products and services, as exemplified in Figure 9. The authors state that there is no single PPP classification and that there are diverse possible arrangements. For example, the authors identify cases in which PPPs differ by legal status, governance structure, management, policy privileges, contributions, and operational roles. PPPs are also used to coordinate and collaborate in a search for common objectives.

Figure 9. Classification of public-private partnerships

Source: Inspired by Gidman, Blore et al. (1995)

PPPs have also been called the “third way of government.” The term “exponents of PPPs” has also been used. The concept has been actively adopted by Canada, Australia and, recently, New Zealand and other developed countries because it represents a “middle track between state capitalism and,
privatisation” (Leitch and Motion, 2003, p. 273). Proponents contend that outsourcing, privatisation and partnerships between business and the government transfer costs and risks from the public to the private sector. Moreover, Leitch and Motion (2003) argue that the adoption of PPPs has several significant implications for public affairs. The first is related to the proper place and role of business in the political environment, and the second concern is PPPs’ potential to undermine public confidence in the independence of the government from the private sector. In this view, public businesses activities, such as those that directly involve governments, should always be the subject of public examination. Just as the public sector must both operate and appear to operate in the public interest, the actors involved with governments must appear to serve the public interest.

2.8.4 Non-profit and profit relations to public service

There is widespread debate about the role of the non-profit actors or voluntary sector and their relationship with the profit sector for public service. The non-profit sector can act as a major platform in the provision of skills and public services. The profit actors’ relationships with volunteer actors will be sustainable only if both parties understand each other’s objectives and capability limitations (Plowden, 2003, p. 415). A combination of non-profit and profit actors’ capability may (or may not) involve previous relationships, and such relations may have been of a complementary or resource exchange nature. Following Axelsson and Easton (2016), there is a tendency to continue with the existing form of relationships, partly due to the cost of switching and the loss of relation-specific knowledge. This can have implications for emergency planning, which (in its current form) often has loose relationships.

Saidel and Cour (2003) claim that non-profit actors work with “value-expressive” capability. On the one hand, non-profit actors are often highly professionalised and have more education than their for-profit counterparts. In this logic, a high degree of “professionalisation” guides the “values of professionals, including the need for autonomy, participation in shared decision-making, and collegiality among employees, which may be adopted as values for the entire workforce” (Saidel and Cour, 2003, p. 6). On the other hand, non-profit actors deserve attention in bidding because they provide benefits to the government (reduced opportunistic behaviour and reduced transaction costs) when negotiating, monitoring, and enforcing a contract (Steinberg, 2003). Non-profit actors are considered partners with the government as they help to carry out the delivery of public goods largely financed by the government. Given this logic, the expenses of nonprofit actors and the government have a direct relationship because when the government’s expenses increase, it can help to finance increasing levels of activity by non-profits (Young, 2000). According to Plowden (2003), however, more important than the type of organisation is the level of mutual
understanding on both sides, such that the “government needs [...] to take the volunteer sector seriously.” For instance, public organisations need to support the notion of a “partnership” and consider agreements between their representatives and the volunteer sector based on adapted principles for future relations (Plowden, 2003, p. 418).

Non-profit and profit relations in emergency preparedness are a critical concern for managers (Lundström and Svedberg, 2003a). The need for the volunteer sector has grown due to developed countries’ increased vulnerability to complex emergencies (Perrow, 2007). Calls for consideration regarding volunteer sector involvement are part of “emergency planning” and emergency response (McConnell and Drennan, 2006a, p. 66). Therefore, volunteer actors are required for emergency responses (such as terror attacks or earthquakes) in fields such as emergency medical technicians/emergency medical service providers or firefighters (Rotolo and Berg, 2010, p. 2). Nolte and Boenigk (2013) claim that the key role played by the volunteer sector occurs through extensive ad hoc networks of actors in emergency responses. Thus, there is a need to highlight the relevance of communication, coordination, and mutuality in public non-profit networks as well as the management of volunteer actors (McConnell and Drennan, 2006a).

2.9 Emergency preparedness management

Emergency preparedness management (EPM) can be defined in many ways. Some definitions are all-encompassing, while others are simple and straightforward. According to Shan, Wang, Li, and Chen (2012, p.2), “Principles of emergency management are: prediction and prevention, priority protection and rescue of people’s lives, compliance with the fundamental rights and freedoms, accountability for emergency management of the public administration authorities; cooperation at national, regional and international level with similar bodies and organisations; transparency of activities carried out for the emergency management, continuity and gradualness of emergency management activities, efficiency, active cooperation and hierarchical subordination of the components in the National System.” In this thesis, EPM is extended with CD to allow different courses of action in emergency response, recovery and reconstruction (Martin and Kaldor, 2009, p. 5). EPM and CD consists of civil and military planning. According to Anttila (2012), civil planning management involves the civilian field of emergency preparedness, including the formation of governmental structures that enable trust and coordination. The CD, on the other hand, involves military planning, which refers to civil-military activities that are often described as part of a wider structure of safety and security.

In this wider structure for the safety and security of developed countries, according to Heaslip (2011), due to the increased attention paid to EPM in the
last two decades, the coordination between civilian and military actors has developed on two levels: the strategic level and the operational level. In his view, the strategic level refers to a different course of action, while the operational level refers to a specific function within a AHA plan (use of the military). To provide effective responses based on the AHA, military and civilian actors need to coordinate their capabilities and activities with other actors (commercial and volunteer) to manage the fit and flow and to share resource dependencies (Kovács and Tatham, 2009). EPM consists of civilian and military management. Civilian management refers to the civilian field of emergency preparedness. At the strategic level, the safety of civil society and the security of the country are two important aspects of EPM and CD planning for war (McConnell and Drennan, 2006a). However, according to De Coning (2007, p. 1-25), these multiple actors and denotations of strategy have caused considerable confusion. At the strategic level, civilian-military coordination is used to enhance the “multidimensional whole of the government or to provide a comprehensive approach” when various civilian actors and at least one military actor are involved in a coordinated initiative or mission.

At the operational level, civilian-military coordination refers to specific policies, courses of action, structures and elements of plans that are used to manage the relations between military and other actors in response operations (De Coning, 2007). At this level, the focus has chiefly been on civilian-military relations in planning (Alexander, 2005). Although EPM does not follow automatically from emergency planning, research has shown that successful EPM mainly results from the coordinated activities of actors. In the view of Quarantelli and Russell (1977), there can be management problems with respect to the communication process, the exercise of authority, and the development of coordination that cannot be managed ahead of time in the planning stage but that are important issues in EPM.

Altay and Ramirez (2010, p. 61) analyse the strategies required to meet threats to the supply chain based on “the probability of loss and the significance of that loss to the organisation or individual.” Drawing on Van Wassenhove (2006), this view represents a wider perspective of the discussion of the essential elements of EPM, in which planning is essential to the supply chain because it can help to explain how countries address their developments in terms of coordination of actors, resources and emergency activities. For example, McConnell and Drennan (2006a) claim that several developed countries have revised their emergency plans and strengthened their preparedness through the use of AHA management with military actors, which provide extra resources. Their examples originate in the work of the Swedish Emergency Management Agency, Emergency Management Australia, and the Directorate-General for Public Order and Safety in the Netherlands.
2.9.1 Elements of EPM

EPM requires several elements that must be in place not only to provide operational flexibility that ensures the mobilisation of the right variety of emergency supplies (Van Wassenhove, 2006) but also to provide a responsive basis for strategic action with regard to safety and security (Alexander, 2002). These EPM elements guarantee coordinated emergency planning and the involvement of CSA. Connaughton (1996) claims that allowing access to resources from “all actors” increases the level of operational flexibility regarding, for example, the provision of emergency supplies and their timely transportation. In his view, the word “military” must be used with care. One reason for this is that military force can take many forms. Force size, capabilities, and attitude vary widely by country. Differences in military competence and professionalism are related to the definitions, policies, and doctrines developed to achieve operational goals. Figure 10 illustrates how the essential elements are related to one another and to EPM.

![Figure 10. Essential elements of EPM](image)


EPM involves a number of coordinated SCN mechanisms, planning levels and a policy-making body in a complex system. Heaslip (2011) claims that no actor has the authority to take the lead and coordinate the actions of others. Stephenson (2005) contends that strong competition among actors is not encouraging to environments that foster coordination (e.g., between civil, military, commercial, or voluntary actors). Perhaps the most significant challenges of EPM identified by Van Wassenhove and Tomasini (2009, p. 47) are the relations between “demand and response” and the implementation of a strategy based on the essential flows (i.e., materials, information, financing, people, and knowledge). Furthermore, Kovács and Tatham (2009) claim that
military actors need to coordinate their activities with other civilian actors. Although time is critical in emergency responses, military and civilian actors need to avoid engaging in redundant activities along the supply chain by coordinating their resources and activities. Planning from an AHA perspective can benefit the development of an alternative plans that ensure strategy implementation and the mobilisation of people, materials, and services as well as communication in developed countries.

Although EPM is recognised as a mechanism to achieve efficient emergency responses, all elements of the plans need to be coordinated. While the actors, agencies, and departments must establish flows of goods (material flows), information provided through SCNs ensures that coordination and cooperation are achieved. Information flows and financial resources must be sufficient for each link in the network to function. This is essential for an SCN to work effectively regardless of whether it involves business, military, volunteer, or humanitarian actors.

2.10 Summary

The concluding Table 1 shows “tags or labels” to arrange the concepts into an even tighter and smaller number of categories (Miles and Huberman, 1994, p. 287). Thus, the EPM structure is conceptualised for the context of this study. It is suggested that in the study of the SCN, the EPM and CD are two contexts that employ the AHA and are significant providers of the political readiness to ensure the safety and security of civil society. Regarding the first research question, several aspects of SCN in EPM are explored at diverse levels of planning. Actors and their relations at strategic, operational and tactical levels are coordinated in SCNs. Thus, emergency preparedness managers must extensively study the SCN connection to CD planning for war. Planning for war is highly strategic, expensive and uncertain, meaning that no country can foresee how a new type of war will really look or the demands imposed. This is evident when we closely examine the Swedish total defence, in which CD and EPM planning are integrated. The second research question is limited to studying CSA’s involvement in EPM planning, mostly by examining different SCN strategies and explaining the relations among the actors and their key roles in emergency planning. The third research question is mostly used to analyse the main relations between EPM and CD as they together affect safety and security strategies and the main effects of supply chain strategies conducted by CSA.

This section presents an overview of the literature and the theories used in the thesis. The concepts of emergency preparedness management and civil defence - which are the main concepts in the thesis - are reviewed. These two concepts are reviewed in more detail in Studies 1 and 5 through systematic research studies. The first and fifth studies in the thesis specifically focus on
defining the concepts of emergency management, civil defence planning, and the actors’ roles in the system as well as reviewing how researchers have conceptualised, motivated, and developed these concepts in the context of developed countries. These two studies serve to answer the first research question discussed in section 1 by both (the first study) preparing the way for the three research studies that follow it and (the fifth study) integrating the main building blocks at a comprehensive level.

Table 2. Studies and corresponding concepts

<table>
<thead>
<tr>
<th>Concepts and Theories</th>
<th>RQ</th>
<th>DC</th>
<th>AHA</th>
<th>CS</th>
<th>SCN</th>
<th>EPM</th>
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The literature on emergency preparedness and civil defence was briefly presented mainly in relation to the issues addressed in Studies 2, 3, and 4. More specifically, research questions 2 and 3 and are mainly based on the literary structure of study 1. Issues concerning civil society actors, which are used as the main building block of paper 1, were presented in this section. Studies 2, 3, and 4 are structured to address research question 2. The concepts of resilience, flexibility, and responsiveness, which were reviewed in this section, and actors and their relations are considered in Studies 2, 3, 4, and 5. Research question 3 is intended to be addressed in all four studies, which are based on the same types of strategic concepts as Study 1.

1 RQ: Research Questions
4 DC: Developed Countries
5 AHA: All-Hazards Approach
6 CS: Civil Society
7 SCN: Supply Chain Network
8 EPM: Emergency Preparedness Planning
9 CD: Civil Defence
3. Methodology

This chapter discusses the philosophy, methodology, method, and techniques in which research can be defined to provide an organised investigation for new knowledge, establish novel information and develop theories. Figure 11 illustrates the issues that will be discussed in the sections of this chapter. The philosophical view that contrasts positivist and phenomenological paradigms is discussed. The methodology, methods (approaches) and techniques supporting this thesis are discussed and provide an applied basis for the analysis, in which the empirical material is elaborated. Finally, a summary of the issues is presented.

![Figure 11. Essential layers of research design](image)

Inspired by “research methods for business research” of Saunders (2011)

3.1 Philosophies and paradigms

The SCM research has used methods and approaches that provide ground between contrasting positivist and phenomenological paradigms (Mangan, Lalwani, and Gardner, 2004). A paradigm is a very general conception of the nature of scientific effort. Gummesson (2000, p. 18) notes that a “paradigm is basically a world-view.” SCM research has primarily been built on quantitative research viewed through a positivist lens, but current SCM research is increasingly calling for more qualitative methodologies (Busse, Meinlschmidt and Foerstl, 2017). A non-positivistic orientation to the study of SCM will create contexts in which no study can go unchallenged by opposing paradigms (Denzin and Lincoln, 2008, p.97).
A constructivist view of science is focused on the interactional structure of everyday life: “everyday realities are actively constructed in and through forms of social action” (Denzin and Lincoln, 2008, p.341). Constructionism can be applied to almost any research approach. For example, in the fields of business and management research, this view is generally concerned with the phenomenological dimension and with researchers positioned along a more subjective-objective angle. In Burrell and Morgan’s (1979) view, those in the interpretative paradigm (subjective ends) have a “concern to understand the world as it is […] see the world as an emergent social process […] and seek to understand at the level of subjective experience.” In contrast, those in the functionalist paradigm (objective ends) “approach their subject matter from an objectivist point of view […] seek to provide essentially rational explanations […] and apply the models and methods of the natural sciences to human affairs” (Burrell and Morgan, 1979, p.25-8). There is equally “considerable blurring” (Hussey and Hussey, 1997, p. 47) and simplification. Nonetheless, in management research, the various paradigmatic positions are now often debated in relation to an antithesis between two schools of philosophy (Gummesson, 2000, p.19; Hussey and Hussey, 1997, p.47), which are generally referred to and roughly branded as positivism and phenomenology. Following Gummesson (2000, p.19), both positivist and phenomenological paradigms have “many facets and names.” Social scientists adopted the positivist approach when the social sciences were emerging towards the end of the nineteenth century because the approach had previously been used with much success in many of the natural sciences (Capra, 2002, p.75; Hussey and Hussey, 1997, p.52). Table 2 outlines some of the key features of both paradigms.

Table 2. Key features of positivist and phenomenological paradigms

<table>
<thead>
<tr>
<th>Issues</th>
<th>Positivist paradigm</th>
<th>Phenomenological paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic beliefs</td>
<td>The world is external and objective</td>
<td>The world is socially constructed and subjective</td>
</tr>
<tr>
<td>Researcher should</td>
<td>Observer is independent</td>
<td>Observer is part of what is observed</td>
</tr>
<tr>
<td></td>
<td>Science is value-free</td>
<td>Science is driven by human interests</td>
</tr>
<tr>
<td></td>
<td>Focus on facts</td>
<td>Focus on meanings</td>
</tr>
<tr>
<td></td>
<td>Look for causality and fundamental laws</td>
<td>To understand what is happening</td>
</tr>
<tr>
<td></td>
<td>Reduce phenomena to simplest events</td>
<td>Look at the totality of each situation</td>
</tr>
<tr>
<td></td>
<td>Formulate and test hypotheses</td>
<td>Develop ideas through data</td>
</tr>
<tr>
<td>Preferred methods</td>
<td>Operationalising concepts so that they can be measured</td>
<td>Using multiple methods to establish</td>
</tr>
<tr>
<td>include</td>
<td>Taking large samples</td>
<td>different views of phenomena</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Small samples investigated in-depth or over</td>
</tr>
<tr>
<td></td>
<td></td>
<td>time</td>
</tr>
</tbody>
</table>

Source: Easterby-Smith et al., 1991 and 2012; Denzin & Lincoln (2008)

According to Mangan et al. (2004), the discourse among social scientists is against positivism and notes that the physical sciences deal with objects that are outside people, whereas the social sciences deal with action and behaviour
generated from within the human mind. As such, the interrelationship between the investigator and what is investigated is impossible to separate. This debate resulted in the application of the phenomenological paradigm in the social sciences. Mangan et al. (2004) suggest that the positivist paradigm is a “top-down, outside-in” research approach and that the phenomenological paradigm is a “bottom-up, inside-out” research approach.

Table 3. Alternative terms for main research paradigms

<table>
<thead>
<tr>
<th>Positivist paradigm</th>
<th>Phenomenological paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative</td>
<td>Qualitative</td>
</tr>
<tr>
<td>Objectivist</td>
<td>Subjectivist</td>
</tr>
<tr>
<td>Scientific</td>
<td>Humanistic</td>
</tr>
<tr>
<td>Experimentalist</td>
<td>Interpretivist/hermeneutic</td>
</tr>
<tr>
<td>Traditionalist</td>
<td>Inductive -Abductive</td>
</tr>
<tr>
<td>Hypothetic deductive</td>
<td>Critical theory: generalisation by similarity</td>
</tr>
<tr>
<td>Explanation prediction and control</td>
<td>Constructivism</td>
</tr>
</tbody>
</table>

Source: Denzin & Lincoln (2000); Easterby-Smith et al., (1991); (2012); Gummersson (2000); Hussey and Hussey (1997).

Table 3 provides a variety of methodologies available that can be used in either paradigm. Several methodologies are listed, although the list is not complete. Research within decision-making in SCM and SCN in the context of EPM and CD are examples of a more positivist view relevant for obtaining an overview and for considering the broad structure of decisions, whereas phenomenology is useful for examining the conduct of decision-makers at the microlevel.

3.2 Qualitative research methodology

Because the realities of the socioeconomic context are dynamic, complex, and uncertain and when the observer is part of what is observed and driven by human interests, a more phenomenological paradigm is preferred to a qualitative methodology (Mangan et al., 2004). The main strength of qualitative research is its ability to study phenomena that are simply unavailable elsewhere (Silverman, 2011). One way to accomplish a qualitative methodology is to establish correlation between the context variables of the study (i.e., EPM and CD outlined in the previous chapter) as a context framework for collecting multifaceted empirical material, according to Bryman (2015, p. 374) and Denzin and Lincoln (2000, p. 3):

[…] qualitative research is concerned with identifying and comparing the qualities of empirical evidence […] qualitative research involves an interpretative, naturalistic approach to the world […] qualitative research studies things in their natural setting, attempting to make sense of, or to interpret, phenomena in terms of the meaning people bring to them
3 Methodology

When designing this study and its fieldwork, much of the inspiration was found in works labelled naturalistic or qualitative research methodologies (e.g., Denzin, and Lincoln, 2008; Guba and Lincoln, 1994; Silverman, 2011) that specifically describe the influence of the case study methodology (e.g., Stake, 1995; Yin, Mayers, Herricks, and Xia, 2002). In this sense, an “embedded case design” helped to maximize the conditions related to design quality, construct validity, and internal and external validity (Yin, et al., 2002, p.19). This thesis provides a description and analysis of the conditions for emergency planning to apply in the EPM and CD system in Sweden. Emergency planning integrates actors and their relations to meet in complex SCNs when complex emergencies threaten civil society in new ways. The description and analysis of the EPM system and planning structures in Sweden constitute the first case study in this thesis.

Following the first case results, an analysis, including a description of the involvement of vital CSA and their planning levels and roles in SCN in the Swedish EPM system, is developed in the subsequent case studies. This is followed by an examination of the military, voluntary, and commercial actors’ involvement in planning. Each actor’s relations in the EPM planning are considered a case. Following these cases, an analysis is presented of the coordination between EPM and CD relating civil-military relations to an overall safety and security strategy for Sweden. EPM and CD are considered the case context. The literature review in the previous chapter considers further studies that take a more coordinated approach. Coordination processes are important for gaining a better understanding of the SCN applicability in emergency planning (e.g., Boin and McConnell, 2007; Van Wassenhove, 2006).

Qualitative research is claimed to provide an open and multidimensional view of a research problem. The qualitative approach to a study of SCN, and AHA planning provides basis to analyse essential elements in the context of EPM and CD. For illustration, the concept of hermeneutics, whereby the understanding of a part can only be understood if it is related to the whole (Alvesson and Sköldberg, 2000), can be raised to relate the multidimensional approach to a research problem. Previous research on SCN has stated that this view is important for understanding complexity in structuring the modern societies. For example, in a study of civilian-military relations, Nielsen and Snider (2009, p. 75) emphasise the relevance of academic research that examines the dynamic complexity of “a system of generalisable principles and patterns” and the contextuality of the phenomenon. Another example is the work of Van Wassenhove and colleagues, who argue that if a multi-level approach is applied, research on EPM planning has the potential to achieve a more complete understanding of the phenomenon, and deeper knowledge has more value than broader knowledge (Hale and Moberg, 2005; Martinez et al., 2011; Van Wassenhove, 2006).
3.3 Research methods (approaches)

A wide variety of methods or approaches are available to researchers in the social sciences, leaning towards the phenomenology that is also evident in much business research. However, research in recent decades has moved towards the development of methods and approaches that provide a middle ground and some bridging between the two extreme viewpoints (Easterby-Smith et al., 1991).

According to Mangan et al. (2004), the use of both quantitative and qualitative methods is central to develop and advance research (e.g., in SCM). Easterby-Smith et al. (1991) promote the use of different methods in triangulated investigation in business research to triangulate on the true phenomenon, i.e. methodological triangulation. Methodological triangulation is suggested when, for example, “SCM research [...] begin[s] to approach the level of rigour required in other areas of business research, and to more fully recognise the phenomena proved in other research fields. Triangulation of research methods lends greater empirical support to the theory in question.” Such methodological triangulation can compensate for the flaws and leverage the strengths of the various available methodologies. Svensson (2001) offers a good illustration of such methodological triangulation in his study on the impact of outsourcing on inbound logistics flows. Table 4 presents these methods, although it should be noted that both lists are not in depth.

Table 4. Methods of positivism and phenomenological paradigms

<table>
<thead>
<tr>
<th>Positivist paradigm</th>
<th>Phenomenological paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-sectional studies</td>
<td>Action research</td>
</tr>
<tr>
<td>Experimental studies</td>
<td>Case studies/Embedded case studies</td>
</tr>
<tr>
<td>Longitudinal studies</td>
<td>Ethnography</td>
</tr>
<tr>
<td>Surveys</td>
<td>Construct elicitation</td>
</tr>
<tr>
<td>Models and simulation</td>
<td>Grounded theory</td>
</tr>
<tr>
<td></td>
<td>Hermeneutics</td>
</tr>
<tr>
<td></td>
<td>Field observations/Participative inquiry</td>
</tr>
</tbody>
</table>


3.3.1 Abductive approach

As discussed in the previous section (section 3.1), a phenomenological paradigm is a trend away from a positivistic view. Following Kovács and Spens (2005), it also applies when defining patterns of pure induction (to bring in observations of the real world) or deduction (to bring together theoretical knowledge). There is also an interplay between the two types of reasoning that affects the explanations of theory fit (to adapt theory into new context). The abductive approach (to lead away), on the other hand, stems from the concept that advances in science followed neither the pattern of pure deduction nor
the pattern of pure induction. Thus, adduction means “to bring in” and has been explained to mean “the adducing of particular examples to lead to a universal conclusion” (Kovács and Spens, 2005, p.136). The abductive approach, in turn, has characteristics of both induction and deduction (Alvesson and Sköldberg, 2000). Abduction is therefore suitable for this qualitative research as it enters in various diverse disciplines, each of which has developed the approach in its own way (e.g., business, network, management, organisation, political, military, humanitarian) to develop “new” knowledge (e.g., about EPM and CD). The inclusion in this thesis of notions of induction “to bring in” is based on multiple in-depth studies (e.g., the five embedded studies) and a span of time to enable “thick” description (e.g., studying the field over a period of ten years) (e.g., Geertz, 1973; Shenton, 2004; Kovacs and Spens, 2005). Although the literature has provided foundations for proposing further investigation, an examination phase is still required. Thus, a deductive approach is not appropriate for conclusive answers to the research questions of this thesis.

Figure 12 displays related aspects of several approaches (induction, deduction, theory fit and abduction) that are suitable for describing the observed real world that cannot be explained by existing theory.

Figure 12. Research approaches

Inspired by Kovács and Spens (2005)

Research iteratively “matches the theory” (theory fit) with evidence from the real world or “systematically combines” them (Dubois and Gadde, 2002b) to find workable explanations and to extend prior theory (Kovács and Spens, 2005). This thesis employs an abductive approach as previous studies on EPM and CD planning in developed countries have not fully operationalised the concept of this type of planning. Thus, clearly studied connections between management structures and planning strategies are limited. The concepts under examination are underdeveloped and currently lack measurement scales. In addition, the theories of EPM in the context of developed countries (e.g., humanitarian and civil society) lack empirical evidence and are limited and underdeveloped. The variety of actors, resources, activities, and geographies as well as time limitations do not justify an effective inductive
approach for this study. Field observations need to be compared with theoretical suggestions to serve as reasonably deductive conclusions. The humanitarian fields, political knowledge, organisations, and economics are examples of concepts that are diverse enough to accommodate both theory and empirical studies; therefore, an abductive approach was used to achieve the purpose of this thesis.

3.3.2 Pragmatic approach

A pragmatic approach has been an important inspiration for qualitative research in several fields (e.g., Hammersley, 2003). The pragmatic concept is defined by Glasgow (2013, p. 257) as approaches that “focus on matters of fact or practical affairs and are practical as opposed to idealistic.” In fact, there is a single, unique material world “out there” that exists independently of us as spectators. The pragmatist views of the world do not contradict this study’s truthfulness.

One further question is whether knowledge as we know it is created or found, which is different to ontological stances on reality as constructed or as found “out there.” If we apply the pragmatist idea of the “real” to knowledge, we might obtain a view of knowledge that is both realist and positivist. This makes knowledge context dependent, and one key contextual dimension is time. The truth about a phenomenon, and objective knowledge, might be out there, but what we perceive as “known” or “true” today might deserve a revision tomorrow. Just as some things might be known or true today but considered false and irrelevant in the future, what is known in some context might not be considered valid in other contexts. This view of the appearance of science has been discussed, for example, by Kuhn (1970), who draws on the ideas of, e.g., Popper (1992), as the nature of the paradigm shifts with scientific revolutions. According to Kuhn, scientific progress is continuous; thus, depending on time, we observe shifts in what is known and what we believed to be known.

This approach is therefore used to bring common sense to the complex matters of this thesis. However, based on an epistemological interpretation and ontological stances, knowledge is temporary is strongly influenced by the researcher’s perspective. Although knowledge is contextually temporary and researcher dependent, perceptions of the value of certain theories are built on this knowledge. As such, we still need some guidance on how to value theory (Eisenhardt and Graebner, 2007). For example, Eisenhardt (1989, p. 548) argues that good theory is “parsimonious, testable and logically coherent.” Thus, a suggestion is that good theory explains more with less and that a theoretical contribution therefore does not need to capture all aspects of the phenomenon (EPM and CD), which implies that theory will become excessively complex. Such claims might apply when building theory from case studies as a research strategy that involves using one or more cases to create
3 Methodology

theoretical constructs (e.g., Eisenhardt, 1989; Yin, et al., 2002). Although truth and reality are potentially “out there,” truth and reality are not necessarily motionless elements of the truth and reality that we consider. The author discusses credibility, confirmability, and dependability later in this chapter.

3.3.3 Embedded case study

A single or a few cases are often used by researchers as designs to delimit studies with the aims of understanding and interpreting a specific phenomenon. An “embedded case study, however, involves several units of analysis in one whole” (Yin, 2013, p. 43). The main reasons for this might involve the study’s complexity, which needs to be understood in relation to its context, such that understanding the field is the only way to obtain a clue about the general case. This thesis applies the case study approach (Stake, 1995; Yin, 2013).

Among the definitions of embedded case study, one is the following: “in an embedded case study, the unit of analysis is embedded within in the case. The time we spend on the one case may be long or short, but while we are so concentrated, we are engaged in one (multiple) case study” (Stake, 2000, p. 436). Eisenhardt (1989, p. 534) provides another definition: “[...] a research strategy which focuses on understanding the dynamics present within a single setting.” Yin’s (2013, p. 46) definition concerns studies that might contain more than a single case, which use a “multiple case design,” as variants within the same methodological framework – and no broad distinction is made between the so-called classic (i.e., single) case study and multiple case studies.

There are several ways of characterising case studies. For example, Stake (2000) suggests that an embedded case study can have different emphases by distinguishing between the intrinsic instrumental and the collective case study. The intrinsic instrumental case study is defined as a study in which the researcher seeks to understand the particular; thus, it is the case that is interesting. In an instrumental case study, the researcher is searching for the general by studying the particular; the case is of only secondary interest. A collective case study is an instrumental case study that includes multiple cases. Yin (2013) argues that multiple case studies have distinct advantages and disadvantages in comparison to a sole case. The evidence from multiple cases is often considered more compelling, and the overall study is therefore often regarded as more robust.

Here, the design is embedded case study research, in which in-depth understanding is suggested. Based on the motivation of describing and understanding each specific case, this is an intrinsic type (i.e., each case is interesting on its own). In the bounded case study here (specifically, five bounded research studies) the separate analyses conducted within each research study are integrated in the cross-case analysis. This approach follows Stake (2000, p. 437) with regard to embedded case studies. In this view, cases
may be “similar or dissimilar in which redundancy and variety are important. Understanding them will lead to better understanding, and perhaps better theorizing.” The matter of time, in this thesis, involves the adoption of a longitudinal design. A longitudinal study implies that the researcher has been in contact with the research setting over a longer period of time, often several years (Pettigrew, 1990). A key benefit of longitudinal research is that it allows a researcher to capture developments and dynamics (Saunders, Lewis, and Thornhill, 2009). Here, the nature of the phenomenon under study is also longitudinal. Since the study is a processual study, the design must specifically address EPM and eventually CD as it occurs over time. The span of time of the fieldwork varies (measured from the first to last interview) from a little less than one year to several years across the five research studies included in this thesis. Studying EPM longitudinally allows us to follow changes in the field and the evolution of EPM/CD processes over time. In addition, based on observations in several countries, changes to approaches and new activities in EPM can be captured.

3.3.4 Multiple case study unit of analysis

The EPM of Sweden involves the planning of essential elements (human resources, knowledge, processes, financial resources and management) and the coordination of actors in different SCNs to an AHA system. The work of Ragin and Becker (1992) explains the foundations for a multiple research case study. Therefore, to understand what a research case study is, two contradictions in how a case can be perceived must be considered: (a) whether the study is “embedded” in several empirical units or theoretical constructs and (b) whether these units or constructs are in turn understood as “holistic” or as one specific case. Thus, “a realist believes that there are cases out there that are given or empirically discoverable” (Ragin and Becker, 1992, p. 8). Further, Ragin and Becker continuously divide the conception of cases into either holistic or specific. In a constructivist view, “generic units are conventionally treated as cases, and case categories are neither found nor divided during the research. They exist in social system prior to research and the social interactions. Specific case categories, by contrast, emerge or are delineated in the core of the research itself” (Denzin and Lincoln, 2008, p. 345).

“Whether the research subject is a case or not might not be known until the empirical part of the project is completed” (Ragin and Becker, 1992, p. 8). According to Yin (2013, pp.42-43), an “embedded” case design is different from “holistic” case studies because it is used when the same case study may involve more than one unit of analysis. For example, even though a case study might be about a single organisation or a system, it is integrated within a context, and the embedded cases are therefore part of the overall case. Based on the philosophical stances that form the basis of this research, a view of what
defines a case is context dependent. In this thesis, the aim is to study the context, which is the safety and security of civil society in developed countries, and the case is EPM and CD planning in Sweden based on the AHA. EPM defines the case context. The embedded cases are single cases about the process of emergency planning and CD planning, the actors’ roles, and the different relations in SCNs for CI. This thesis contains five embedded research study cases of EPM as shown in Table 5.

**Unit of analysis**
An “embedded design...involves several units of analysis in one whole” (Yin, 2013, p. 43). The main reasons for this might involve the study’s complexity, which needs to be understood in relation to its context such that understanding the field is the only way to obtain a clue about the general case. This thesis applies the case study approach (Stake, 1995; Yin, 2013). A theoretical approach to EPM in Sweden emphasises how the planning is directed by SCN relations and implicitly considers how actors are involved in coordinated activities rather than in isolation (Tomasini and Van Wassenhove, 2009; ). The essence of the EPM and CD theoretical lens is a focus on EPM planning as the unit of analysis. The embedded research cases in this thesis are empirical units or objects in the sense that they intertwine planning elements, actors, and their relations. Based on the requirements at all levels, the fieldwork is grounded in meetings as well as field observations, workshops, written reports, and research studies and the agreements that have been reached. However, the study objects evolve as theoretical constructs in abductive arrangements to develop new knowledge when they are placed in a scientific context.

The planning process, as a theoretical concept, fits the criteria of boundedness developed by Stake (2000) as well as the other precursors in case study research developed by Yin (2013). The planning processes for specific actors’ capability create the boundaries in the five case studies, not a single actor (organisation) unit. The unit of analysis that forms the centre of each case is EPM. This implies both ends of boundedness, CSAs as the capability of emergency planning and the relations among actors in CD planning, which is an approach explained by Tomasini and Van Wassenhove (2009). Thus, for practical reasons, the embedded study cases are labelled based on the accurate capability required in planning, for which CSA’s specific involvement in EPM and CD are separate cases (see Table 6).
Table 5. Embedded studies and units of analysis

<table>
<thead>
<tr>
<th>Research study case</th>
<th>Time span</th>
<th>Unit of analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency preparedness planning in developed countries:</td>
<td>2015-2016</td>
<td>The EPM as it involves planning essentials and the coordination of actors in SCN to an AHA</td>
</tr>
<tr>
<td>the Swedish case</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The volunteer sector networks in emergency preparedness planning in developed countries</td>
<td>2016-2017</td>
<td>The EPM as it involves voluntary actors in the operational planning and coordination of SCNs</td>
</tr>
<tr>
<td>Managing the military’s involvement in emergency preparedness planning in developed countries</td>
<td>2016-2017</td>
<td>The EPM as it involves military actors in the operational planning and coordination of different SCNs</td>
</tr>
<tr>
<td>Managing commercial actors in strategic networks in emergency preparedness: A study of multiple networks from Sweden</td>
<td>2016-2017</td>
<td>The EPM as it involves commercial actors in strategic networks for operational planning of the many different SCN</td>
</tr>
<tr>
<td>EPM and CD: a strategic approach to safety and security in developed countries</td>
<td>2017-2018</td>
<td>The EPM and CD as involves all actors in the strategic planning for coordinating SCNs in an AHA</td>
</tr>
</tbody>
</table>

3.4 Research techniques

Some possible research techniques for the embedded case study suggest different data collection for independent and specific case studies. Eisenhardt (1989, p.545) recommends that case study research include several organised data collection techniques to cover the whole. In the embedded studies, the most important factor in the resulting design is not the number of cases but the quality and choice of empirical material (Easton, 2010; Yin, 2013). The embedded design view of Yin (2013) also has pitfalls. One major drawback is when a case study focuses only on the subject and fails to return to the larger unit of analysis. This point was made not so much to enable comparisons of EPM in other settings but to widen the empirical basis of the study and to obtain various, chiefly explanatory, examples of possible aspects. In accordance with Yin (2013), a case study protocol is an important way of increasing the reliability of the case study and provides guidance in moving the data collection from a sole case study that involves several embedded case studies (see Appendix 1).

3.4.1 Selecting the research study cases

The case study selection and the five embedded case studies should be considered a strategy to effectively retain the overall comprehensiveness of the complexity of the field while also considering the time to collect the data (Pettigrew 1990, p.276). Some important criteria were used as guiding principles in the case selection. Each case:
constitutes a research study derived from EPM fundamentals planned in the initial research proposal observed in Sweden;

could be studied through interviews, observations, workshops, meetings, and documents;

represents a research study of EPM in Sweden that is related to the different CSA capabilities in the AHA based on preparedness, planning elements, and diverse types of SCNs in the context of developed countries;

is considered an AHA plan and is related to CD planning for war;

adds to the empirical investigation and to the analysis several illustrative examples of possible aspects of the complexity of EPM in Sweden that, in some cases, can be generalised to apply in different contexts (other developed countries).

Credibility was critical to the availability of vital and sensitive information. Pettigrew (1990) claims that access to information is a key criterion for case selection and that it is more important in qualitative research to ensure quality and availability than any other sampling criteria. This project began in 2010 with a focus on the developments in humanitarian SCM and SCNs as part of a master’s thesis on civilian-military coordination in disaster operations. Although the master’s thesis was not primarily focused on developed countries, the examination of civil-military relations in Sweden allowed contacts with civilian and military organisations followed by valuable data sources in the US and Sweden.

In 2013, discussions started at the FMV and at Jonkoping International Business School (JIBS) about the author’s interest in continuing research for a comprehensive doctoral study on emergency preparedness management and eventually on civil defence planning. In 2014, Swedish EPM was initially introduced to the author at the Swedish Defence College (FHS). High-level courses on EPM aimed to increase the awareness and understanding of EPM among public, private, non-profit, and military actors in Sweden. This background partly constituted the boundaries for the Research Proposal (RP) in terms of the field, the research area, and the problem upon which the research would focus. The basic understanding of the increasing uncertainties in relation to developed countries influenced the focus on challenges in EPM in developed countries.

The rationale for developed countries is built on irregularities (among many other issues). For example, criticism of the UK government for initially slowing its work on crises management, attempting to limit the risks to civil society, the need for driving change particularly in the US, and obtaining access to new markets are extremely important given the relative importance of exports to the Canadian agri-food sector to secure food safety to Canadian society. Deficiencies in the Australian constitution, to which governmental actors are responsible for the enforcement of law, have led to the emergence
of different standards across the country. In Sweden, SCNs between producers, processors and retailers to enable credible assurances of CI (food, drinking water, healthcare) safety and quality have emerged as a private sector response to safety and are changing governing settings. Visits to Canada, Iceland, Finland and Poland provided new knowledge as the grounds for the case selection. After the research proposal was defended in spring 2015, five case studies embedded through SCNs were selected, and the EPM case of Sweden was represented. Table 6 presents a chronological display of the activities in process.

Table 6. Selecting case studies in time

<table>
<thead>
<tr>
<th>Year</th>
<th>Activity</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>Discussions at FMV and JIBS</td>
<td>Decision to go ahead-appointed tutors</td>
</tr>
<tr>
<td>2014</td>
<td>Research proposal (RP)</td>
<td>Area of research and time plan</td>
</tr>
<tr>
<td>2015</td>
<td>Case study 1</td>
<td>Case study 1 published</td>
</tr>
<tr>
<td>2016</td>
<td>Case study 2 and case study 3</td>
<td>Peer-reviewed and revised; study 3 published</td>
</tr>
<tr>
<td>2017</td>
<td>Case studies 4, 5 and kappa</td>
<td>Peer-reviewed, study 4 accepted, thesis to final seminar</td>
</tr>
<tr>
<td>2018</td>
<td>Final thesis</td>
<td>Final manuscript and dissertation</td>
</tr>
</tbody>
</table>

CD planning that involves military actors was also an important empirical boundary in the research design. This allowed understanding of the importance of the military process and culture, including the language, command structure, communication, history, and coordination and organisational structures relevant for this study. The Swedish military actors in the study represent organisations from different levels of the military and include headquarters, regional commands, the home guard representing local-level responses, the defence department, the FFO, and other military units across the country. The military actors are situated in headquarters in Stockholm and have relationships with several suppliers (e.g., FMV, FOI, FRA, FHS) situated around the country. In the embedded cases, contacts with Swedish military actors at all levels and capability areas were useful for gaining further understanding and access to empirical materials, meetings, workshops, field trips, and gossip.

Finally, while performing the case selection, cases were sought that could add in some way to the empirical investigation of the five areas that constitute the conceptualisation of EPM used throughout the thesis. The selection of all five embedded cases was not done at the same time; cases gradually emerged from a broadened empirical basis in various illustrative aspects of EPM challenges. This means that some form of “saturation” was involved in terms of overlapping answers to questions and finding empirical materials that had already been reviewed. Thus, additional cases would not add more value to the analysis. The term “saturation” is applied in empirical studies in which the collection of empirical data occurs at the same time as the analysis (Glaser and Strauss, 1967, pp. 61-65). Each of the five studies outlined in this thesis involves a type of CSA that constitutes what Glaser and Straus refer to as one
3 Methodology

category (group). In contrast to grounded theory, the number of categories is not a priority as the categories of the analysis were predetermined due to the nature of the conceptualisation in use. Each case adds explanatory examples of possible facets of EPM in the context of the developed country of Sweden for one or several CSA (organisations) in the conceptualisation.

3.4.2 Respondent choice

In the embedded case study design in this investigation, a serious decision concerned the level of analysis at which the embedded cases under study should be examined. In management research, the decision about the level of analysis is a major issue in terms of organisations as the management process can be reviewed as a two-step phenomenon with decision-making at both the individual and organisational levels (e.g., Gummesson, 1991, 2000). After the decision to study EPM was made, CSA were determined to be the specific organisations of the study. Therefore, the management specifically concerns this type of organisation. However, because decisions about organisational levels are made by individuals, the next step was to look for relevant and qualified respondents to contact. As the aim was to study planning elements and how the essential capabilities of CSA are integrated in SCNs to evolve EPM over time, the search for multiple respondents in each case was a long-lasting process. In addition, with the aim of obtaining a wide range of respondents at different levels and with different roles and capabilities in the EPM and CD plans, the respondents met the following criteria:

- are responsible for decisions regarding emergency supply planning and SCN capabilities for vital CI;
- have specialised skills and intend to be involved in EPM and CD planning for war;
- are involved in developing EPM and CD planning for war;
- develop national safety and security strategies;
- are in some way stakeholders in the system and play a role that affects the development of EPM and CD either directly or indirectly.

This division of respondents is similar to the division of roles in buying situations inspired by Carrington, Neville and Whitwell (2010); thus, the organisation as a whole is only a subgroup of the organisational actors involved. The same argument can be used based on the roles CSA play in EPM and CD planning. In qualitative research, in which trust is a critical characteristic of contacts, easy access to key respondents has been very helpful. The role of the key respondents was first to serve as the key respondents in the study who could provide an overview of EPM from a perspective that others might not have. In addition, as key respondents who had agreements with managers, operations personnel, developers, and influencers, they were
helpful in facilitating contact with other respondents and relevant networks. In each case, the intention was to arrange regular contacts with the key respondents and to check on EPM developments. For example, in the case of CD planning and the civil-military coordination in EPM, contacts with several key respondents at the governmental level were established.

In accordance with the study design, a key element was the development of a conceptualisation of EPM that enables the empirical data collected to be organised and structured. The structure of the empirical study is based on research (e.g., Quarantelli, 1985, 2000). Therefore, to design an interview protocol, the overarching aims were as follows:

- to examine the EPM system, its planning elements, and CSA relations in developed countries;
- to investigate EPM in terms of involving CSA in planning and response operations, specifically, the military, volunteers and commercial actors involved in the SCN;
- to explore the contexts in which agreements need to be adapted to provide effective EPM;
- to explore the development of key policies and instructions in EPM and, in turn, in CD planning for war;
- to analyse the outcomes of the AHA for EPM in developed countries and whether CD planning for war is a separate form of planning that does not fit the AHA to EPM.

This overarching protocol enabled similar types of descriptions and a unified structure for all five embedded cases in this thesis. EPM as a concept has been introduced by both the humanitarian literature and the network literature and was further developed in the supply chain network literature to study the structures in SCM. In the network literature, the scope was limited to operations management (including industrial networks, commercial networks, and related fields) and SCNs. The publications were also restricted to full papers in peer-reviewed journals and did not cover other texts such as books or book chapters.

### 3.4.3 Fieldwork and sources of information

The fieldwork for this thesis includes multiple empirical sources. Table 7 presents the data collection, in which multiple empirical sources were important to increase the validity of the study. To conduct a doctoral project in which extensive fieldwork was required, a natural component of the study was multiple sources of information. In the development of relationships with many actors, often outside the context of the study, it was sometimes difficult to obtain reliable insights. This was observed especially when the key actors responding to questions realised that they could influence the study’s output.
However, several types of information were able to help reduce the respondents’ bias (Silverman, 2011; Gubrium and Holstein, 2002).

When studying the several planning structures, CSA, and their relations with the EPM system, finding the truth in relation to time can be challenging. According to Pettigrew (1990, p. 271), “the choice of time series influences the perspective of the researcher.” The explicit intention in CD planning and in EPM execution in the fieldwork necessarily demanded various sources. One main reason is to provide the widest overview possible. Another explicit aim was to follow the changes in terms of policy, direction, and threats to civil society. For the EPM system, this aim was difficult to achieve because the threats developed in new and faster ways than what organisations could manage. As recognised by Pettigrew (1990), identifying when changes that negatively impact civil society begin and end might be tricky. Grasping developments in EPM demanded a significant amount of time. This was done using multiple empirical sources and by returning to the different embedded cases over time. Time is an element that need to be wisely managed to increase understanding of the limitations in EPM if AHA plans are required. The complexity of making strategic, operational and tactical plans involves the inclusion of many actors in CD planning; the variety of roles and demands when CSA are already involved in EPM; the importance of adapting management to the different relations among actors in an SCN; and the ethical dilemma when developed countries’ priorities are geared towards safeguarding CI (rather than saving lives). Table 7 displays the sources and amount of information in this thesis. For more detailed information, see Appendix 1 and Appendix 2.

Table 7. Research steps for the thesis

<table>
<thead>
<tr>
<th>Source</th>
<th>Research Proposal</th>
<th>Case 1</th>
<th>Case 2</th>
<th>Case 3</th>
<th>Case 4</th>
<th>Case 5</th>
<th>Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews</td>
<td>22</td>
<td>40</td>
<td>25</td>
<td>11</td>
<td>22</td>
<td>20</td>
<td>140</td>
</tr>
<tr>
<td>Secondary data</td>
<td>35</td>
<td>40</td>
<td>30</td>
<td>25</td>
<td>30</td>
<td>30</td>
<td>190</td>
</tr>
<tr>
<td>Field observations</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Workshops</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>Seminars</td>
<td>3</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>26</td>
</tr>
<tr>
<td>Conferences</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>12</td>
</tr>
</tbody>
</table>

3.4.4 Semi-structured interviews

Although semi-structured interviews (requiring a report on the interviewee and an assurance that the interviewee understands the aims of the project (Silverman, 2011, p. 110) were the core of the empirical material, field observations and workshops in connection with these observations were also important complements to collect the information for the study. Interviews, field observations, workshops, seminars, and conferences are complementary information sources. As interviews can provide depth, subtlety, and personal
feeling, to build a background understanding of the field of research, semi-structured interviews were a necessary part of the research process. In the pre-study research, it was possible to contact key stakeholders for the study and provide an initial interpretation of the material (Arnould and Wallendorf, 1994), which led to clarifications and adjustments. Field observations provide access to groups and processes, in which the researchers may be confronted with discrepancies between what people say in the interviews and casual conversations and what they actually do (Pettigrew, 1990, p. 277). The semi-structured interviews were used with sets of categorized questions in ranges from completely structured to completely unstructured interviews. Semi-structured “interviews do not attempt to monopolize the conversation, they neither fade into the background” (Silverman, 2011, p. 112). Following Yin (2013), the interview protocol was intended to be an instrument that increased the reliability of the information in each embedded case study. This structure is linked to the case study protocol in Appendix 1 (see section A1.3.) and helped to provide a more consistent emphasis on the major tasks when collecting the data.

3.4.5 Field observations

Despite the many methods for obtaining data, observational research has been described as the foundation for all research in the social sciences (e.g., Angrosino and Mays de Pérez, 2000; Silverman, 2011). In this thesis, observations are used to reinforce the interview method as the collection of empirical materials has limitations (Silverman, 2011) (for example, to provide understanding of the approaches of countries other than Sweden to emergency planning). The observation fields were unintended opportunity to visits to five different countries that became suitable components in the empirical background of the case studies. Detailed information on EPM approaches in different countries was provided by experts from those countries in different areas (e.g., military, public organisations, commercial actors, managers, politicians, and NGOs). The visits were organised by the FHS to recognise different approaches to public safety and security, to planning and to civilian-military coordination.

3.4.6 Workshops, seminars and conferences

Workshops, seminars and conferences are important data sources for case studies (Yin, 2013) as “listening means receiving information about what might be happening and can allow a researcher to effectively capture important elements for the study” (Yin, 2013, p.60). In workshops and seminars, it was possible to meet responsible representatives or experts in the EPM and CD fields. Contacts were established beforehand via mail or phone, and the experts explained the procedures and structure of the EPM. As a
result, invitations to seminars and workshops were relevant for this thesis. In Table 8, some of the most relevant seminars and workshops are presented as sources for understanding the EPM context. These were vital complements to the empirical material in the studies.

Table 8. Relevant workshops and seminars to the study

<table>
<thead>
<tr>
<th>Date</th>
<th>Workshops and Seminars</th>
<th>Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-10</td>
<td>Autumn conference on the county crisis response</td>
<td>Sweden</td>
</tr>
<tr>
<td>2013-11</td>
<td>Disaster in the world - is it about Sweden?</td>
<td>Sweden</td>
</tr>
<tr>
<td>2013-11</td>
<td>Comprehensive approach and logistics for crises</td>
<td>Sweden</td>
</tr>
<tr>
<td>2014-03</td>
<td>Ivory, trafficking, and terrorism</td>
<td>Sweden</td>
</tr>
<tr>
<td>2014-04</td>
<td>Sweden’s role in FN – on safety and security</td>
<td>Sweden</td>
</tr>
<tr>
<td>2014-04</td>
<td>Crisis Response and Disaster Resilience 2030</td>
<td>Sweden</td>
</tr>
<tr>
<td>2014-10</td>
<td>Emergency preparedness – civilian-military coordination</td>
<td>Sweden</td>
</tr>
<tr>
<td>2014-12</td>
<td>Complex Emergencies in Europe</td>
<td>Sweden</td>
</tr>
<tr>
<td>2015-10</td>
<td>Organised violence and consequences in society</td>
<td>Sweden</td>
</tr>
<tr>
<td>2015-11</td>
<td>Seminar: Information Security</td>
<td>Sweden</td>
</tr>
<tr>
<td>2016-11</td>
<td>Public-private procurement and preparedness</td>
<td>Finland</td>
</tr>
<tr>
<td>2016-11</td>
<td>Emergency preparedness and logistics planning</td>
<td>Sweden</td>
</tr>
<tr>
<td>2016-11</td>
<td>The Syrian Catastrophe, does it concern Sweden?</td>
<td>Sweden</td>
</tr>
<tr>
<td>2016-11</td>
<td>From international responses to local preparedness: research &amp; practice</td>
<td>Norge</td>
</tr>
<tr>
<td>2016-11</td>
<td>Humanitarian and military actors: a commercial provider’s perspective</td>
<td>Norge</td>
</tr>
<tr>
<td>2016-11</td>
<td>Civilian-military cooperation: The forest fire in Västmanland, Sweden 2014</td>
<td>Norge</td>
</tr>
<tr>
<td>2017-02</td>
<td>Roles and responsibilities in emergency preparedness</td>
<td>Sweden</td>
</tr>
<tr>
<td>2017-02</td>
<td>Risk analysis for planning and response in crisis preparedness</td>
<td>Sweden</td>
</tr>
<tr>
<td>2017-02</td>
<td>Scenarios as tools for emergency preparedness planning and development</td>
<td>Sweden</td>
</tr>
<tr>
<td>2017-02</td>
<td>EPM demands regarding socially important activities</td>
<td>Sweden</td>
</tr>
<tr>
<td>2017-05</td>
<td>SCM contexts when conducting research in disaster relief</td>
<td>Finland</td>
</tr>
<tr>
<td>2017-05</td>
<td>Collaboration and dialogue on civil defence planning (MSB)</td>
<td>Sweden</td>
</tr>
<tr>
<td>2017-11</td>
<td>Civil society and defence</td>
<td>Sweden</td>
</tr>
<tr>
<td>2018-02</td>
<td>Conditions for total defence 2.0 (FHS)</td>
<td>Sweden</td>
</tr>
<tr>
<td>2018-04</td>
<td>Society’s crisis preparedness and total defence 2017-2018 (FHS)</td>
<td>Sweden</td>
</tr>
</tbody>
</table>

3.4.7 Secondary data materials

Secondary data sets on EPM have been widely employed in the humanitarian and other social sciences. Much attention has been paid recently to whether EPM structures favour or hinder emergency planning in developed nations and whether such structures encourage planning efficiency and system resilience. A wide variety of documents from openly available data following Schwandt (2000) were collected in open channels from a mixed set of data sources, including personal documents and official documents from the state, private sources, and the mass media. These documents were printed, viewed visually or digitally, or provided in another retrievable format (e.g., articles, studies, reports, policy documents, internal documents, videos, webpages, and
presentations). According to Yin (2013, p. 103), these documents provide relevant secondary data for the case study. In this study, these documents are the basis of the case study approach, and a bibliography of these documents was created. Following Bryman (2008, p. 567) the criteria for evaluating the quality of the collected documents is elementary for confirming their authenticity, credibility, representativeness, and meaning. The relevance of these criteria varies with the type of document being evaluated. Following Bryman (2008), reliable criteria were created by examining the secondary data based on questions such as the following:

- Who produced the document?
- Why was the document produced?
- Is the material open and the meaning clear?
- Can elaboration on the events or accounts in the document?
- Are there different interpretations of these documents?

In connection with the semi-structured interviews, a substantial amount of secondary data was collected in the form of documents on the case area, reports, articles, books, policy documents, and other suggestions. Although documentation played a complementary role to the study (e.g., policy documents, regulatory letters, and budget propositions), these secondary materials are important for verifying data, people, levels, roles, policy directions, and decisions made at meetings when reporting the embedded cases. While conducting the fieldwork, roles are played. In an interpretive researcher role, contacting experts in the EPM and CD fields was important for identifying the interviewees. In an active participatory role in field observations, there were various countries (shown in Appendix 1) in which workshops, seminars, and conferences in different Nordic countries and in Poland were essential secondary data. In a consultative role, by being openly present and active in evaluating, commenting, and providing feedback, the understanding of EPM and CD planning was obtained for Sweden’s policy for safety and security.

3.5 Analysis procedure

The analysis was conducted in three phases. Phase 1 involved building theory and testing trustworthiness. Phase 2 involved application of theory, and phase 3 involved theory fit and theory building. Figure 13 below shows how the theoretical conceptions successively provided the basis for empirical descriptions through each of the embedded cases. With an explorative research purpose, the examination of the literature (in Study 1) progressed in order to build the frame of reference. In parallel, an interview study was conducted at several organisations in Sweden to define the research problem.
and provide answers to research question 1 (chapter 1). The frame of reference and the research problem definition then provided the necessary input for the descriptive phase 2 of the study. Based on the created empirical and theoretical frame, Studies 2, 3, and 4, were generated to answer research question 2. Case studies 1, 2, 3, and 4 raised questions and provided input for phase 3 that could be used to structure case study 5 and to answer research question 3.

Figure 13. Theoretical thought and empirical description

Theory that has been confirmed in the context to which it applies (i.e., operationalised), according to Lynham (2000), with inquiry in practical fields is not sufficient. A theory must also be threaded through the application phase (e.g., phase 1). The application of the theory to the problem, or phenomenon, in the world of practice is the practice component of the general theory-building research method. Application of the theory enables further study, inquiry, and understanding of the theory in action (e.g., phase 2). An important outcome of this application (e.g., phase 3) of theory building is that it enables the use of experience and learning from the context application of the theory to further inform, develop, and refine the theory. It is in the application of a theory that practice achieves trustworthiness and informs the usefulness and relevance of the theory for improved action and problem solving.

3.5.1 Application and understanding theory

The application of theory increased with greater understanding throughout the five embedded cases. The process by which each case developed is described based on the purpose of this thesis. The analysis was conducted in three phases:

- application of the AHA in EPM and CD planning for different cases;
- application of the CSA and their relations for different cases;
- application of the relationship between EPM and CD as strategies in each case and their roles in the different SCNs.
Each phase was conducted in each individual case and sometimes within overlapping processes. Next, the results of the analysis were collected in tables that included all the cases for the cross-case analysis. Inspired by Spiggle (1994, p.492), the analysis and interpretations were performed simultaneously to “generate conclusions, insights, meanings, patterns, themes, connections, conceptual frameworks, and theories [...]”. According to Spiggle (1994), the terms analysis and interpretation are often used interchangeably but are essentially two distinct processes in the process of qualitative research. The analysis is concerned with breaking down and dividing the material by dissecting, reducing, sorting, and reconstituting the data. Interpretation, on the other hand, describes the activity of making sense of the data for science and practice (Van de Ven, 2007; Schofield, 2002). Similarly, in ethnographic research, researchers commonly report that the analysis and interpretation began in the field but were ongoing processes (Kozinets, 2002). This research and the conclusions drawn on the study of the EPM system agree with Pettigrew (1990, p. 222) in that it would be naive of researchers to believe that data are a primary interpretation of reality.

The uncertain direction of the research process, in intention and structure, was similar to Alvesson and Sköldberg’s (2000, p.17) description of “abductive approach” (cf. inductive or deductive), by which explanations are developed based on observations and a critical view of earlier theories and empirical perspectives (see Figure 11). The procedure used for the analysis is based on the abductive logic of matching empirical findings with theory throughout the process (Dubois and Gadde, 2002a; Kovács and Spens, 2005). The findings from the theoretical frame of reference were the basis for matching the theory with the collected empirical materials, following what Dubois and Gadde (2002a, p.554) term the “systematic combination” approach. This analysis represents a set of suggestions for the situation under study. Interpretative techniques and structured discussions with experts in the field were fundamental for the analysis of the collected material and validating the results (Miles & Huberman, 1994). According to Bygballe and Jahre (2009), when systematically combining theory and collected data, attention must continuously be directed to the theoretical analysis.

3.5.2 Theory fit and theory building

Theory fit, and theory building are assembled in pattern coding. Following Miles and Huberman (1994, p. 56), “pattern coding” was the overall approach to this analysis. “Codes” function as tags or labels assigned to “descriptive or inferential information” to give them “units of meaning.”. Hereafter, coding is defined as dissecting the data meaningfully based on codes while “keeping the relationships with the parts intact.” Codes are essentially used to organise and structure the data collected, although the simple classification of data is
not sufficient for most research purposes (Miles and Huberman, 1994). Pattern finding can be very productive when the number of cases and/or the data overload is severe (McCammon et al. 2012). For example, Appendix 1 section A1.4 in the case study report shows the examined responses from the 140 semi-structured interviews. Research in emergency operations, according to Altay (2006), allows the construction of patterns from the triangulated data methods, which resulted in 45 major categories (section 2: major categories) that were then synthesised into three major themes (planning, actors and relations) and then into one key assertion (AHA).

Thus, “pattern coding” refers to explanatory codes used to identify emergent themes and was the analytical tool used (Miles and Huberman, 1994, p.69). The first level of coding within this technique is used to classify and summarise the data. Then, pattern coding is used to group these coded data into smaller groups or constructs. In other words, pattern coding can be compared to cluster analysis or factor analysis for examining quantitative data. For this study, the theoretical frame of reference presented in chapter 2 was used to define the codes (see Table 1), and the qualitative responses were collected based on this theoretical frame of reference. To preserve anonymity, the meanings of the responses and codes were used rather than precise words (Miles and Huberman, 1994).

An overall approach towards coding was to find emerging themes or patterns, but the approach differed for each paper. All research cases have different purposes and are based on different empirical material in a triangulated approach. It has been argued that triangulation is helpful for a deeper understanding of one issue or different aspects of an issue (Dingwall, 1997). It offers the researcher the opportunity to situate complementary or contrasting aspects with one another. In addition, the triangulation process facilitates reflection, which “occurs when one mode of thought is confronted by another” (Alvesson and Sköldberg, 2000, p. 247). Particularly with the vast empirical material collected, contrasting interpretations of the material (Alvesson, 2009; Arnould and Wallendorf, 1994) led to stimulating thoughts and adjustments.

3.6 Building theory and trustworthiness

Building theoretical concepts and their interrelationships are the elements that are common to most methodologies for theory building. According to Lynham (2000), theory provides clarity to complex phenomena for which the application of theory is of value because it fulfils one primary purpose. That purpose is to explain the meaning, nature, and challenges of a phenomenon that are often experienced but unexplained in the world in which we live so that we may use that knowledge and understanding to act in more knowledgeable and effective ways. Theory is defined as “a coherent
description, explanation and representation of observed or experienced phenomena” (Gioia and Pitre, 1990, p. 587). Building and applying theory requires two kinds of expertise: knowledge and experience. Knowledge is the beginning of the theoretical conception. This component is in the background of attention and contains the explanation of the phenomenon, issue, or problem that is the focus of the theory. The components of theory are data obtained through empirical description that are used to confirm or disconfirm and further refine and develop the existing theory and to enhance the utility of the theory in practice.

When assessing (self-assessing) trustworthiness in most sciences, the quality of the research is crucial. Miles and Huberman (1994) argue that the key issues with trustworthiness are the naturalness of the research, the consistency of the study over time and across other studies, whether the research follows a salient logic, the larger context of the findings, and the contribution of the study. Guba and Lincoln (1994) claim that the quality criteria are different for different philosophical views of social science. Miles and Huberman (1994, p. 277) offer criteria for constructivist research that they harmonise with more traditional views in research:

- Objectivity and confirmability;
- Reliability, dependability, and auditability;
- Internal validity, credibility, and authenticity;
- External validity, transferability, and fit.

Although these criteria often overlap, Shenton (2004) lists a number of requirements for ensuring trustworthiness. Based on these requirements, Table 9 presents some of the measures that were carried out to increase the trustworthiness of the study. Because the criteria presented by Shenton were most appealing, this thesis made use of these criteria. However, before collecting the empirical material, the examples explicated some assumptions of the expected findings based on my broad conception of the topic to avoid the selective use of material based on what was expected and to openly explicate the expectations as a kind of inspiration.
### Table 9. Measures to ensure case trustworthiness

<table>
<thead>
<tr>
<th>Quality criteria</th>
<th>Requirements</th>
<th>Measures to increase trustworthiness</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objectivity/Confirmability</strong></td>
<td>Capturing the reality of the cases</td>
<td>Using illustrative embedded cases&lt;br&gt;Checking for representative opinions&lt;br&gt;(Yin, 2002, p. 44)</td>
</tr>
<tr>
<td></td>
<td>Detailed methodological description</td>
<td>Documentation and detailed explanation of the different phases. Broad coverage – long span of time, many events, and many settings&lt;br&gt;(Yin, 2002, p. 86)</td>
</tr>
<tr>
<td></td>
<td>Predisposition</td>
<td>“Ongoing reflective commentary” on findings and theoretical assumptions&lt;br&gt;Following up on surprises and changes&lt;br&gt;(Shenton, 2004, p. 72)</td>
</tr>
<tr>
<td></td>
<td>Triangulation</td>
<td>Across data sources&lt;br&gt;Use of several different data sources&lt;br&gt;Reflection, “one mode of thought is confronted by another”&lt;br&gt;(Alvesson &amp; Sköldberg, 2000, p. 247).</td>
</tr>
<tr>
<td><strong>Reliability/Dependability/Auditability</strong></td>
<td>Research design and method</td>
<td>Case study with designed protocol&lt;br&gt;Data collection protocol based on theoretical background&lt;br&gt;Data analysis based on the literature&lt;br&gt;(Quarantelli, 1985, 2000).</td>
</tr>
<tr>
<td></td>
<td>Operational details and the empirical data collected</td>
<td>“Generating conclusions, insights, meanings, patterns, themes, connections, frameworks, and theories”&lt;br&gt;(Spiggle, 1994, p. 492)</td>
</tr>
<tr>
<td></td>
<td>Reflexive assessment of the case study</td>
<td>Reflexive assessment of the case study</td>
</tr>
<tr>
<td></td>
<td><strong>Internal validity/Credibility/Authenticity</strong></td>
<td>Adoption of well-established research methods</td>
</tr>
<tr>
<td></td>
<td>Developing early familiarity with the culture of cases</td>
<td>Interviews can provide depth, subtlety, and personal feeling. Field observations provide insights on processes and on what actors do&lt;br&gt;(Pettigrew, 1990, p. 277).</td>
</tr>
<tr>
<td></td>
<td>Triangulation</td>
<td>Use of different data sources&lt;br&gt;Triangulation offers complementary or contrasting aspects&lt;br&gt;(Alvesson &amp; Sköldberg, 2000, p. 247)</td>
</tr>
<tr>
<td></td>
<td>Tactics to ensure forthrightness of respondents</td>
<td>Workshops, seminars, and conferences “Listening means receiving information” on what might be going on to effectively ensure the forthrightness of important elements of the study&lt;br&gt;(Yin, 2002, p. 60)</td>
</tr>
<tr>
<td></td>
<td>Frequent debriefing meetings</td>
<td>Monthly supervision meetings with my supervisors: Prof. Susanne Hertz and Asst. Prof. Leif-Magnus Jensen. Continuous meetings at FMV direction. Presentation of studies at conferences; NOFOMA (Turku 2013, Denmark 2014, Lund 2017) PERL (Oslo 2016); FHS (Sweden 2015-2018) (Shenton, 2004, p. 67)</td>
</tr>
<tr>
<td><strong>External validity/Transferability/Fittingness</strong></td>
<td>To clearly indicate</td>
<td>Details about the number of cases, locations, number of data sources in the case, the role of respondents, details of documents used, and data collection interviews methods, proving rapportsn&lt;br&gt;(Silverman 2011)</td>
</tr>
<tr>
<td></td>
<td>Number of cases and their locations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Restrictions on types of data used</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of participants</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Extent and length of data collection. Time over which data were collected</td>
<td></td>
</tr>
</tbody>
</table>

Inspired by Shenton (2004)
3.7 Summary

This chapter presented a discussion of contemporary paradigms in positivism, critical theory and constructivism and offered an assortment of philosophical and methodological positions, techniques and analysis procedures for the thesis trustworthiness, illustrated in Figure 14.

Figure 14. The viewpoints in summary

The phenomenological paradigm reflected on the intent of producing social change in which organisations, policies and practices are embedded. A constructivist view allowed us to understand the social context and organisational cultures in which data were produced to reflect what the data meant to the study. A qualitative methodology was suitable to the study and investigation of actors and essential SCNs for advanced emergency planning towards changing demands. Different methods (approaches) were described to explain how the achievement of a comprehensive approach to deal with such changing demands links the EPM and CD in Sweden. Additionally, the selection process for the case studies and the represented organisations were described in more detail in Appendix 1 in the data collection protocol. To summarise the positions the author has taken, these do not reflect a positivistic paradigm in which the world is external, and objective and the focus is on facts. Rather, this study takes a position grounded in the phenomenological paradigm in which the world is socially constructed and relatively subjective. Understanding meanings is independently part of the spectators of the phenomenon. Multiple methods to establish different views of such phenomena small samples from field observations are described in appendix 2. Analysis phases directed to building theory offered criteria for assessing the study trustworthiness over time.
4. Empirical findings

This chapter presents a summary of the empirical findings on the management of emergency preparedness and civil defence planning in Sweden. The chapter provides findings related to different network structures in which the SCN offers structure to the emergency planning at different levels. Each of the initial research questions is addressed in relation to the included research studies. Additional findings from observations are then addressed to compare Sweden with other countries’ systems, such as those of Canada, Iceland, Finland, and Poland.

4.1 Swedish emergency preparedness

The first question of this research was how supply chain networks can be managed to support emergency preparedness and civil defence planning in Sweden when faced with complex emergencies and changing threats to civil society. This question is addressed in the first study of this thesis.

Study 1. Emergency preparedness planning in developed countries: the Swedish case. This study examines emergency preparedness planning, the actors and their resources in the system in Sweden. By considering the example of the Swedish system, it argues that three specific preparedness planning structures are involved in the EPM of developed countries. It offers an operational perspective on CSA’s capabilities in the settings of different types of SCN. The SCN presented structure to the several planning elements that are essential for response operations and for the various types of relations involved in building a resilient EPM system. It examines what is involved in emergency preparedness planning and what actors are related to another in the SCN. It examines the different planning perspectives at different levels of the EPM system, and it analyses the links between the AHA and the changing threats to civil society in developed countries. The findings of the study demonstrate the relevance of a broad empirical field that challenges several theoretical perspectives of the network. As such the SCN relation to EPM planning is still unproven for their use in the operational response to ongoing crises. The study provides supporting arguments for further research targeting the organized potential of SCN in offering key capabilities needed to further improve the emergency preparedness managing for meeting potential threats, complex emergencies and war. Changing and new threats are suggesting great challenges to developed countries. Here, efficiency involves the transition from tactical planning to operational planning (i.e. when SCNs are to be operationalised in emergency response).
4.2 Civil society actors of emergency planning

The second research question was how CSA can integrate their planning of SCNs over time based on their roles and their capability in emergency preparedness and civil defence. This question is addressed in Studies 2, 3 and study 4.

Study 2. The voluntary sector networks in emergency preparedness in developed countries: the case of Sweden. This study analyses the voluntary sector of civil society’s support for EPM in Sweden and, specifically, public and non-profit networks and the mechanisms that affect management efficiency. It studies the volunteer sector as an essential actor in civil society that can provide capabilities that can benefit the efficiency of EPM and CD planning. Thus, it investigates how non-profit actors’ capabilities can support EPM and CD. By adapting management, collaborative profit-non-profit efforts can be more efficiently combined with the system. It shows how and what volunteer resources support emergency planning and how their support is organised for military planning. It offers theoretical insights into how non-profit actors communicate with other actors, coordinate their resources in a civilian-military SCN, and efficiently manage their activities. The findings suggest that while volunteer capabilities in emergency planning are strategically important for EPM efficiency, there seems to be increasing a tendency to use volunteers in the EPM and CD networks. However, for preparedness planning to function efficiently, the SCN offers appropriate settings for the communication and coordination between public and non-profit actors. In planning these settings must be improved to the voluntary actor’s requirements when they are needed in the responding to emergency situations (e.g., by improving their use of technology, better defining their leadership, creating clear roles, and providing evaluations). Building on this understanding, more research is needed on the general applicability of the results in terms of volunteer efficiency in all types of environments. Here, responsiveness is applied in connection to actors’ relations in several different SCNs in their ability to remain responsive to collaborative planning.

Study 3. Managing military involvement in emergency preparedness in developed countries. This study analyses the SCN providing structural explanations to the EPM and CD planning. Preparedness planning involves one essential element in terms of the managers ability to arrange the civil-military relations to function when they are needed. Addressing civil-military relations in connection with the changing threats and expected new ways of responding to the complex emergencies and war in developed countries, the study pointed at several relational problems that will always arise under the response operations and that cannot be resolved in the planning. The study explores other ways in which civilian-military relations can be arranged in the
planning. The SCN structures can help resolve civil-military relations to avoid conflicts of communication, use of authority and in the coordination of the response to emergencies. It highlights the importance of training the communication and the exercise of authority and coordination between civilian and military actors. The findings from the study underline that civil-military relations are a meaningful resource in an overall approach to safety and security. For instance, when looking at the management of the Swedish civilian-military relations with regard to EPM, the study recognises that the implications for management are embedded in continuous policy changes throughout Swedish history, which create problems that cannot be foreseen during planning. This indicates that the integration of civil-military relations in planning is a long-standing and complex matter regarding the EPM and CD networks. Building on this understanding, the theoretical insights into the SCN confirm that managing civilian-military relations can ensure the availability and flexibility of the supply chain. This study does not aim to reflect on military planning capabilities considered in CD planning for war. Rather, it contributes to a better understanding of the essential capabilities that should be taken into consideration with regard to civil-military communication, the exercise of authority, and coordination when the military is requested to assist in response operations. Here, flexibility is a requirement for civil and military actors when integrating into the several types of SCNs to response operations.

Study 4. Managing strategic networks in emergency preparedness: a study of multiple networks in Sweden. This study analyses the management of strategic networks to address SCN frames to the efficiency of the emergency preparedness in developed countries. It explores and illustrates how strategic networks are interconnected and affect the efficiency of an SCN. Based on three Swedish SCNs, it examines public-private collaboration through a network that can be delimited within diverse types of nets. Dormant nets (to prepare for action) and active nets (to respond to emergencies) are strategic and can be managed. It analyses the types of agreements in which nets can be delimited and how they can be managed for the EPM and CD operational efficiency. It offers a theoretical understanding of the value that nets can create in an SCN based on strategic choices and the collaborative application of business arrangements, communication and decision-making. The study shows that strategic networks can be combined and delimited to adapt to changing demands. Furthermore, the study shows that public-private collaboration in delimited networks (nets) offers mutual efficiency benefits for the partners and to the system. One conclusion of the study is that such benefits are rarely appreciated by managers due to the actors’ differences and own interests. Another conclusion of the study involves the management challenges when engaging commercial actors in current EPM planning structures. Commercial actors are usually engaged as single organisations that often answer based on their own perspectives and opportunistic conduct. With
their own perspective and opportunistic conduct for single profits, this will be at the cost of other actors and might work against the overall SCN profitability. The study shows that there is a growing tendency to place higher demands on value creation in SCN. However, encouraging actors’ single perspectives and opportunistic conduct will affect the proper flows of goods, services and skills into response operations. The study suggests that such an understanding is important to strategic choices in planning and to fitting SCNs and changing demands. The results suggest that the use of networks and nets is strategic and has been increasingly emphasised by emergency preparedness managers. The findings also indicate that linking responsiveness and flexibility strategies with SCNs’ arrangements can be associated with profitable outcomes. This study argues for further exploration of the strategic use of the delimited networks among different business suppliers. Here, efficiency, responsiveness and flexibility are requirements to achieve system resilience. Resilience is proposed as the result of dynamic processes involving networks and nets, time demands, and the influences of external actors.

4.3 Actors’ relations and the AHA planning

The third research question was how an AHA planning can be improved to increase emergency preparedness and the civil defence system’s resilience. This research question is addressed in this study.

**Study 5. Emergency preparedness and civil defence planning: an all-hazards approach to safety and security in developed countries.** This study examines the aggregated role of CSA in an AHA planning for responding to the changing demands in developed countries. Based on the case of Sweden, the EPM and CD planning together offers a system for the response to the changing demands of safety and security. Changing demands on safety and security implies different strategies to meet antagonistic threats and the threat of war. By shedding light on the AHA to planning in Sweden, the results of Study 1 showed that CSA are part in different networks an essential part of building capabilities in SCN the planning of response operations. However, key actors such as commercial, military and voluntary actors are sometimes missing in the planning; consequently, they become inflexible regarding coordination, communication and the use of authority. To illustrate this, Study 5 examines the challenges in the Swedish system in integrating safety and security into a one-strategy approach to meet current trends of changing and complex threats and the threat of war. The study offers theoretical insights regarding strategic responsiveness to antagonistic threats and war. The findings of the study indicate that the AHA positively influences EPM and CD planning in different safety and security settings in developed countries. A comparison of Canada, Iceland, Finland, and Poland with Sweden shows that
these countries have realised that the AHA planning and the process of risk assessment are strategic to the SCN value. The study offers three strategic propositions for future research and an overall strategic planning approach that enables a responsive safety and security strategy. Through an integrated system, actors can coordinate, communicate and manage the EPM and CD planning in turbulent environments during peace and war.

Table 10 below presents a summary of the key findings from the individual studies in relation to the research questions.

### Table 10. Overview of case studies

<table>
<thead>
<tr>
<th>Cases</th>
<th>Case Study 1</th>
<th>Case Study 2</th>
<th>Case Study 3</th>
<th>Case Study 4</th>
<th>Case Study 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus</td>
<td>Emergency preparedness planning in developed countries: the Swedish case</td>
<td>Volunteer sector networks in emergency preparedness in developed countries: the case of Sweden</td>
<td>Managing the military's involvement in emergency preparedness in developed countries</td>
<td>Managing strategic networks in emergency preparedness: networks in Sweden</td>
<td>EPM and CD planning: an all hazards approach to safety and security in developed countries</td>
</tr>
<tr>
<td>Essential Elements</td>
<td>EPM Planning (tactical)</td>
<td>EPM-CD Planning (operational)</td>
<td>EPM-CD Planning (operational)</td>
<td>EPM-CD Planning (operational)</td>
<td>EPM-CD Planning (strategic)</td>
</tr>
<tr>
<td>SCN's and CI</td>
<td>Voluntary actors Coordination in SCNs Flexibility Communication</td>
<td>Military actors Coordination in SCNs Response Communication</td>
<td>Commercial actors' coordination in different SCNs Networks/Nets Responsiveness</td>
<td></td>
<td>AHA SCN's Safety and Security CS Resilience</td>
</tr>
<tr>
<td>Response and Operations</td>
<td>Efficiency</td>
<td>Efficiency</td>
<td>Efficiency</td>
<td>Efficiency</td>
<td>Efficiency</td>
</tr>
<tr>
<td>Purpose</td>
<td>Examination of EPM system and CSA relations in EPM planning in developed countries</td>
<td>Analyses of the volunteer sector and their support for EPM and CD planning in developed countries</td>
<td>Analysis of the military in SCNs, civilian-military relations in emergency operations in developed countries</td>
<td>Analysis of the commercial actors in the SCNs of EPM/CD, management of different types of networks in developed countries</td>
<td>Examination of AHA as strategic approach in EPM and CD planning for safety and security demands in developed countries</td>
</tr>
<tr>
<td>Considerations</td>
<td>Considers the AHA to organise a tactical level of planning elements, actors, their relations and SCN structures in EPM to ongoing crises</td>
<td>Discusses the volunteer sector as an essential operational capability in EPM and CD planning; management of volunteer actors' skills and resources</td>
<td>Recognises the military's capability at the operational level of EPM. The management of civilian-military relations and problems not foreseen during planning</td>
<td>Addresses commercial actors as operational component of strategic in EPM planning. The management of nets as a limited type of network in business relations</td>
<td>Addresses the role CSA in EPM and CD in the strategic level of planning: an AHA to respond in peace and war</td>
</tr>
<tr>
<td>Status</td>
<td>Published: JHLSCM 2016</td>
<td>Presented at NOFOMA Con. Major revision: Submitted to JCCM 2017</td>
<td>Published: JHLSCM 2017 Proposed at PERL con.</td>
<td>Accepted: JHLSCM 2018</td>
<td>Major revision: Submitted to IJDRR 2017</td>
</tr>
</tbody>
</table>
4.4 On the all-hazards approach in other countries

Although this thesis is about Sweden, comparison with other countries (Canada, Finland, Iceland, Poland) increases understanding of emergency preparedness management for meeting changed demands when dealing with new threats. Figure 15 schematically illustrates the distinct variables of the all-hazards approach (AHA): planning, actors, and relations (including emergency preparedness and civil defence). Exact precision regarding the border for coordinating different supply chain networks (SCNs) is not intended. For each observed country, organisations within EPM and CD are designated to be responsible for emergency planning.

Figure 15. All-hazards approach variables

In visits to Canada, Iceland, Finland, and Poland, valuable empirical material was collected to compare Sweden with other countries’ readiness. Some countries safety and security are based on historical reasons. Chappell (2010) notes that with Poland and Finland’s involvement in the Second World War, other countries’ safety and security was dependent on their membership in different organisations (e.g., the European Union (EU, 2014), the North Atlantic Treaty Organisation (NATO, 2003) or the Nordic Cooperation). There is also an assumed gap between developed and less developed countries’ readiness. In this section, the five developed countries are middle powers as they are part of and led global safety and security. These countries, by engaging in diplomacy, are part of common structures in the international system. In fact, they have embraced global safety and security issues as “niche” areas of their foreign policies, contrary to expectations of global security for
great powers such as the US and Russia. According to Behringer (2005), Gareth Evans, the former Australian Minister for Foreign Affairs and Trade (1988–96), argued that middle powers perform “niche diplomacy,” which “focuss[es] resources in specific areas best able to generate returns worth having, rather than trying to cover the field.”

The five countries in these observations are considered “middle powers” in diplomacy to protect international safety and security, which might imply other responsibilities in global safety and security. These empirical insights allowed wider understanding in this study. The term middle powers in diplomacy concerns “(the) tendency to provide multilateral solutions to international problems, (the) tendency to embrace compromise positions in international disputes, and (the) tendency to embrace notions of good international citizenship to guide [...] diplomacy” (Neack, 2000, p. 2). For example, Tunberger (2006) claims that developed countries, including Sweden, provided “more or less unsolicited advice” to the Baltic countries in the mid- to late 1980s. Only Sweden acted as a middle power in diplomacy between the US and Russia. Another similarity that is important for the insights in the case studies is that these five countries are classified as “developed countries” in the rankings provided by the OECD and in the analysis of EU countries by the World Bank (2017).

All data for Sweden are based on interviews with respondents on the Swedish system as primary data. Information on other countries’ systems is secondary data that was collected during the visits. Table 11, briefly illustrates each country’s emergency management specifics. It includes planning efficiency, actors’ flexibility, responsive relations, and the coordination of different SCNs. These specifics are connected to the countries’ EPM resilience goals. Further detailed information from the field observations is available in the appendix 2.
### Table 11. Overview of the observations

<table>
<thead>
<tr>
<th>Country &amp; Performance goals</th>
<th>Efficiency</th>
<th>Flexibility</th>
<th>Responsiveness</th>
<th>Resilience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AHA</td>
<td>Planning</td>
<td>Actors</td>
<td>Relations</td>
</tr>
<tr>
<td><strong>Sweden</strong></td>
<td>No AHA into the planning for meeting complex emergencies, new threats, or the threat of war</td>
<td>Emergency planning and war planning are designed in two forms: the EPM and the CD</td>
<td>Coordinated involvement concerns: public, commercial, and voluntary abilities. The military involvement is still ad hoc</td>
<td>Conditions for development of civil-military, public-private profit-non-profit relations are deficient</td>
</tr>
<tr>
<td><strong>Canada</strong></td>
<td>AHA is offered through an overarching legislative umbrella: The Emergency Management Act (EMA)</td>
<td>Emergency planning in partnership with defence planning, is the Canadian approach</td>
<td>A coordinated approach aims to integrate CSA in AHA planning by: Interdepartmental Risk Assessment Working Group (IRAWG)</td>
<td>Conditions for the collaborative public-private relations, civil-military and the relations with individuals, is legitimate by legislation within the country and across borders.</td>
</tr>
<tr>
<td><strong>Iceland</strong></td>
<td>No AHA sign as Iceland is an unarmed member of NATO and has little money for investing in national separate systems. In the Icelandic civil defence, all society is included</td>
<td>Emergency planning is legitimised by policies and strategies for temporary and longer-term hazards. Private sector is very important in Iceland’s emergency planning.</td>
<td>Actors in Iceland are coordinated in three levels: municipal, regional, and central. They comprise various stakeholders, including the government as well as the public and private sectors. Individuals are coordinated as an integrated support to the system</td>
<td>Conditions that allow mixing connections to the US and the EU market are vital. Iceland is not a member of the European Union but highly dependent on the relations with other countries</td>
</tr>
<tr>
<td><strong>Finland</strong></td>
<td>AHA has been approved by the Finnish presidency and is Finland’s approach that is enhanced for the security of vital supplies</td>
<td>Emergency planning focuses on CI and is divided into several supply and security sectors. Each sector has its own responsibility</td>
<td>Coordinated actors are deeply involved in the National Emergency Supply Agency (NESA). The civil-military coordination is a persistent planning approach. Coordination with Sweden is of priority</td>
<td>Conditions for Finland relations strengthening the EU policy towards Russia is urgent. With this motivation, the AHA describes vital relations to other countries</td>
</tr>
<tr>
<td><strong>Poland</strong></td>
<td>AHA is vital in the shifting Polish security and defence roles within, e.g., the European Security and Defence Policy (ESDP)</td>
<td>Emergency planning originates in the Polish safety and security policy. It covers the priorities of NATO and EU</td>
<td>Coordinated CSA include commercial actors, in for-profit arrangements; e.g., SMEs and large companies, regardless of industry or region, are part of the Polish emergency planning</td>
<td>Conditions for Poland when contributing to EU are based on the country’s political relations, e.g., Polish-US relations, NATO relations</td>
</tr>
</tbody>
</table>
4.5 Understanding readiness goals when using an all-Hazards approach to planning

The findings showed that the Swedish readiness and system is different from other countries. In Sweden, for example, the AHA planning is yet developed despite evidence of weakened safety and security readiness. The AHA is useful to identify patterns in which actors could transform their roles into aggregated relationships and to assume wider responsibilities in the protection of CI. One initial transformation, involves private (for-profit) actors when they seek to change indirect relationships into direct ones within emergency planning. An example would be a supplier by-passing an intermediary to improve the quality of his information concerning the end customer’s requirements. However, the problem with this kind of conduct is the decision to cut down the middle level (e.g., manufacturers or end customers’ attempts to deal directly rather than with an established third party (distributor or agency)). This pattern is an efficient rationalisation of the SCN channels. Other patterns relate to the combination of capabilities and the advantages of combining several actors’ scarce resources in one overall capability as the perception of threat is fragmented and impacts Swedish administrators’ perceptions of their share in the emergency planning. The combinations of capabilities lead to total integration in the SCN. Thus, if Sweden falls into a neglectful combination of capabilities in one system, the opportunity for the AHA fails to operationalise the planning and to improve safety and security readiness.

Swedish emergency planning involves actors and relations that are required to plan the response at various levels (i.e., strategic, operational, and tactical). However, planning is fragmented by different opinions among actors (i.e., when the military capability is required in planning, they do things differently as part of the SCN). While all four countries formally described emergency planning for the availability of essential elements, the Swedish system is still unable to motivate the involvement of commercial, military, and voluntary actors. However, there is also an awareness among managers and planners that commercial actors’ goals are not always compatible with the objectives of EPM (i.e., to create the capability to adapt to the demands considered by the complex SCNs). Even though two of the countries’ coordination (Canada and Finland) involves public-private and civil-military relations at several positions and levels in the emergency planning, these relations comprise the security of provision of critical capabilities and supplies through SCNs. Only Sweden involves two parallel planning arrangements (EPM and CD) as the general approach to safety and security. The findings provide understanding of other countries’ systems (Finland, Poland, Iceland, Canada) that have integrated all their actors (civil and military) in planning (e.g., Banerjee, 2016; Bailes 2014; Bureau, 2014; NESA, 2013; Ojanen and Vuohula, 2007; Bailes, and Gylfason, 2008; Department of Defence, 2005).
Table 12. Schematic illustration of the AHA characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Description</th>
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<tbody>
<tr>
<td>Planning efficiency</td>
<td>Countries that are funding diverse levels and different kinds of planning are funding services, products and skills that might not be required for the specific changeable demands. Hence, the major benefit of efficiency in reducing costs as the planning condition is not an ideal use of the EPM budgets.</td>
</tr>
<tr>
<td>Actors’ flexibility</td>
<td>It is unclear whether flexibility as prerequisite targets the actors’ readiness to respond and achieve reliable performances in EPM. However, for non-flexible agreements, this requirements for actors’ readiness might make it easier to reach the country’s EPM goals.</td>
</tr>
<tr>
<td>Relations’ responsiveness</td>
<td>In EPM, responsiveness is related to actors and their relations’ ability to reduce the delivery time required in response operations. It is unclear if delivery time could be reduced if supply chain disruptions appear because of supply chains’ inability to rapidly adapt to different settings at various levels.</td>
</tr>
<tr>
<td>SCN’s resilience</td>
<td>The resilience requirement in EPM is the result of organisational coordination to eliminate the fragmentation of SCN and inefficiency of planning. It is not clear where, when and how resilience is achieved but networks can help integrate different supply chains to adaptable different responses. If the effect of SCNs’ structures on planning needs to be improved, demands on the omstructuring of public services should grow the dependency and the interconnectedness of different SCN applied to CIs</td>
</tr>
</tbody>
</table>

Table 12 illustrates some expected goals in EPM when using the AHA. It comprises goals in which efficiency, flexibility, responsiveness and resilience are linked to planning, actors, relations and SCN coordination. The AHA is a way to increase the readiness trust of Sweden. In some countries, a mismatch between AHA planning and EPM demands has been observed. Sweden may also risk such a mismatch if the EPM demand and the planning do not fit the changing requirements of safety and security. In Sweden, an ongoing discussion involves whether it is efficient to keep military capabilities outside of emergency preparedness planning. This subject has been connected to the latest emergencies (migration flows, organised crime, cyber and terror attacks) and threats to Sweden. While the military capability and its operational management in EPM is remained debatable, the Sweden is, therefore, considering the development of civil-military relations in the recently established CD planning to meet the threat of war.

4.6 Summary

This chapter provided the empirical results of the thesis. In particular, it addressed the initial research question on the Swedish emergency preparedness planning system in Study 1. The second research question involved the actors’ involvement in operational planning combining SCN structures to different capabilities in Studies 2, 3, and 4. The third research question involved the networks in the AHA planning as the readiness strategic to the changing demands in Study 5. An overview of the studies in connection to the respective research questions is presented in Table 10. Relevant insights from field observations in several countries are outlined in Table 11 and discussed in relation to the Swedish system. Finally, Table 12 provided an illustration of different courses of action to AHA in the EPM.
5. Analysis and discussion

The purpose of this thesis is to examine the management of supply chain networks in emergency preparedness and civil defence planning in Sweden and to investigate a developed country’s readiness when faced with complex emergencies and changing threats to civil society. This chapter provides an analysis and discussion of the findings. Explicitly, each research question is addressed in relation to the findings from the five attached studies. The discussion and analysis are linked to the research questions and combined into an overall dimension for a comprehensive all-hazards approach.

5.1 The overall dimensions

To explore the current safety and security capability, key dimensions are important for understanding the whole when changes are required. Figure 16 provides an overview of the research dimensions discussed in connection to the theoretical foundations in Chapter 2. These dimensions are overviewed and provide the grounds for structuring this chapter. The figure comprises civil society, safety and security, the EPM and CD, the AHA, the planning levels, and the SCNs’ coordination to bridge the behaviour that may be described as the inner mechanisms that bind the SCN and actors together. From a different perspective, bridge behaviour represents a threat to CSA as they are dependent of these internal mechanisms and because these are possible regulators of and/or barrier to relations.

Figure 16. Overview of the overall dimensions
5.2 The role of civil society in peace

In the context of complex emergencies and changing threats, civil society is relevant for the study of emergency preparedness management in developed countries. Following Trägårdh (2007), the perception of civil society differs substantially by country. All types of relations among different actors involve capabilities that enable essential elements of planning. Civil, military, commercial, and voluntary actors provide essential elements in planning. These elements are mechanisms in the SCN. In building SCNs, their goals are highly strategic for the safety and security of developed countries. Thus, the civil society context in this thesis is equipped to respond in peace time.

A further way of understanding civil society suggested by Kaldor (2013) is that civil society is a component in a global context. This idea ties to prior research indicating that few studies examine civil society, which is no longer limited to national borders. Thus, civil society is associated with globalisation and the transnational character of threats ranging from environmental problems (nuclear accidents, acid rain), to health issues (AIDS, SARS), to transnational criminal organisations trafficking in drugs, sex, and arms, to growing immigration-cum-refugee crises, global terrorism, and war, all of which highlight the vulnerability of developed countries (Cohen, 2007; Kaldor, 2001b; Kaldor, 2003; Trägårdh, 2007).

Civil society is acknowledged as the provider of readiness and of responses to peace and war because the concept of civil society has always been linked to the notion of minimising violence in social relations. However, the more adapted term “response” from Kaldor (2013) does not imply that global civil society is the solution or alternative to war. In this sense, it is a way of addressing the problem of war by planning for imaginable solutions or changes in peace time. Similarly, by addressing the importance of the state and hence the relevance of civil society for CSA, the state plays a vital role in the development of safety and security strategies. The all-hazards approach, complex emergencies, changing threats and the threat of war differ in their justification and impact. Different countries have different approaches to the AHA, according to Cornall (2005). Ekwall (2009) notes that management, actors and relations are connected to global approaches as these are required to recognise and plan in relation to changing demands to meet new threats.

Canada is an example of a country that has recognised that its safety and security involves worldwide risks, geopolitical risks, and economic growth risks (e.g., harsh proposals about ending NAFTA imply market risks for Canada and Mexico). Canada must therefore identify, assess, and monitor such risks as a basis for effective EPM and CD and to foster the country’s economic growth. Iceland is another example of a self-sufficient country in terms of EPM, but it is dependent on international relations to implement an AHA for its safety and security strategies. These developments have made studies of developed countries relevant.
5.3 Sweden’s readiness in peace and war

Sweden’s readiness in peace and war is basically provided through EPM and recently re-established CD planning. However, readiness is an area that has not been studied in connection with the increased changes in safety and security. The existing emergency preparedness systems in these countries may no longer function at their ideal levels of readiness to meet the recent changes. The increased fragmentation of the EU, North American trade tensions, the Russia-NATO conflict, the South China Sea conflict, and the Gulf conflict lurk as geopolitical risks that emergency preparedness studies have not yet considered. With a fragile geopolitical environment, developed countries’ economic growth also implies risks to countries’ performance, expansion and recovery (Hildebrand et al., 2017). Developed countries’ performance capacity is thus inherent in the changes that impact global civil society’s safety and security. This was particularly evident in the examination of emergency preparedness planning in the case of Sweden (Study 1).

According to Ekwall (2009) and Cornall (2005, p. 28), antagonistic threats to developed countries have significant impacts on the ability of their actors to achieve the requirements for national safety and security. These requirements enable countries to build their capabilities for EPM and CD planning. In this sense, national security and public policy are performative structures. This means that developed countries’ reinforcement of the AHA can help to ensure consistent and coordinated responses to complex emergencies, antagonistic threats, and war. The AHA can also help to regulate the effects on the safety and security of other countries (Study 5). In the same way, SCN structures can help planning into coordinated activities relating to the CI particularities and adapted to the networks’ choices (Kleindorfer and Saad, 2005).

This understanding of developed countries’ performance with regard to safety and security strategies requires cooperative capabilities of the actors within EPM. As suggested by Kaldor (2003), the conceptualisation of civil society as a capability through which social contracts between individuals and the political hubs of power are recognised and reproduced is based on political authority. In relation to such political authority, policy makers in EPM and CD planning can specify the way in which public leaders are required to manage complex emergencies and to maintain political, legal, and moral order. Building on Trägårdh (2007), Sweden is consensual, with a national self-understanding as a country with many associations and a vital civil society. All sectors are organised in similar ways. In this sense, the Swedish developments have led to a larger political space for CSA to plan and respond when they are required to meet threats (Salamon et al., 1999).

Civil society actors are generally organisations involved with EPM and CD planning in many ways. The military, volunteers, commercial actors, the media, NGOs, and governmental organisations are CSA associated with the organisation of civil society (i.e., this thesis only concerns organisations, not individuals).
individuals). According to Kaldor (2003), the vague focus on individuals is a limitation of democracy. Following Kaldor, individual contributions in response to war or threats thereof will always represent a limitation of democracy. The globalisation perspective offers the possibility to overcome that limitation and at the same time favours the global extension of democracy. In practice, however, globalisation involves increased discrimination and insecurity and new forms of violence. Therefore, this thesis focuses on the strategic ties that bind civil society actors (including the military) together in emergency preparedness and civil defence. That is, while strategic ties in peace bind military support functions to civilian tasks through planning and training, these strategic ties in war include the military force. Thus, avoiding a focus on the differences between the military and civil society is essential to the study of EPM and CD as interrelated systems in the AHA to planning in developed countries. This study suggests that changing patterns of relationships as in civil-military coordination is not an easy task of strategic planning. In SCNs settings, civil and military actors can change their positions and acquire more control over their involvement. Thus, the central concept here is one of balance in the political sense, which is a key issue for EPM and CD planning (Alexander, 2005; Van Wassenhove, 2006).

5.4 Managing the all-hazards approach

Managing an AHA suggests interaction conditions and patterns of interplay for civil society readiness. CSA were observed in groups comprising civil, military, public, private and voluntary network structures. Relationships were positively or negatively connected depending on whether the structures involved complementary or competing capabilities. Solutions suggest that a mixed assembly in planning involves a combination of actors’ capabilities within different types of networks as a strategic part of EPM and CD. The AHA provides visible mechanisms to combine essential capabilities through SCNs frames and to effectively adapt to the changing demands. However, it is interesting to speculate in the case of Sweden on how connected relations within the EPM system might have affected another actors’ involvement (i.e., if separate CD planning had not been created). This study suggests that the effect may have been in the same direction but possibly less extreme. For example, rather than being ended, relationships might have been maintained and developed but subject to explicit attention and lower intensity.

The AHA led to evolving insights that are connected to the examination of the Swedish system combined with observations in Canada, Iceland, Finland, and Poland. This understanding contributes to explaining the AHA in a different sort of management based on the demands imposed by complex emergencies and changing threats to civil society, including the threat of war. This overview is presented in the model in Figure 17 below.
From an AHA perspective, the variables that are part of EPM and CD in terms of planning are several different actors that are members in SCNs to regulate access to opportunities (e.g., commercial agreements). Because elements are essential parts of planning, actors and their relations are capabilities in emergency planning. For example, the resources that form the basis of joint CSN activity, if inappropriate to the market in question, might challenge the balance between the activities required in emergency response. Another reason for paying attention to the actors’ relations arises because there is no effective way for one actor to control the activities of the other actors. That is, emergency planning can only become operational if all actors and their resources are providers of elements in the planning. Thus, this study suggests that the elements in planning are associated with the efficiency of response operations; they either lead to total integration through actors’ flexibility or they fail to operationalise the planning if responsiveness in relations become too costly (Study 1).

The second set of variables emerges by securing the flexibility of actors in responsiveness relations to the SCN’s capability. SCN capability refers to the mechanisms behind strategy, coordination, and mitigation. In this sense, operationalisation capability in planning is urgent to develop and maintain efficient supply chain solutions. It typically involves complex interactions among people, materials, and money. Actors and their relations in the SCN create opportunities and capabilities that are different from the structures that are intended to reduce costs and lead times. Viewing these relations from an
economic perspective, strategic networks echo a shift from individual to coordinated relations in terms of infrastructure, collaboration, and the efficiency of mechanisms. Network structures therefore can be supported by strong strategies that allow the supply chain to operate efficiently (Study 4). The underlying logic for adopting a strategy is to apply a combination of agreements and policy to obtain access to critical resources to effectively manage major threats related to the complexity of developed countries.

Combining these two sets of variables, the EPM and CD mechanisms allow the structures of SCN to integrate various levels of aggregation. In the view of Axelsson and Easton (2016), these structures are the relational, the system and the network. When the EPM and CD systems are linked to planning, the actors’ relations are connected to different networks at various levels to distinguish the different requirements in the changing demands. The variables emerge from actors’ different perspectives on their involvement in emergency planning. Thus, each notion contributes to an understanding of capability in the framework of an SCN. The network choices constitute a major strategic decision in supply chain design. According to Tomasini and Van Wassenhove (2009), in business agreements, however, it may be unclear whether the demands are deliberate or are an emerging strategy to increase the efficiency of emergency planning. Certain aspects of networks as mechanisms allow relations between many types of organisations and are used in situations of market uncertainty. Specifically, network management can be applied to minor or major shares of emergency operations in the supply chain to create flexibility. In intentionally delimited network forms, these are called nets (Möller and Rajala, 2007). Applying nets in EPM and CD planning could be a way to structure and increase business activity and social value in operations linked to worldwide risks, geopolitical risks, and economic growth risks. As activities are performed by the actors included in the nets, different types of nets (i.e., current, renewal, and new nets) can be managed to address the relations and diplomatic structures in the international system that are disturbed. Thus, successful agreements should follow these nets with regard to potential market impacts in developed countries, as shown by the observations in Canada, Finland, Iceland, Poland, and Sweden.

In the Swedish EPM and CD planning, relations are understood as strategic to responsiveness meeting changing demands. In this logic, the Swedish system is challenged to integrate its safety and security into a one-strategy approach to current trends (Study 5). This form of strategy can occur based on different SCN structures when securing Sweden’s CI against worldwide risks. The complications in civilian-military relations that arise in the field of operations are not anticipated during emergency planning (Study 3). Some concepts of emergency preparedness sectors and planning that are

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10 Nets are value systems that increase the efficiency of commercial activities in networks. “Nets” are intentionally delimited networks that can be managed (Möller and Rajala, 2007, p. 898). There are several types of nets: current, renewal, and new nets.
fundamental to the understanding of EPM and CD’s underlying mechanisms in building safety and security strategies are planning, actors and their relations. This will be discussed in connection to the RQs below.

5.5 Analysing the Swedish system

In this section, following the structure in the previous sections of this chapter, the results of the dimensions analysis are discussed to create common planning designs among the five embedded study cases. The five embedded cases on the Swedish EPM and CD planning, corresponding to the initial RQs (see section 1.9), comprise the planning elements, coordination structures, and AHA mechanisms. These areas are separate from areas in the context that are analysed to establish common SCN designs to the planning for responding to the Swedish changing demands. Within the five embedded case studies, planning elements and planning operationalisation involves actors, relations, and activities as part of different types of SCNs. These areas are fundamental for the way the capability of civil society needs to be organised. Thus, the following subsections discuss planning and how SCNs can help to structure (related to RQ1); actors and the relations (related to RQ2); to and all-hazards approach planning (related to RQ3).

Figure 18 provides a schematic overview of how the components of the thesis are connected to the RQs and the embedded research studies.

![Figure 18. Overview of findings](image)

Analysis and discussions of EPM and CD planning and the way actors and relations are managed when coordinating different SCNs are essential mechanisms in the Swedish system to improve the preparedness planning. Inspired by Drezner (2011), this chapter brings together different types of planning in an effort to highlight what lies between the tactical, operational and strategic levels. Different planning levels are aspects of civil society
capability that cannot be discussed separately. For example, Boin and McConnell (2007) claim that emergency preparedness and civil defence need to involve civil-military relations that are adapted to help safeguard countries’ CIs.

Emergency preparedness is a system associated with civil society’s readiness and is an inherent part of global safety and security. This thesis builds on examinations of the Swedish EPM system. In this system, the CD planning is related to the planning for war. When examining these systems within the AHA, the readiness of Swedish civil society to meet all types of threats and war requires further discussion. Understanding these essential elements of planning is a prerequisite for increasing the civil society’s readiness, and these elements are required in the response to all types of emergencies and threats. The elements of planning must also be in place for planning to become operational and to increase response efficiency (Study 1). The actors’ flexibility and responsive relations are mechanisms provided by different networks, and by the mechanisms of SCNs when they are delimited to safeguard CI. Due to increased global changes, the mechanism of SCNs are challenged to provide capability. According to Ansell et al. (2010), SCNs are useful because they allow for actors’ coordination providing planning with appropriated structures. However, with increased complexity and market uncertainty, the SCN might not be able to guarantee with certainty the planning conditions to involve many actors and different relations (Studies 2, 3, 4). In addition, unwillingness to include the AHA planning using the structures of aggregated SCNs can reduce efficiency, flexibility and responsiveness and thereby hindering requirements from the response operations (Study 5).

The challenges to the Swedish EPM and CD planning include safeguarding essential elements, managing civilian-military relations in different SCNs arrangements, and managing commercial agreements to change and/or cancel or postpone future agreements. The specificity of agreements is also a sort of uncertainty to the planning. Any relations not identified, analysed and managed in commercial agreements are considered as strategic uncertainties to the planning that may in turn affect the overall CS capability when the AHA is used as the logic for the safety and security (Studies 3-4). In addition to Swedish civilian-military relations in EPM and CD planning, policy changes, vague organisation, and strategic uncertainties are implications in Sweden’s policy history (Study 3). Since there is no way of knowing which strategy will work to meet changing threats or will work better than the current safety and security solutions, the EPM and CD planning are yet unresolved solutions towards strategic planning. This inherent uncertainty regarding the potential AHA will, in turn, suggest shortages in the management and the achievement of the preparedness system’s resilience.
5.5.1 The planning (RQ1)

How can supply chain networks be managed to support emergency preparedness and civil defence planning in Sweden when faced with complex emergencies and changing threats to civil society?

Addressing the first research question (RQ1), the results are fundamental for the examination of tactical planning to increase the efficiency of civil society in developed countries. Study 1 showed that emergency planning at a tactical level provides elements that are essential for operationalisation. These essential elements of planning include CSA as well as different relations and several settings of SCNs at various levels (e.g., national, regional, and local). The interactions between plans at the national, regional, and local levels were studied from the complementary perspectives of civil society, network, and humanitarian theories. For an illustration, as shown in Study 1, the preparedness system addresses essential elements in which CSA are coordinated. Resources and activities are planned to address ongoing crises. In the study, it was recognised that volunteers, the military, and commercial actors are all important to emergency planning. Planning constitutes a CI for temporary responses (in SCN functions) in ongoing crises and war.

The management of relations among actors is an inherent element in an SCN’s capability to be operationalised in response operations. Study 4 showed that strategic networks are relevant not only to EPM and CD planning but also to response operations’ efficiency. In this regard, there is a growing tendency to place higher demands on an SCN to make strategic safety and security choices. Furthermore, Study 4 (when examining arrangements in the healthcare, food, and transportation SCNs) revealed that emergency managers who have a more collaborative attitude towards communication and decision-making are more efficient when taking roles in an SCN (between public-private actors). This perspective was predicted by Möller and Svahn (2003) in their application of nets as semi-finished plans waiting for instructions from government policies.

Emergency preparedness planning is concerned with essential elements. An example is that when building different types of SCN, it needs to target the military, volunteers, and commercial actors to develop and reform EPM planning. However, this planning requires CD planning for war (i.e., the entire threat scale). For example, when demonstrating key functions and the ability to shift to temporary networks in response to ongoing crises, including war, essential elements mediate the resources and procedures in planning. Human resources, knowledge management, logistics, financial resources, and the community cannot be obtained without planning and management, as Van Wassenhove (2006) illustrates with his example of the key elements that must be in place to produce effective results. For example, CSA’s relations with the military need to be coordinated and managed in the plan. Managing these interfaces between actors and their resources in temporary networks is
vital to promoting new combinations of relations and skills (Jahre, Jensen, and Listou, 2009).

Study 1 focuses on how the Swedish CSA, in particular, are required to develop AHA structures and how plan management can allow actors to transition from permanent (planning) to temporary networks (response). Addressing the lack of consensus with such planning in EPM and linking CD planning to war as in Study 1 is carried out in Studies 2, 3, and 4. A problem in the Swedish system concerns adapting SCNs to potential threats as they may still need to target and manage other actors (i.e., the military, volunteers and commercial actors). Study 1 showed that in a reformed system, all actors should be able to coordinate their SCN’s capacity for civil defence to ensure key functions in long-term holistic planning. However, it remains uncertain who will be responsible for the SCN coordination. In this logic, commercial actors and industry are considered the key pillars in the SCN of the Swedish AHA system. Therefore, their coordination logically falls to the responsible public actors (e.g., MSB, 2009). Study 4 showed that combining public-private partnerships and ensuring the supply of vital goods and services remains a challenge. Thus, it seems realistic to conclude that on its own, the current EPM system has shown deficiencies in its capacity to fulfil planning demands in times of peace and in ongoing crises.

Study 1 and Study 5 showed that in the Swedish EPM and in the CD planning, there are managerial difficulties that hinder the development of planning processes. This is partly because of a lack of a common threat profile. This fragmentation of the threat profile and dissolution of the authority of governance, as well as the focus on economic efficiency, allow private actors to carry out functions of governance on multiple levels (Cohen, 2007). However, when key capabilities remain outside of preparedness planning, (the military, and volunteer resources), business actors will independently find an opportunistic involvement in the Swedish system. In this sense, Study 5 revealed that in Sweden, there is a tripartite order in strategy (i.e., civilian, military, and commercial). The emphasis on how these strategic properties can develop and fit into AHA planning was fundamental in Studies 4 and 5. The emphasised notion of safety and security is therefore considered fundamental to planning in terms of SCN efficiency. According to Sullivan (2003), Lindell (2013), and Van Wassenhove and Pedraza Martinez (2012), SCN efficiency has consequences for emergency planning in terms of coordination, cooperation, preparedness, reconstruction, responsiveness, and management. However, when it is mobilising resources for temporary arrangements, Sweden’s preparedness planning was shown to be a vulnerable CI. It is neither effective nor efficient in its response to current demands (Study 2). This result was expected as organisations were found to be vulnerable and often to compete for the same resources within permanent structures. Organisations are tailoring individual solutions to each hazard, which is similar to the case of CD planning for war (Study 5). Recognising the
lack of Swedish contingency planning, Study 1 and Study 4 suggested that managing commercial public-private actors in dormant, new, and renewal relations are important for the resilience of an emergency preparedness system. In this sense, commercial agreements are required to support such relations as planning for war in peacetime. Furthermore, Study 5 showed that in CD planning, military actors may need to abandon the command and control approach to CD planning in favour of adaptive learning through collaboration and coordination with the relevant CSA.

Consequently, it is only by adjusting the emergency preparedness planning requirements of human resources, knowledge management, operations, financial resources, and the community that the efficiency of emergency planning in developed countries can be increased (Study 1). The examples showed that these planning requirements need to be considered based on an AHA and coordinated and adapted in the SCN to contemporary threats for such plans to be operational (e.g., Ekwall, 2009; Kisangani and Pickring, 2007; McConnell and Drennan, 2006a). The structure of plans and the types of threats and emergencies will determine what essential elements and actors are required for the emergency plan. Considering an efficient planning structure of essential elements, it is not surprising that the actors participating in preparedness planning have found coordination to be challenging. Some of the resources and capabilities remain elements of plans that require a good structure (Study 1). Actors have found it difficult to develop their contingency planning processes due to a lack of a common threat profile and key capabilities that remain outside preparedness plans (Studies 2, 3, 4). Without these capabilities, military, business, and volunteer actors cannot efficiently meet the expectations of the Swedish system’s resilience (Study 5).

5.5.2 Actors and relations (RQ2)

How can CSA integrate their planning of SCNs over time based on their roles and their capability in emergency preparedness and civil defence?

To provide an answer to the second research question (RQ2), Studies 2, 3, and 4 are concerned with the analysis of CSA’s involvement and their relations in civil and military operational planning over time. This is based on the roles CSA play and on the levels of civil and military planning in which they are engaged. As shown in Study 2, the volunteer sector engages non-profit capabilities in planning, which has been shown to be essential to EPM system efficiency. This efficiency is reflected in the use of volunteer engagements at the regional and local levels in civilian and military structures. Furthermore, Study 3 showed that military actors’ involvement is an essential capability in planning, primarily for meeting the threat of war. Study 4 discussed how commercial actors create value because they provide access to commercial market contributions as resources in their own value-creation activities. Value
creation therefore appears to be a consequence of collaboration in the SCN. This would constitute public-private collaboration.

When examining civil society’s participation more deeply in EPM/CD, CSA are not only part of EPM and CD planning but also play a broader role in civil society’s socioeconomic development (Clayton et al., 2000). According to Kovács and Spens (2008), CSA are involved in an SCN to capture service providers, emergency suppliers, donors, and aid agencies. CSA are considered strategic elements in planning because they can pressure governmental decision-makers for (or against) EPM and CD planning (Kaldor, 2003). The AHA to planning requires a combination of public, private, non-profit, and military actor capabilities as essential elements to ensure the supply of vital goods and services in times of peace, in ongoing crises, and in war. These essential elements provided by actors in civil society play important roles at different levels in different areas (Donaldson and Preston, 1995; Kaldor, 2013; Kovács and Spens, 2008) (Study 1). Thus, the AHA is recognised as a different preparedness plan for the challenges in developed nations because it allows for military, commercial, and volunteer involvement in EPM/CD planning.

About military involvement in planning
Alexander (2002), Seipel and Heaslip (2014), and Nielsen and Snider (2009) claim that the involvement of military actors in humanitarian operations best occurs when civil order is threatened and when planning for war is needed (i.e. when other capabilities are demanded). Study 3 showed that civil-military relations are required for the different performance of EPM and CD. The findings from the study showed that the management of civilian-military relations as a meaningful resource can be associated with different levels of performance in an overall safety and security strategy. Planning for emergency supplies in which civilian and military actors’ coordination is essential can help to ensure the availability, service level, and efficiency of responses to complex emergencies. Civil-military relations that are governed by a chain of command or control hierarchies do not necessarily suggest or lead to better coordination because the management and communication problems between these actors are not a high priority in EPM/CD. Building on civilian-military relations, Nielsen and Snider (2009) maintain that civilian-military tensions exist and are structural in legislation governing governmental actors (e.g., departments of defence) when explaining the tensions that stem from changes in security conditions. Such tensions are exposed in terms of communication, the exercise of authority, and civilian-military coordination during emergency operations.

According to Nielsen and Snider (2009), the management of civilian-military tensions in emergency operations should be a high priority among policymakers on both sides. This study aims to shed light on the system rather than on single organisations. The intent is to contribute to the understanding of civilian-military relations in EPM/CD. A suitable method for managing
civilian-military problems has not yet been associated with civilian and military authorities’ capability to prepare for and respond to threats. As a result, in joint activities, military actors are not fully stable when engaging in EPM, nor are civil actors in the CD. Consequently, solutions to these problems will not automatically arise from emergency planning because more problems will inevitably arise. Thus, in EPM, the management of actors’ activities cannot be resolved solely by focusing on civilian actors’ challenges but must be resolved by also focusing on support for military actors because they are often required to respond to complex emergencies. Rietjens et al. (2007) argue that the purposes of civil-military relations are strategic, operational, and tactical. In planning, their capabilities are not necessary to provide humanitarian aid, but civil-military relations can be interpreted as inter-organisational structures to create and implement the strategy (Holguín-Veras et al., 2012).

Sweden, by increasing its military involvement in civilian fields, is moving towards the greater use of military resources in EPM (Study 1). In this sense, civilian-military coordination addresses the challenges of managing complex threats and the significant effort required to coordinate the resources and activities of inter-organisational civilian-military actors. Ironically, inter-organisational relations are normally a challenge to EPM and CD efforts instead of a foundation of support (Long & Wood, 1995). With gradually increased threats to core values and the functioning of life-sustaining systems, military involvement in civilian fields is expected to continue in developed countries. This uncertain point was debated during observations in Sweden, Canada, Iceland, Poland, and Finland. If this is the case, then managers may be required to focus on the management of technological and cultural difficulties that create communication problems, the exercise of authority, and civilian-military coordination in response operations. These problems cannot be overlooked in the planning stage as the integration of civilian-military relations in EPM is a long-standing and complex matter. The management of civilian-military relations is a meaningful resource in an overall approach to confronting worldwide risks, geopolitical risks, and economic growth risks.

**About commercial actors’ involvement in planning**

To address the strategic fit of a safety and security strategy, Study 4 showed that commercial actors are required for different specific purposes in supply chain activities. Since the strength of networks lies in their ability to be responsive to uncertainty, different types of nets must be managed based on different levels of collaboration. In collaborative activities, a network can help to integrate buyers and suppliers in the supply chain because such integration is fundamental to the value of an EPM/CD system. The degree of uncertainty is a significant factor in selecting the appropriate network. Because networks are created for specific purposes, this suggests that networks of commercial actors can adapt their business strategies to a CI supply chain to achieve
efficiency in EPM/CD. EPM/CD efficiency requires an ability to react to demand unpredictability caused by external world risks. Thus, involving commercial actors in emergency planning can help to eliminate redundancies in response operations. When the commercial actors’ goals are related to the improvement of their performance in emergency response, profits and costs can be expressed in terms of gains in time and timing. As in preparedness and response, time and timing are proposed as cornerstones of SCN efficiency, and active and dormant nets are suggested to capture critical aspects of speed, mobilisation, and the availability of emergency supplies. In this sense, while dormant structures in supply chains address long-term sets of crucial capabilities and inactive structures, supply chains are brought together to rapidly respond to emergencies. These two net structures are organised around functions of planning for coordinated services and resource transactions. The study revealed that the trust issue is at the strategic level of planning. When the coordination of SCNs is dysfunctional, trust plays a vital role in developing the relations. Claims about unreliable transactions and incompatible communication hinder network adaptation to the changing demands of response operations. Thus, because EPM/CD value creation appears to be the primary consequence of collaboration, public-private actors could be helped by involving buyers and suppliers in value-creation processes, as in contingency planning.

Commercial actors’ involvement in emergency preparedness has been discussed in the previous literature. According to Pettit and Beresford (2005), Kovács and Spens (2007), and McLachlin et al. (2009), commercial actors’ involvement in planning echoes commercial relations in a strategic SCN. An SCN suggests that commercial actors are required to be managed to respond and act as resource collaborators of skills and resources. This means that a consequence of collaboration in connection to SCNs is the emergence of public-private collaboration efforts that benefit by involving buyers and suppliers in trusted value-creation processes.

In Sweden, unreliable collaboration and incompatible communication among and within actors make the coordination of SCNs highly vulnerable. For example, coordinating SCNs in CIs such as healthcare, transportation, and the food supply was found to be unfeasible when communicating in parallel structures (EPM and CD); therefore, they are highly inefficient (Study 4). The efficiency paradigm linked to for-profit relations in emergency planning is the result of social policy outcomes, which is a view shared by Salamon and Sokolowski (2001) and Rojas (2000). This includes not only the SCN element as the common strategic fit but also the application of management. With regard to the essential elements of planning, countless processes that are necessary for management hinder the system’s efficiency and resilience. Thus, a performance overview of the SCN calls for a further delimitation of the network, which means that a different management configuration and network value creation strategy should apply to EPM/CD. When efficiency
contributes to the demands in planning, in the AHA, the planning operationalisation does not necessarily lead to better problem solving in procurement processes but can help to increase the accuracy of emergency management within the CD planning, in which relations are improved.

**Voluntary actors’ involvement in planning**

Turning to voluntary actors’ involvement in EPM and CD, Study 2 developed some themes regarding volunteer sector relations in the preparedness planning of developed countries. Volunteer actors are interested in contributing to social and economic wealth as their resources and activities are classified as freely chosen. As such, volunteer resources and activities do not involve remuneration (i.e., voluntary are financed by receiving different contributions, government grants and donations, own time, and free of charge knowledge and resources) and can occur both within and outside organisational settings, called the nonprofit sector. Voluntary or nonprofit networks are considered parts of SCN mechanisms (Study 1). Nonprofit actors are systematically employed by public officials for emergency response purposes. In this way, nonprofit actors are involved as one essential part of civil society (Kaldor, 2013; Trägårdh, 2007) and as part of the national resource capability for emergency planning (Kendall, 2003; McConnell & Drennan, 2006a). The latter argument originated from a more recent paradigm in emergency management (i.e., patterns related to relations in connection to the AHA planning). Following Boin and McConnell (2007), Rietjens (2006) and Seippel (2010), this planning requires that voluntary actors are more permanently involved to allow the coordination of their capability. Following Axelsson and Easton’s (2016) view of loosely connected relations patterns, voluntary actors follow their loose relations if they keep their present form, which is not in line with long-term planning; rather, it involves ad-hoc relations over time.

Network relations are used to overcome communication, coordination, and management problems (Steigenberger, 2016; Wolbers and Boersma, 2013). The study revealed that communication, coordination, and management are the most vital mechanisms in a network to improve planning and response efficiency. The voluntary networks of civil society are poorly prepared for emergencies (Study 1). It was noted that by involving volunteer actors in emergency planning in addition to involving them in coordinating with public actors’ value-adding activities, efficiency benefits can be created. Volunteer actors can provide expertise, access to specific target groups, and the ability to raise funds, which can introduce new resources and help in the achievement of efficient response operations. EPM and CD efficiency is a manifestation of network mechanisms and must be properly managed in connection to volunteers’ involvement because such mechanisms can profit from the public sector’s strengths as they occupy a unique position in emergency planning (Meyer, 2009; Wyman, 2009). With regard to plan operationalisation,
volunteers represent an essential capability with elements when allocating resources or when implementing governmental agreements. Similarly, it was emphasised that public actors are at the forefront when interacting with civil society.

Thus, adequate mechanisms (in any system) are required to efficiently channel and structure volunteers’ capabilities. The public sector’s inability to specifically collaborate with the non-profit sector is grounded in deficient processes for capturing volunteers’ efficiency (Study 5). The management of volunteer sector relations in SCNs in developed countries has not often been associated with military planning (Lundström and Svedberg, 2003b). However, volunteer actors have been continuously involved in complex responses and have worked with many different actors; thus, they are able to provide skills, resources and services as parts of different networks. In this sense, they must adapt to different mechanisms and different types of management to operate efficiently.

The Swedish case revealed fragmented volunteer efforts in the case of the Swedish FFO. When FFO volunteer actors are required to respond to military and civilian demands, these ambitions have different strategic directions. Dividing actors, resources, and activities into two different cultures simply generates a great degree of inflexibility (Study 2). The network structure here is likely to be active in complex emergency operations, but it should include coordination and communication with the volunteer actors. Similarly, the management of activities to improve system efficiency requires public management with mechanisms to train private and non-profit actors in the delivery of public services. This means that both EPM and CD use complex inter-organisational planning and must relate the volunteer actors to the planning structures. Thus, volunteer network mechanisms can be represented by non-profit sector structures. This allows coordination and cooperation with other public actors as well as with the state, meaning that volunteer actors may need to perform in parallel structures (public, civil, and military structures). The study showed that in developed countries, volunteer actors’ relations with the military are important when greater use of civil society resources is required. In Sweden, the military’s contribution to assisting civilian actors with their responsibilities calls for appropriate mechanisms in an SCN. The management and efficient use of volunteer resources in planning are determined based on political and financial considerations and by civilian and military policies (Study 2).

Thus, public and non-profit sector networks are a major platform for the state to provide planning with public services and utilities in an efficient manner. From the non-profit sector’s perspective, volunteer network mechanisms are strategically important as they are skilled actors who can shape the communication, coordination, and cooperation between public and non-profit actors and ultimately the efficiency and flexibility of EPM and CD planning. From the public sector’s perspective, however, such planning
requires adaptation to complex structures through complex technology, different types of leadership, clear roles, and evaluations (Study 1). This is because volunteer actors in civil society are capable, skilled and easily mobilised people who can access resources and engage in activities in complex conditions in all types of environments, but they need to be involved in the planning for emergency operations, changing threats to civil society, and war.

5.5.3 All-hazards approach planning (RQ3)

*How can an AHA planning be improved to increase the emergency preparedness and civil defence system’s resilience?*

To address the third research question (RQ3) of this thesis, emergency planning is discussed at the tactical level in Study 1 by involving all CSA and the coordination of different SCNs settings. In Studies 2, 3, and 4, operational planning connects organisations/actors in planning through SCNs frames to improve civil society readiness to AHA and system resilience. In Study 5, the strategic planning integrates different SCNs to address the particularities when changing demands are caused by current antagonistic threats and the threat of war. When the EPM and CD plans are not considered sufficient to provide safety and security, other types of arrangements should include all actors and their coordination with each other. On the one hand, civil defence’s role is traditionally planning for war and necessarily involves civilian-military relations. On the other hand, emergency preparedness is based on ambitions to improve responsiveness to the changed demands in developed countries. In particular, EPM evolved as a key concept to address contemporary economic growth risks and worldwide risks that challenge the safety of civil society, while CD evolved to address current geopolitical risks that challenge the security of countries in terms of the threat of war. The roles of EPM and CD have long-term implications for humanitarian, military, network, and business research.

Complex organisational processes, policy constraints, and harmful safety and security tendencies in developed countries have also motivated further examination of the AHA. The AHA suggests a different type of planning and different civil society relations that developed countries need to develop to meet antagonistic threats to civil society and the threat of war. Ekwall (2009) and Lewis (2002, pp. 1-2) claim that safety and security strategies in response to antagonistic threats result from pressure on national security and public policy. From an antagonistic standpoint, a country or group of countries could exploit another country’s vulnerabilities and infiltrate poorly secured systems to disrupt or even shut down critical functions (Gellman, 2002). Thus, the AHA is crucial to emergency preparedness planning (Study 1). The AHA involves both civilian and military planning to ensure the reliability of SCN mechanisms. This view of planning involves all of civil society in an entirely different way to meet the requirements in developed countries (Study 5).
Again, AHA planning is not operationalised by a specific actor alone; instead, all actors must be involved, and the relations among them need to be properly managed because they all have essential roles in planning and are vital mechanisms for a responsive SCN.

Responsiveness is critical to safeguard the CIs of Sweden that is based on preparedness for responses in times of peace and war. It therefore defines many aspects of strategy. In complex emergencies and in threats of war, responsive processes can influence actors’ ability to achieve a strategic fit. These aspects can be incorporated into an overall strategic responsiveness model. One aspect of such a model concerns the responsiveness of actors in emergency planning. The other aspect concerns the strategic responsiveness of forces to deploy military forces for combat to provide timely support to political leaders. However, humanitarian, business, organisational, and military theories call for ethical and professional norms to be respected in terms of strategic mechanisms and state regulations in responsiveness operations. Analyses on coordination in connection to existing preparedness systems call for strategic fit to enhance efficiency and resilience. Here, coordination, clear roles, risk mitigation and planning are properties of safety and security strategies. Thus, significant coordination difficulties appear when essential actors are not present in the planning stage (Study 5).

An SCN is a mechanism that by itself might not directly impact coordination for overall safety and security strategies, but aggregated SCNs provide critical structures to the planning and the operationalisation of the capabilities of actors. However, one of the greatest dilemmas faced by current SCNs is the creation of AHA planning through business agreements. One strategic problem is found within planning and focuses on coordination, while another more external problem concerns the processes of other actors, suppliers, and customers in the supply chain. The latter problem suggests that the goal of promoting efficiency in an SCN involves reducing inventory buffers to increase access to information. An SCN can therefore be understood as a responsive strategy, which means that planning cannot be performed by individual actors; rather, planning is strategic and must be considered based on long-term coordination among CSAs (Study 5).

In Sweden, a variety of strategies can lead to responsiveness, efficiency, and resilience and can be similarly required in both stable and turbulent environments. Strategy fit plays a significant role in several different areas simultaneously, such as emergency planning, commercial policies, military planning, and network management. Thus, safety strategies and security strategies are somewhat connected in responses to antagonistic threats and threats of war. In the Swedish system, the required actors, resources, and processes of production and information are still partly unexploited in planning and, in turn, in SCNs. Thus, for planning to be responsive, it requires adapted commercial agreements and adapted management to support the operationalisation of planning in response operations (Study 1).
However, a resilient system cannot replace Sweden’s original emergency plans; rather, all actors are required to coordinate and cooperate to deliver an AHA planning in which managers, plans, and actors are integrated, trained, and properly managed (Study 5).

EPM planning does not take place on similar grounds as CD planning. The two systems of planning do not serve to improve the ambitions of an overall responsive strategic approach; instead, a gap exists, and underrating it can hinder the focus on the challenges to strategic responsiveness that occur in Sweden’s current systems. Within research on emergency management, an appropriate level of preparedness for emergencies in developed countries is required to address antagonistic threats and hybrid war (e.g., terrorism, cyber-attacks, disinformation) (Study 5). Regarding the missing actors in emergency planning, research may need to examine this issue in terms of reduced system efficiency (Study 1).

Table 13 illustrates the EPM and CD, which contain the planning of civil society capability in AHA-building SCNs in civil-military coordination for the safety and security of Sweden. Although both approaches (EPM and CD) have been discussed based on different actors involved in SCNs to simplify the initial description of civil society readiness, there is no reason why, in principle, they cannot be applied to the AHA, combining a greater number of actors to meet all types of hazards. Additionally, because Sweden’s safety and security strategy are not responsive in isolation but within systems (also in connection to other developed countries), strategies can work together in responses to common emergencies and changing demands to protect civil societies, at least to a certain degree. For example, Sweden and its neighbouring Nordic countries are coordinating their SCNs (e.g., IT, communication systems, and other skills) in more collaborative planning to ensure resilient preparedness systems against terrorism, organised crime, and cyber-attacks. This thesis recommends that with further development, the approaches will provide a means by which complex cases such as the case of Sweden, in a diversity of interactive conditions, can be converted to a normal analytic base of network systems and change patterns. In this way, they could link the interaction and network approaches to legislative emergency management.
### Table 13. Overview illustrating the findings

<table>
<thead>
<tr>
<th>Preparedness Planning</th>
<th>RQs</th>
<th>AHA</th>
<th>CSA Relations</th>
<th>SCN</th>
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<tr>
<td><strong>Tactical Planning</strong></td>
<td>RQ1. Study 1: Essential elements: Human resources Knowledge management Process management Resources Civil society actors</td>
<td>All types of complex emergencies: Global risks; Worldwide risks; Economic growth risks; New threats; Antagonistic threats; Threat of war</td>
<td>Essential actors: Public; Voluntary; Military; Commercial (individuals not in this thesis)</td>
<td>SCNs provide structures to the planning for obtaining essential elements and coordinating actors, and activities in adapted forms. SCNs are used to achieve efficiency</td>
</tr>
<tr>
<td>(value in terms of efficiency)</td>
<td></td>
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<tr>
<td><strong>Operational Planning</strong></td>
<td>RQ2. Studies 2, 3 and 4 Coordinating temporary nets; Strategic to the system; Actors' agreements adapted nets</td>
<td>Complex emergencies; New threats; Antagonistic threats; War. Depending on the civil-military relations</td>
<td>Public-private Collaboration Civil-military Profit-non-profit (individuals not in this thesis)</td>
<td>Planning is operationalised in SCN settings. Networks can be delimited to flexible and responsive operations. Civil-military relations are still problematic</td>
</tr>
<tr>
<td>(value in terms of flexibility and responsiveness)</td>
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<tr>
<td><strong>Strategic Planning</strong></td>
<td>RQ3. Study 5 AHA to meet all threats in planning is strategic to planning SCN coordination to safeguard all CIs</td>
<td>Safety and security of the developed country, Sweden, is critical issue for politicians and decision-makers to meet changed demands</td>
<td>Civil society capability to meet changing demands in Sweden need to be organised in a different way</td>
<td>SCN is a mechanism through which the overall approach to planning can be ensured to serve profitability goals and system resilience</td>
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<tr>
<td>(value in terms of resilience)</td>
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### 5.6 Summary

This chapter presented an analysis of the results provided by the five studies and offered discussion of the challenges facing civil society in relation to peace and war. Civil societies have become global targets against the democratisation and integration shortcomings. In this sense, it is no longer the state but rather the emerging complex global order that links worldwide risks, geopolitical risks, and economic growth risks to the safety and security readiness of developed countries. EPM and CD systems are not responsive in isolation, but
the AHA involves all actors in planning the capabilities of strategic in settings offered by diverse types of SCNs.

Taking an overall view, the studies together explicitly addressed the three research questions offered in Chapter 1. The five studies analysed and offered discussions about the processes involved in the AHA to improve the capabilities of safety and security strategies to meet the changing demands in developed countries. Initially, Study 1 showed that emergency preparedness involves essential elements of emergency planning. These essential elements need to be in place for a response plan to become operational. Additionally, actors and the different relations among them at different levels of strategic planning form the structures of essential SCNs. With increasing world risks, challenges to EPM and CD planning are raised when actors, their relations, and capabilities are missed in the preparedness planning. Based on the Swedish case, obsolete structures challenge these preparedness systems. The AHA planning can help to improve safety and security strategies, civil society capability and the EPM resilience of developed countries.

Connecting to civil society capability, implications for private-public collaboration theory in this thesis are directed at both public and private actors. The opportunities associated with public-private partnership theory have not previously been used for research on civil defence theory. When private-public theory is used in the context of Sweden’s civil defence planning is referred to as the strategic type of planning in which competition and risk assessment are uncertain and thus risk should not mean increased costs. In this thesis, several issues have arisen regarding the differences between Swedish safety and security readiness and that of other developed countries. Some of these issues are addressed in Chapters, 1, 2 and 4, whereas other issues do not fit into the practical use for emergency preparedness planning. A major implication for practice is that the concepts of EPM and CD planning are applicable to the coordination of critical SCNs to protect vital structures but in an AHA planning the SCNs are yet strange structures to the responsible managers.

Based on previous research in emergency preparedness, civil defence planning is a theoretical construct that is intended to be used by civil and military planners. Following the results from the RQs, this planning has implications for practice concerning the dilemma of integrating EPM and CD planning for different ambitions and in different ways (civil and military). The concern of this thesis is the examination of EPM and CD systems and their ability to integrate different actors using the setting of SCN as mechanisms to create new approaches in the preparedness planning to meet the challenges in developed countries. This chapter contributes to the discussion of strategy, coordination, and mitigation with regard to civil society’s capability to protect CI and to manage SCNs based on the AHA to planning. The AHA provides a basis for risk assessment in which action plans provide the necessary components for safety and security strategies. These components are strategy, coordination, mitigation, and responsiveness to avoid fragmentation of the...
risk picture that can arise when different systems are used simultaneously. Linking these components into an overall management approach can enable a country’s preparedness for antagonistic threats and the threat of war, and these components must be executed efficiently. Thus, the AHA presents a model that can permit different planning purposes and ambitions relevant to the safety and security if they are in line with strategies applicable to developed countries, adding complexity to the EPM and CD planning dilemma.

Additional dimensions that can be improved through EPM and CD systems in developed countries are relevant for further understanding civil society’s readiness in a broader globality. The first dimension is the military’s involvement in civilian fields. Rather than attempting to define essential differences between the state, including the military, and civil society (including civil actors), the discussion in this thesis focuses on the strategic ties that bind them together in EPM and CD planning. The second dimension is the mitigation of risk, which becomes observable through management. Mitigating changing risks allows for better responses to persistent antagonistic threats and the threat of war. Developed countries with poorly secured CI systems have vulnerabilities that can allow bad actors to infiltrate, disrupt, or even shut down critical functions of society. The third dimension is risk management, which includes the increased costs of risks taken by, for example, commercial actors to solve the supply problems based on uncertain perceptions of threats, and risk assessments.
6. Conclusions and implications

The purpose of this thesis was to examine the management of supply chain networks in the emergency preparedness and civil defence planning in Sweden and to investigate a developed country’s readiness when faced with complex emergencies and changing threats to civil society.

In the previous chapters, this thesis has investigated and discussed how the EPM and CD planning can use the SCNs settings to structure the different levels of emergency planning. Within the context of developed countries and the Swedish-specific preparedness planning, such structures need to be accomplished to meet complex emergencies and changing threats to civil society, including the threat of war. In this chapter, by reflecting on the overall purpose, some concluding discussions are presented along with the contributions of the thesis. With regard to the implications of this thesis, some recommendations for future research are proposed.

6.1 Concluding general remarks

The results of this study confirmed that with changes to global safety and security, civil society in developed countries must be linked together in a completely different way, then today. When temporary preparedness (short-term planning) turns into permanent preparedness (long-term planning), there is a potential management problem (Kaneberg, et al., 2016). For temporary preparedness, worldwide risks, geopolitical risks, and economic growth risks tend to be threats to the readiness of developed countries. The study proposes that if this temporary preparedness become permanent, the system will not be able to hastily adapt to changes since actors in different structures are still struggling in isolation (civil, military, voluntary and commercial actors’ structures). One of the consequences of network expansion in planning might be the provision of settings for involving new actors in the networks matched to EPM and CD requirements (policies and regulations) to coordinate with the existing actors. The responsiveness of new actors is therefore likely to compromise the character of the existing network, to introduce new capability to it and to place new demands on it. Regardless of the primary motive behind such actors’ involvement, some elements of self-interest will always be present in the activities of the actors blocking the development to change (e.g., Babecký et al., 2012; Christensen et al., 2016; Hildebrand, 2017; Kaldor, 2013; Trägårdh, 2007; World Bank, 2002, 2016, and 2017; Axelsson and Easton, (Eds) 2016).
The results of the study imply that the global civil society is sometimes problematic in developed countries’ performance capacity. If the global civil society directly impacts safety and security, developed countries may need to adapt their safety and security as it is linked to international networks. A possible consequence is that developed countries may need to act as mediating middle powers even if safety and security strategies have been contracted out to the key capacities of CSA. For example, as one of the consequences of the safety and security strategy, CSA are no selected through competition in the Swedish system due to the changing demands. In contrast to defence policy and security policies, there are also elements of commercial policy, service policy, and military policy at stake in these changed requirements. These elements of private-public collaboration theory are important determinants of commercial relations.

The study demonstrates that it is difficult to separate different forms of coordination in the EPM and CD of Sweden. This may indicate that in practice, there is not enough difference between coordination among the public, the private, the voluntary, and the military actors to differentiate their capability or that these actors’ capability has not been defined sufficiently in the network.

This study connects the previous literature on the relationship between emergency planning (essential elements) and emergency management by using a conceptualisation of the inter-organisational relations in an SCN between organisations and individuals in civil society in which a higher level of flexibility increases efficiency. This thesis considers the relations between civil and military actors to be an essential part of planning. Through coordination and cooperation, the essential mechanisms can be provided to an SCN. By translating civilian-military relations into developed countries’ demands based on worldwide risks, economic risks, and geopolitical risks in the larger international context, this thesis offers a focus on the strategic ties that bind them together in EPM and CD planning (for war) rather than attempting to define essential differences between the state (including the military) and civil society (including civil actors).

By considering the involvement of military actors in emergency operations, this thesis links to the previous literature discussing military relations when civil order is threatened and when planning for war is needed. However, this thesis proceeds from the idea that civilian-military relations must be treated differently and confirms that in any type of uncertainty, both military and civilian planning are essential for EPM and CD systems to function. The management of civilian-military relations is a meaningful resource that is associated with different levels of performance in an overall safety and security strategy. In this thesis, management requires attention to the relationships between these actors while at the same time ensuring their availability. This thesis therefore proposes that civilian-military tensions exist and are structural based on the legislation regulating governmental actors (e.g., departments of
6 Conclusions and Implications

defence). These tensions stem from changes in safety and security conditions that cannot be resolved through planning. Thus, EPM might need to focus on the use of authority, coordination, cooperation, flexibility, responsiveness, and communication between all actors as these aspects are important to shaping the understanding of EPM and its connection to CD planning (Kaneberg, 2017).

The study results presented in previous chapters are based on multiple (embedded) case studies conducted in Sweden. Some of the study’s results can be generalised to the contexts of developed countries, and some are specific to Sweden. The general results are also transferable for the EPM and CD of other developed countries, such as Canada, Finland, Poland, the US, Australia, and Iceland. It is likewise clear that Swedish-specific results are not directly transferable to other countries’ national approaches to threats, at least not without some form of adaptation to make the results transferable. Hereafter, it is necessary to briefly include discussions on what might cause research results to be Swedish-specific and then to recognise those results that must be central to be Swedish-specific.

6.2 Concluding on Swedish readiness

The study demonstrated that Sweden is moving towards an increased complexity and requirements on preparedness planning adaptation to the changing demands. In line with a novelty of the EPM and CD planning, not only SCNs offer frames to the planning, but the AHA provide planning with strategic settings to related in the global context. Hence, preparedness planning in either system cannot in isolation be able to comprise the safeguarding of the several CIs. With more actors, different relations and required elements of planning, the coordination of different SCNs gradually becomes difficult to manage. This management problem, in addition to the unclear definition of safety and security, is a strategy problem. Previously, the EPM planning would have been limited to safeguard CIs in targeted SCN readiness. With the development of CD planning, additional capabilities are included through civil-military relations to ensure wider civil society readiness (Kaneberg, 2017). A difficulty related to this development is that the effects of any emergency planning will be too slow to meet the changing demands (Schyberg, 2016; Scanlon, 2012; Boin and McConnell, 2007; WHO, 2007; McConnell and Drennan, 2006; Schneider, 2005; Svedin, 2004; Rosenthal et al., 2001). This means that a prerequisite for the increased demands is that SCNs settings can meet the demands created by CI breakdowns (Von Lubitz et al., 2008). This can be done by developing relatively long-term commercial relations. However, managing SCN complexity in emergency planning has a potential core value problem regarding when, where and how saving lives should be the priority of countries.
The study showed that in Sweden, there is, in some commercial relations, uncertainty regarding the object of comparison for the budgets of the public buyers. It is not always clear when the budgets for planning resources and skills should be compared and shared among many actors and whether responsibility is retained within one or many different relations. This is similarly true when coordination and cooperation are essential capabilities of the political rhetoric of readiness (Beamon and Kloteba, 2016). As redundancies generate costs (L’Hermitte, 2016), it is argued that efficiency, flexibility, and responsiveness contribute to the resilience of EPM and CD systems. An unsolved problem for public-private collaboration is to be as responsive and resilient as they were at the beginning of the negotiation in dormant relations (i.e., keeping relations alive for a long time until the next response operation). Thus, this appears to be a potential coordination problem in some of the agreements.

6.2.1 The dilemma of mixing different ambitions

Previous humanitarian research has addressed the dilemma of mixing different ambitions in and through emergency preparedness management (Boin and Bynander, 2015; Wassenhove, 2009; Eaterby-Smith et al., 2012; Kovacs and Spens, 2007; Perry and Lindell, 2003; Landon and Hayes, 2003; Tomasini and Wassenhove, 2002) but in different ways. The concern of this thesis is the investigation of the EPM and CD systems and their ability to integrate different functions to create new ways of responsibility and control over emergency preparedness in Sweden (L’Hermite et al., 2014; Gaillard, 2012; Halldórsson and Kovacs, 2010; Nielsen & Snider, 2009; Pettit & Beresford, 2005; Alexander, 2002-2005; Nielsen, 2002). This section contributes to the concluding discussion of what combining different ambitions might involve and how it can present an approach that enables an overview of the different planning levels, purposes and the ambitions at stake, adding complexity to the Swedish readiness dilemma.

Kleindorfer and Saad (2005), for example, argued that emergency systems were initially unable to create emergency responsive plans that are sustainable because systems involve actors bound to profit and interest in markets. Things that were important to actors were no longer represented in the EPM or were represented in a different way. Tactical planning, for example, meant different things to the military actors than to the EPM actors (Nielsen 2011; Fox, 2008; Smith, 2005; Alexander, 2002). The authors concluded that planning is made and transformed in networks; that is, it is mixed in the sense that it appears standardised in the network because it draws together mixed relations and the interests of intertwined elements. EPM and CD planning therefore cannot be stable over time but must coordinate at different level meeting the different ambitions at stake. The progress of mixing different disciplines, however, remains largely taken for granted by research. Similarly, in Boin and
McConnell’s (2007) study, the authors are concerned with EPM as a system that loses its control because of operationalised planning failures in coordinating its essential elements, creating capabilities and adapting to current demands when CI breakdown. In turn, planning involves only minimal space for control for individual actors because most actors could mobilise capabilities in relation to current threats separately in real time (Farahani et al., 2014; Cohen, 2007; Kisangani and Pickring, 2007; Wassenhove, 2006). The presented discussion considers how the management of actors remains possible because the original hierarchical structures in Sweden are maintained and the full potential of EPM and CD planning systems is not used. The concern lies in the different logics and ambitions in the realm of preparedness rather than the complexities of the different disciplines in place.

The significance of the Swedish readiness presented in this thesis is that its focus is on the coordination of different actors in networks and the business interests of the relations. This complements prior studies on the complexity of involving and/or creating adaptive mechanisms and adapted management to operate efficiently. This thesis develops this notion by researching how management is revealed as an adequate mechanism (in any system). This thesis also contributes to understanding how voluntary capability reflects the public sector’s inability to adequately manage this non-profit sector. Understanding risk assessment processes in relation to the voluntary capability and how they can help to generate the efficiency of planning highlights the importance of managing voluntary relations in the SCN. This is because in practice, voluntary actors are not usually associated with military or civil planning processes, as demonstrated in the example of Sweden (Study 2). This understanding engages voluntary actors within many different processes and networks. The findings presented in this thesis suggest focusing on the emergency supplies (Kaplan, 2002; Hulthén, 2002) to which the mechanisms and management of voluntary supplies into different systems are fragmented (the Swedish FFO). In current structures, however, voluntary actors are often required to simultaneously respond to military and civilian demands, different ambitions, different directions, and several processes. The result is that voluntary actors struggle to provide skills and resources in different structures, which has been shown to generate a great degree of inflexibility.

To some degree, CSA are present across many levels and areas of the preparedness system (Ekwall, 2009; Cornall, 2005), but they are not equally related across different SCNs and calculative legislations. The discussions presented here illustrate how mixing different emergency planning levels can solve management dilemmas in terms of the complexities, efforts and related ambitions as well as the global readiness for peace and war. However, just as this thesis recommends solving dilemmas, it creates new ones. The AHA requires coordination between actors that were previously separated in peace
and in war. Decentralised CSA (organisations) reach out and relate elements that were otherwise only loosely coupled: from national planning for safety to security, from understanding of plans to involving all actors and their relations, from production abilities to wealth markets, and from strategies to value dimensions, across the existing structures normally associated with financial and management values.

6.3 Theoretical contributions

On the theoretical level, this thesis contributes to previous research by examining the complexities, efforts, and dilemmas related to emergency preparedness in a globally acting civil society with different systems and with different management strategies in the context of developed countries. In particular, it extends research on emergency planning, the actors involved, and their different relations by providing a refined theorisation of the blurred mechanisms in a strategic SCN and the associations among planning, response and emergency management. The model presenting the elements of EPM (Figure 10; Study 1) was adapted from the previous literature on emergency preparedness (Van Wassenhove, 2006; Kaneberg, et al. 2016) to the complexities of emergency planning in developed countries. The model provides a holistic consolidation of the essential flows in an SCN in which actors, their resources and their activities are essential elements for the capability of emergency preparedness planning in developed countries. Understanding the challenges facing developed countries while adapting their systems to changing threats and the threat of war, the military, commercial entities, and volunteer actors that are currently not part of the system represents major capabilities relevant to the development of a general structure of the fields of preparedness planning and emergency response efficiency.

Given the dramatic global changes, the civil society literature has provided insights into the political readiness of countries in peace and war (Kaldor, 2013). In connection with this, Behringer (2005) claims that the countries considered to be middle powers have opportunities to exercise leadership on international geopolitical risks, worldwide risks and economic growth issues. This is due to these countries’ technical abilities and entrepreneurial skills to build coalitions and advance and manage initiatives in roles as global civil society actors. By choosing the AHA, this study therefore provides insights to extend the relationship between EPM and CD planning and highlights the need for strategy and SCN coordination to safeguard CI (Kaneberg, 2017). Both in relation to what we can learn through the theoretical fit and in relation to the empirical findings, this thesis addresses emergency management based on the complexity of SCNs. It considers the management of strategic networks to generate emergency preparedness efficiency. By delimiting the network,
different types of networks can be used through nets, such as current, renewal, new, dormant, and active nets, which appear to enable an extension of network strategy theory and the extension of supply chains relevant to increasing the understanding of their strategic value (Study 4).

The findings contribute to the evolving literature on emergency planning by showing that the threat of war has increased and that the new types of planning need to be linked in EPM and CD. Developed countries are required to ensure readiness to meet new threats to civil society given the new complexity imposed on these countries. The embedded studies explore how various recent demands for emergency planning concerning actors and their relations are combined in an SCN and simultaneously managed by different CSA (organisations). Likewise, the possibility of operationalising planning for emergency response operations is examined. Specifically, the findings shed light on the unique potential for emergency managers to adapt their plans based on their positions in an SCN. The findings also show that the military, volunteers, and commercial actors (both buyers and suppliers) can be consciously incorporated in planning in an SCN setting.

Current theories in business administration suggest that management practices produce efficiency. This thesis widens this perspective on efficiency by including the AHA to increase the efficiency of emergency planning. Actors and their relations are analysed and described to increase the efficiency of civil society preparedness as a theoretical contribution. The thesis is a discourse on the complexity of classic emergency management in humanitarian SCN regarding the readiness of developed countries to react and respond to emergencies. In contrast to current theory on emergency management, planning strategies are the result of the relations between CSA and political and public policymakers. The example of non-profit actors deserves attention in bidding because they provide benefits to the government, including reduced opportunistic behaviour and transaction costs (Steinberg, 2003). Given this logic, the expenses of non-profit actors and the government have a direct relationship (Young, 2000) because when the government’s expenses increase, the levels of activity by non-profit actors increase.

New demands on emergency preparedness theory are the reason why planning theories must adapt to the current context of developed countries. That is, the primary focus is on safeguarding CI that impacts many people’s security rather than focusing on life and death, as in humanitarian theory. Despite the traditional approaches of emergency planning, CSA’s involvement in planning has proven to be relevant to the theory of emergency response efficiency. The findings of this thesis contribute to extending the literature on emergency planning. Because the threat of war has increased in connection to the safety and security of developed countries, new types of plans need to be developed. A limitation of the research is the potential fragmentation of SCNs, which is particularly difficult and undesirable for different civil, military,
commercial and voluntary arrangements in emergency planning to meet the new threats to civil society in developed countries.

Current emergency planning theory is associated with SCN theory (Vaillancourt, 2016; Kovacs, 2011; Catalan and Kotzab, 2003). The studies in this thesis explored how more recent demands on emergency planning combine actors, their relations, and their capabilities in a strategic SCN. The demand to operationalise planning in response operations sheds light on the unique potential for emergency managers to adapt their planning in SCN due to their unique positions. The contribution to the theory in this study involves extending the use of SCNs to the more specific demands in developed countries. Thus, the study shows how the military, volunteers, and commercial actors (both buyers and suppliers) can be consciously incorporated into planning in an SCN setting. A limitation of the research is a potential misalignment in the management of the organised actors of civil society and the management of individual persons of society since it is far from clear how individuals should be handled in EPM and CD contexts.

The thesis also contributes to the involvement of actors, resources, and activities in the network literature by exploring structures for the delimitations of the networks that emergency managers in EPM and CD actively share (e.g., Kovács and Tatham, 2009; Möller and Rajala, 2007; Wood, 2000; Håkansson, 1987; Aldrich and Whetten, 1981; ). Commercial relations and PPPs in the humanitarian literature meet the conditions in Third World countries (Jamali, 2004). This thesis develops this notion by researching such relations in developed countries’ EPM and CD networks. The results highlight that such relations can be adapted to network demands to safeguard CI. Additionally, it is emphasised that perhaps the most important result of the network perspective is the strategic use of such relations. The results also hint at the potential to adapt the management of EPM and CD to safety and security strategies. In emergency preparedness, the management of networks has gained attention by specifying the ways in which CSA, their relations, and their activities function in terms of adapted capabilities in an SCN. Such an understanding places the focus on networks as current, renewal, new, dormant, and active nets that require adapted management to be efficient in response operations. Thus, management nets are demonstrated to be essential to the responsiveness of SCNs and to the EPM efficiency.

In current network theory, the possibility of managing networks has been discussed. In contrast, this thesis contributes to management by involving actors, their resources and their activities in the network in a different way. By combining business and humanitarian emergency management theory, the delimitation of the network is relevant to studies of EPM and CD in developed countries as well as for the strategic goal of SCNs (e.g., Aldrich and Whetten, 1981; Håkansson, 1987; Kovács and Tatham, 2009; Möller and Rajala, 2007). The management of delimited networks (nets) is shown to be essential to the responsiveness of SCNs.
6.4 Managerial implications

The managerial implications include increasing attention to EPM and CD planning (for war). This suggests that the application of the AHA to the increasingly complex threats to civil society in developed countries is an effective strategy. However, overall safety and security strategies must be considered in light of coherent systems and assessments regarding the ability to mitigate risks. Essentially, the use of a coherent system suggests to emergency and military managers that increasing preparedness to achieve a responsive and efficient strategy can offer an appropriate approach to achieve their common goals. For example, by sharing vital information through communication, managerial decisions are enhanced among and between CSA. In this way, civilians, the military, volunteers, and commercial interests as well as the media can effectively assess and mitigate global risks and their impacts at the national level.

This approach could guide decision-makers in emphasising the proper combination of decisions to achieve the intended emergency preparedness and response outcomes. For instance, if superior readiness is intended in the case of Sweden, then the use of EPM and CD planning for war could be more responsive as a system to support the overall strategy, which entails flexibility and, especially, safety and security efficiency. Meanwhile, if using the AHA in the overall strategy is prioritised, coordination and cooperation can enable its use through an SCN (Sisiopiku, 2007; Sovel and Leeson, 2006; Perry 1991). Under the changing demands for safety and security, higher SCN efficiency can support a prioritised course of action and its flexible operationalisation.

The results showed that emergency managers, military leaders, legislators, and elected administrators perceive themselves as having flexible planning processes for addressing complex threats (such as terror attacks, cyber-attacks, antagonistic threats, and war) but remain unable to provide adequate management for their operationalisation in connection to the emergency response. Thus, emergency planning flexibility is becoming an important managerial domain among CSA who favour competitive commercial involvement. However, the studies showed that this general awareness of emergency planning flexibility does not always reduce the inevitable consequences of natural and technological emergencies, terrorist attacks or war. It was confirmed that under conditions of low uncertainty or low coordination and cooperation, it is more important to strengthen resources and capabilities other than emergency planning flexibility because CSA always have access to and constantly develop their specific capabilities, even in peaceful times (Kaldor, 2001, 2003, 2013). Thus, there are always capabilities, but the problem lies in the coordination and cooperation among civil society when coordinated capabilities are required.
Implications for Swedish emergency planning

There are some implications for practitioners in Swedish emergency preparedness that were presented and discussed in the separate appended case studies on the emergency planning of developed countries. As demonstrated in the studies, most of the results are applicable to Swedish planning for complex emergencies and changing threats. A supply chain network deals not only with how the supply chain actors share responsibilities and capture benefits from the enhanced overall profitability but also with managerial inactivity. Since the actors have adapted their structures to tactical planning that enables them to optimise their individual objectives rather than overall profitability, the SCN described earlier can be useful in identifying and avoiding managerial inactivity. Actors will simultaneously solve the problems of inefficient supplies caused by various aspects of the supply chain struggle and underprivileged supply chain network design (i.e., when designing the CD planning for war, as discussed specifically for Sweden).

Another implication relates to who should initiate the changes to adapt SCNs with regard to current demands. The research suggests that new demands and market competition to influence the decisions of responsible actors will lead to satisfactory changes. Instead of shifting responsibilities and supply burdens to others and between the military, voluntary, and commercial actors (Studies 2, 3, and 4), the SCN offers actors mutual efforts to resolve managerial inactivity so that actors can focus on creating efficiency value in response operations. Managing these relations has implications for the Swedish defence planning to enhance the total profit without risking actors’ individual existence. Although these explanations are Swedish-specific, the fundamental problems may be rather general. Thus, it is perhaps important to study the problems behind the managerial inactivity in defence planning and to compare the fundamental problems with similar problems that the Swedish defence planning might be facing or to consider whether other developed countries’ solutions are applicable to Sweden.

Lastly, implementing and maintaining a supply chain network over time often means being challenged with resistance to change. The fact that the complexity of emergency planning has increased in recent years is hardly surprising to governments or to public managers in Sweden. Nevertheless, as demonstrated in the case studies, it is possible to be mistaken when the management of emergencies does not target the preparedness goals. Networks with multiple supply chain actors mean that there is a need to identify and overcome sources of resistance to change. Since EPM and CD are experiencing a dramatic reform regarding their mutual planning and sharing of responsibilities in the areas of safety and security, managers have an excellent opportunity to impede the resistance to these changes. The SCN can be used as a framework to identify several sources of managerial inactivity that contribute to resistance to change when addressing new threats. Additionally, by viewing resistance to change at the different planning levels, the research
results reveal that actors in the Swedish EPM and CD need to mutually understand the core humanitarian principles (humanity, impartiality, neutrality) as these can involve problems, such as, when the greater involvement of the military in civil tasks is proposed as a solution to changing demands. If Sweden takes steps like other developed countries, this should be done with awareness of the fact that this goes against humanitarian awareness. It is not suggested that Sweden will take rapid steps to increase civil-military planning in the near future. Based on these planning layers, actors should question whether the Swedish CD planning will lead to the development of civil-military relations and whether CD planning leads to excessive military power. Actors need to focus on ongoing development that has a direct impact on the performance of the supply chain network.

6.5 Future Research

While a network perspective provides knowledge about involvement and coordination, an overall approach would enable the stability of countries’ readiness or perceive restrictions inside and outside the systems to be examined. The shared aspects and shared understanding that are highly valued by informants in this study might then move to the core of EPM. A theoretical perspective, on the other hand, underlines the structural aspects of preparedness planning. Much could be learned from the structural coordination of actors through the changing and planning of preparedness processes in light of EPM and CD. An obvious focus on the ways in which planning processes are stabilised as standard knowledge and draw upon the processes of decision-making could develop the relationships of technical and communicative management processes. Moreover, involving different actors, such as governments, agencies, military, commercial, voluntary and other actors, in commercial agreements with their regular roles could broaden the capability of previous socioeconomic, socio-political, humanitarian and business management research (Christopher and Tatham, 2014; Ferreira, 2010; Kovács and Tataham, 2009; Rietjens et al., 2007; Min et al., 2005; Sullivan, 2003; Byman, 2000; Donalsson and Preston, 1995). This research mainly focused on average capabilities and their activities with a fragmented view of the threats. Expanding the suggestions on emergency response capability the public sector is related to the political administration in providing conditions to emergency preparedness planners to combine and coordinate actors and is an area for more research.

Future research prospects include issues addressed after reflecting on the discussions above. These theories may contribute to expanding the view of the relation between EPM and CD and between safety and security and thereby may contribute to the development of emergency management studies (to adapted planning) and to the AHA (safety/security) discussion. This thesis
offers five different formulations of emergency preparedness that further describe safety and security in developed countries. Further explanations involve planning, actors, and their relations in complex SCN structures. Further research that addresses how SCNs (e.g., Aagaard and Svensson, 2006; Alexander, 2005; Christopher, 2011; Perry, 1991; Van Wassenhove, 2006; Van Wassenhove and Pedraza Martinez, 2012) can be used to mitigate the vulnerabilities of CI in developed countries might contribute to identifying essential CSA and elements in EPM and CD planning. Although Study 1 identifies the temporary dimensions of aspects of planning in the operationalisation of response operations, these temporary dimensions are not further operationalised to provide a theory regarding manufacturing, production, and supply in the context of SCN in EPM. However, the findings of the individual studies indirectly involve temporary aspects of EPM and CD planning. Understanding such planning in terms of temporary demands suggests opportunities for advancing the understanding of AHA planning in relation to safety and security strategies.

The thesis emphasised civil society based mainly upon a theoretical perspective with regard to peace and war, as advanced by Kaldor (2013). The findings on how civil society and globalisation occur in and over the borders of territorial states invite future studies that apply different perspectives of civil society theory to the transnational character of threats. For example, CSA involvement in EPM networks has inspired studies on the delimitation of networks (e.g., Aldrich and Whetten, 1981; Håkansson, 1987; Kovács and Tatham, 2009; Möller and Rajala, 2007) and their use of strategy. Alternatively, a study specifying the ways in which CSA relations function in terms of actors in an SCN with a focus on public buyers and private suppliers may provide additional insights that can develop the discussion of the dilemma in CSA relations regarding coordination and cooperation in EPM and CD. A limitation of the research is the misalignment between current commercial regulations and the private-public theory. More research is necessary on private-public relations that are supposed to encourage commercial actors to improve the system efficiency. Presently, they are not followed by adequate contracts and agreements to plan and respond over time. Public-private agreements are based on rather obsolete, sterile laws and regulations. Thus, there is a possible misalignment between the ambitions of the private actors and the strategic level and practical application of these regulations into EPM and CD.

Suggestions about the role of military structures in shaping safety and security strategies also offer grounds for future research. For example, further research might explore other military structures that are better adapted to their current involvement in civilian tasks, including planning capabilities, and the military's relations with CSA or in safety and security strategies. Research could specify further coordination and cooperation between military structures and civilians that might profit when the EPM/CD planning is
operationalised (e.g., Alexander, 2002; Nielsen and Snider, 2009; Seipel and Heaslip, 2014). Research could also develop the capability-mediated nature of military structures with regard to how the military is organised and managed and how it communicates and coordinates with CSA in response operations.

Research on voluntary involvement (Lundström and Svedberg, 2003b) in EPM and CD planning is needed to investigate their efficiency in relation to time-resource-based strategies because in emergency planning, actors and their relations are essential elements, and actors depend on each other to make plans operational (e.g., L’Hermitte et al., 2016; Pettit and Beresford, 2009; Tomasini and Van Wassenhove, 2009; Towill and Christopher, 2002). Future research that explicitly addresses volunteers’ capabilities can generate new understanding of how to manage volunteers for optimal planning efficiency and to meet the safety and security demands in developed countries.

6.6 Summary

This chapter presented brief concluding discussions of the implications and contributions of this thesis. EPM and CD structures involve CSA, are connected in relations to SCNs settings to provide structures building the blocks in AHA planning. Additionally, these blocks are integral in strategic mechanisms of safety and security in which actors’ coordination and cooperation are planned at various levels. Possible implications, theoretical contributions and future topics for research were highlighted in connection to the five principal areas discussed in the thesis based on safety and security strategies within the context of developed countries. The necessity for planning flexibility to meet the demands of complex emergencies and changing threats to civil society, including the threat of war, was also discussed.


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Appendix 1: Data collection protocol

The Jonkoping International Business School (JIBS) and The Swedish Defence Materiel Administration (FMV) are involved in joint research on total defence planning comprising emergency preparedness management (EPM) and civil defence (CD) planning. Civil-military relations are a concern of diverse types of networks such as the Swedish supply chain management (SCM) activities to structure the strategic, operational and tactical planning.

A1.1 Overview of the case study

Over the last 10 years, new models of funding and training PhD students have been established in Sweden to integrate industry into PhD education. Several programmes have been developed in which businesses can co-finance PhD scholarships or students can become employees as industrial PhDs in an organisation (Kolmos, Koföed, and Du, 2008). Following some joint projects on this subject, it was agreed in spring 2014 to set up a joint PhD research project entitled “Emergency preparedness and civil defence in Sweden: an all-hazards approach of a developed country supply chains.”

The motivation to initiate this research was that recent threats to the Swedish civil society are estimated in several studies to be more complex than ever before (e.g., Alexander, 2005; Kaldor, 2013; Boing et al., 2007). It has been noted that with regard to trust in civil society readiness to face changing threats and complex emergencies, more than half of the population in Sweden believes that the current readiness of Sweden to respond to such changes is not sufficient. In recent reports (e.g., defence preparation 2016-2020), Swedish society claims point to shortages for securing vital infrastructures that supply, for example, food, healthcare, drinking water, IT, and public transportation in light of major emergencies. Lessons learned from civil society relations occurred on an individual organisational or routine basis but not at the strategic level, as it was the case of the forest fire that caused major material loses in Västmanland 2014 (Strömberg, 2015). Many experts involved in such relations claim that with regard to changing new threats, most Swedes think that preparedness planning is yet inadequate. Regarding preparedness against a military attack, only slightly more than 10 percent of Swedes believe that the preparedness is sufficient, while almost 80 percent think it is insufficient. With regard to military threats, the same reports show that almost 60 percent of the Swedish population believes that state spending on Sweden’s military defence should be increased.

Based on what Van de Ven (2007) calls the embeddedness of cases, this method allowed us to find a process approach to study the characteristics of civil-military actors relations in the SCN of EPM and CD contexts. The central question of this research is as follows:
“How can supply chain networks be managed to support the emergency preparedness and civil defence planning in Sweden when faced with complex emergencies and changing threats to civil society?”

To guide the researcher to answer the central research question, several questions were formulated:

- **What are the main reasons for your organisation to be a participant in the emergency preparedness planning of Sweden? Does your organisation have reasons to cooperate and coordinate with other developed countries? If so, in what areas?**
- **What decisions need to be made and by whom (role) at your organisation to increase the actors’ coordination and cooperation in SCNs? What are the strengths and the weaknesses of your organisation in that process?**
- **To what extent do those weaknesses and/or strengths influence your organisation’s willingness and decision-making to actively coordinate and cooperate in the planning of emergency preparedness at the national, regional and local levels?**
- **What would be the principal motivation for your organisation to coordinate and cooperate in SCNs with other organisations in emergency preparedness? What kind of problems arise in the SCN process of coordination, and why do those problems arise? How does your organisation manage those problems?**
- **Are there other alternatives for coordination and cooperation for your organisation to achieve the targets and the objectives of the SCN in the preparedness process?**
- **Please bring up some other aspects that are important for increasing coordination, specifically civil-military coordination.**

**The first stage** in the selected research strategy to answer these questions involves the first of five embedded research cases studies, titled “Emergency preparedness planning in developed countries: the case of Sweden.” In meetings, courses, and seminars in connection with this study’s aim (e.g., at the MSB, the FHS, FOI, and SAF), the necessary trust was gained to access a more extensive picture of Swedish EPM than otherwise would have been available. As an industrial PhD, the fieldwork for this study was conducted in essentially three roles. As researcher, the contacts with experts in the EPM and CD fields provided access to key interviewees and allowed the researcher’s presence in field observations in Sweden, Canada and Island in a role as a researcher conducting research in Sweden. The result of the first study revealed deficiencies in the emergency preparedness planning of Sweden. Because of organisational lacks, the voluntary, military, and commercial actors and their capabilities overlooked missed in the response to complex emergencies (Kaneberg, et al., 2016)

**The second stage** of the research approach consisted of the subsequent three embedded cases (Studies 2, 3 and 4) that were integral to the researcher’s work output at the FMV in addition to some internal operational work. The central question in these three embedded cases was the following:
“How can CSA be managed to integrate into the planning of SCNs over time based on their roles and their capability in emergency preparedness and civil defence?”

To aid in answering this research question, the following questions were used to analyse the voluntary (Study 2), military (Study 3) and commercial (Study 4) involvement in the EPM and CD planning of Sweden.

- Based on the organisation’s mandate and task, please describe the level of preparedness at which your organisation is performing and some of the general background important to achieve the agreed level of performance.
- Which other partners are considered by your organisation as coordinating partners in the planning of emergency preparedness and in what areas?
- In what networks is the coordination and cooperation of emergency preparedness efficient for your organisation? If there is coordination with the military, what are the major incentives for that coordination?
- How is the coordination and cooperation with other actors in preparedness managed by your organisation, and at what hierarchical level and in what roles are those decisions made?
- What can Swedish organisations (specifically your organisation) learn from the other developed countries about coordination on a commercial basis to improve the emergency preparedness efficiency?

Study 2, on the voluntary sector involvement in SCNs of EPM and CD, titled “The voluntary sectors networks in emergency preparedness in developed countries: the case of Sweden,” provided an analysis of an important group’s involvement: Frivilliga Försvar Organisationer (FFO), which provides resources and skills in civil and military structures that are reluctant to work in different structures and diverse processes. A conclusion of this study was that deficient SCN can hinder planning structures to the effective use of the voluntary sector in the emergency preparedness of Sweden. Study three, on military involvement, entitled “Managing military involvement in emergency preparedness in developed countries,” analysed the collaborative civil-military relations through SCN and the ability of EPM and CD to respond to complex emergencies. The study claimed that there are problems in civil-military relations that cannot be overlooked in planning. In this communication, the exercise of authority and coordination are critical issues for managers. Study 4, on the commercial actors’ relations, is entitled “Managing commercial actors in strategic networks in emergency preparedness: a study of multiple networks from Sweden.” The study offers an analysis of the management of commercial actors in the strategic networks to offer structures to the EPM and CD planning. In developed countries networks are understood as strategies that are connected to response efficiency. The study finds that networks are strategically relevant to EPM and CD planning and to the efficiency of response operations, but networks need to be delimited and adapted to apply to the current changing demands.

The third stage of the research, an approach that applies is AHA to strategic, operational and tactic planning to the safety and security readiness of developed countries, was provided in the embedded cases in Study 5, and is
entitled “Emergency preparedness and civil defence planning: an all-hazards approach to safety and security in developed countries.” The central question in this fifth embedded case was as follows:

“How can an AHA planning be improved through SCNs to increase the emergency preparedness and civil defence system’s resilience?”

To allow the researcher to answer this research question, some questions were presented:

- Which actors usually perform activities corresponding to strategic, operational, and tactic planning in EPM and CD, and which activities do they perform in the SCNs? Please present an approximation of the number of people and their functions contributing to such planning at your organisation.
- Is the strategic, operational, and tactic planning coordinated to deal with all types of threats to civil society? How are other actors that are not regularly engaged included in SCNs?
- What complications arise in the planning when all types of hazards are considered and when higher coordination and cooperation is required between EPM and CD? By whom and why? What issues of safety and security are related to civil-military organisations’ responsibilities when an all-hazards approach is considered?
- How do you think the implications concerning the coordination and cooperation of planning with the military can be reduced when a national strategy is in focus? How could those implications be managed at your organisation, and how can the same implications be managed at the military organisation and governmental level?
- How do you think other civil organisations manage the same type of implications? When do you think it is not possible to coordinate and cooperate in an all-hazards planning in SCNs with the military organisations?

Study 5, on an AHA that involves all types of complex emergencies and changing threats to civil society. This fifth study connects with the conclusions of Study 1 and examines the SCN planning of EPM and CD to react to changed demands. The study is concerned with conditions for an AHA to planning in which all actors of civil society are required to increase the safety and security readiness to prepare and react to changing demands. Finally, the study provides three propositions for an increased understanding of civil-military relations in AHA planning. Recommendations are made based on these conclusions.

A1.2 Field procedures and observations
The field procedure involved gaining access to the organisations, the resources in field observations, the schedule of data collection, and anticipated events. As many respondents in the military and civil parts preferred to remain anonymous, their information is confidential. The names of the respondents are not referred to in the case studies.
A1.2.1 gaining access to organisations

Military part
Research study I-5 was partly funded by the FMV. Due to their significant role in the Swedish system and SAF knowledge on the military logistics area, gaining access to military actors was relatively easy. The researcher’s involvement in studies at the FHS allowed contact with several key actors like MSB, Police and FOI. The individual embedded case studies refer to the specific actors who were interviewed and their roles.

Civil part
Involved civilian actors in this research were directly interviewed in relation to each of the related studies, and information about their association and role in the Swedish system is provided. Additional or missing information was subsequently obtained by email, telephone or interviews. Civil actors were selected based on the information given from military and other informants and based on their tasks. This was done through meetings, courses, and seminars, for instance, at the MSB, the FHS, FOI, SAF and FFOs, asking for names, phone numbers, and other details. Additional information was gained through documents, reports, homepages, gossip, meetings and seminar conferences in different Nordic countries (Finland, Sweden, Norge, Denmark).

Field observations
In five field observations in a participatory role, visits to Canada, Iceland, Finland, Poland, and in Sweden provided valuable empirical understanding and secondary material to serve the purpose of this research on different planning conditions. The field observations were not specifically chosen but were a resourceful way to gain documented understanding of other developed countries’ emergency planning. Notes and documents provided by the representative organisations at the seminars in each country provided information used as part of the empirical background in the research studies.

<table>
<thead>
<tr>
<th>Country</th>
<th>Approach to EPM</th>
<th>Approach to CD</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>AHA to EPM</td>
<td>Overall planning</td>
<td>Spring 2015</td>
</tr>
<tr>
<td>Iceland</td>
<td>AHA to EPM</td>
<td>Civil planning</td>
<td>Spring 2015</td>
</tr>
<tr>
<td>Finland</td>
<td>AHA to EPM and in part to CD</td>
<td>Neutral national defence</td>
<td>Spring 2015</td>
</tr>
<tr>
<td>Poland</td>
<td>Limited use of military in EPM</td>
<td>Overall planning</td>
<td>Spring 2016</td>
</tr>
<tr>
<td>Sweden</td>
<td>AHA to EPM and in part to CD</td>
<td>Civil defence planning</td>
<td>Spring 2016</td>
</tr>
</tbody>
</table>

A1.2.2 Schedule of data collection
The duration of each embedded case study was approximately five months. However, because of Sweden’s new policy directives for safety and security in 2016, the civil-military relations in Sweden came into focus, and the effort of the civil-military actors (MSB-SAF), towards CD started. This impacted part of the ongoing research and demanded additional visits to actors in the related...
case studies. If no visit to actors of the case study was necessary, the following schedule applied:

<table>
<thead>
<tr>
<th>When</th>
<th>What: Research Proposal (RP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1-2</td>
<td>Research proposal nature and characteristic of emergency preparedness planning to complex emergencies</td>
</tr>
<tr>
<td>Week 3-6</td>
<td>Research on actors, relations, activities in supply chains, processes and planning demands</td>
</tr>
<tr>
<td>Week 7-11</td>
<td>Research on developed countries conditions and their related threats to civil society</td>
</tr>
<tr>
<td>Week 12-14</td>
<td>Writing the case: theoretical, empirical, method contexts</td>
</tr>
<tr>
<td>Week 15-16</td>
<td>Feedback from tutors, checking the descriptions results</td>
</tr>
<tr>
<td>Week 17-20</td>
<td>Defending the RP, adjusting and breaking down RP context into individual embedded case studies.</td>
</tr>
</tbody>
</table>

For the five cases, if no visit to actors of case study was necessary and if there was no publication in any international journal, the following schedule applied:

<table>
<thead>
<tr>
<th>When</th>
<th>What: embedded case studies 1-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1-2</td>
<td>Research purpose and questions and characteristic of emergency preparedness and civil defence planning to complex emergencies</td>
</tr>
<tr>
<td>Week 3-5</td>
<td>Preparing field research (interviews, secondary data, observations)</td>
</tr>
<tr>
<td>Week 6-7</td>
<td>Interviews to actors, gathering secondary data, transcriptions</td>
</tr>
<tr>
<td>Week 8-11</td>
<td>Processing results of gathered data, ev. additional interviews</td>
</tr>
<tr>
<td>Week 12-17</td>
<td>Writing the case: theoretical, empirical, method contexts</td>
</tr>
<tr>
<td>Week 18-19</td>
<td>Feedback from tutors, checking results, options to publications</td>
</tr>
<tr>
<td>Week-20---</td>
<td>Adjusting context and connecting to Journals additional demands</td>
</tr>
</tbody>
</table>

A1.2.3 Unanticipated events
- availability of respondents in all roles in the system.
- the timing of the field observations as part of the case studies
- changes in the Swedish safety and security policy
- changed responsibilities among actors
- facing some degree of resistance in continuing the research
- ambivalent role of being both researcher and practitioner at the same time
- different expectations when following two different goals within different environments (place of work FMV and academic stance JIBS)
- opportunity to participate in field observations in developed countries

A1.3 Embedded research case studies questions
This section deals with the actual questions in each of the embedded research study cases of the thesis. Figure 19 below provides the structure for the generation of interview questions in each of the studies.
Background
Gaining a good background from the more than one hundred interviews conducted with experts and managers in the Swedish system was important. After informed consent was obtained, respondents were informed about the nature of the research subject, the purpose and procedure, and the use of the material for academic purposes. They were offered anonymity and pseudonyms. Although the respondents agreed to allow the interviews to be published, sometimes a double check with the respondents was done to receive permission from them to use a specific quotation.

General questions: interviews started with these type of questions

- Which actors can describe the levels of preparedness in which your organisation is performing activities as part of the preparedness planning?
- What was the beginning of your organisation’s involvement in emergency planning?
- Which partners are considered important for coordination in the planning of emergency preparedness and in what areas?
- In what networks can coordination and cooperation for emergency preparedness be efficient for your organisation and for the system?
- In what way can the civil-military relationship develop to apply to changing demands in Sweden?

Depth and breadth information

Study 1
1. What are the essential elements of the preparedness planning system that ensure the safety and security of civil society?
2. How do CSA adapt from permanent to temporary networks?

Study 2
3. What network mechanisms are necessary in planning to integrate the voluntary and public sectors of civil society in emergency preparedness?
4. How can voluntary sector networks contribute to efficiency in emergency response operations?
Study 3
5. What is the current role of the military in supporting EPM in response to complex emergencies and changing threats in developed countries (such as Sweden, Finland, and Poland)?
6. How and in what ways can the planning of ES be supported by SAF and, specifically, the FMV (as a civil actor that exclusively provides military logistics) to develop and improve their involvement in emergency preparedness?

Study 4
7. What type of strategic network is necessary to increase the efficiency of EPM in developed countries?
8. How can EPM networks be delimited and managed for public-private collaboration to increase response efficiency?

Study 5
9. What strategic elements are necessary for the supply chain as part of an overall responsive strategy?
10. How can emergency preparedness be developed to support overall strategic responsiveness to antagonistic threats and war?

Developments and implications
Due to continuous policy developments in Sweden, during the research process, a consistent procedure was necessary in all case studies. Different sets of interview questions were created, and resulting transcriptions were produced. The procedure also facilitated clarifications and changes from the initial answers by the respondents from public, private, commercial, voluntary and military organisations (e.g., FMV, SAF, MSB, FHS, Coop, ICA, FFO) and academics. Respondents were offered anonymity and pseudonyms.

A1.4 case study report
Each of the embedded research case studies is reported according the following outline:

Abstract
- Purpose
- Design/methodology/approach
- Findings
- Originality/value
- Key words and Article type

Sections 1: Introduction
Study 1: the Swedish EPM planning and the SCN
Study 2: voluntary actor’s involvement in the EPM and CD planning (FFO)
Study 3: military actor’s involvement in emergency planning and response
Study 4: commercial actor’s management in the SCN of EPM and CD
Study 5: an AHA planning to the Swedish safety and security in EPM and CD

Section 2: Major categories (45 major categories)
Study 1: CS, planning, SCN, EPM, civil-military, efficiency, emergencies
Appendix

Study 2: CS, EPM, voluntary sector, network, communication, coordination, management, actors, reassures, activities, efficiency.
Study 3: SCNM, EPM, Complex emergencies, changed threats, civil-military coordination, emergency supplies, changed treats.
Study 4: EPM, DC, Collaboration, Networks, Nets, efficiency, PPP.
Study 5: Strategy, EPM, CD, AHA, SCM, coordination, responsiveness, safety, security.

Section 3: Methodology and method
Study 1: qualitative, triangulated semi-structure interviews, secondary data
Study 2: qualitative, triangulated semi-structure interviews, secondary data
Study 3: qualitative, triangulated semi-structure interviews, field observations
Study 4: qualitative, triangulated semi-structure interviews, secondary data
Study 5: qualitative, triangulated semi-structure interviews, secondary data

Section 4: Empirical backgrounds (from...)
Study 1: the Swedish EPM system, actor’s levels and relation to planning
Study 2: the FFO, and other actors of the voluntary sector of Sweden
Study 3: the SAF, FMV and MSB, etc, field observations in Finland and Poland
Study 4: the NBHW, SKL, MSB, SAF, SIFA, OneMed, Coop, Strukton etc.
Study 5: FHS, SAF, DoD, MSB, FOI, NOA, TV, Gartner, Kvadrat etc.

Section 5: Analysis and discussion
Section 6: Conclusion and future research
A1.4.1 The involved actors responding to semi-structured interviews


<table>
<thead>
<tr>
<th>Nr.</th>
<th>Organisation’s names in Swedish and English</th>
<th>Representative level in Swedish</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Försvars Departament</td>
<td>Dep. sekreterare</td>
</tr>
<tr>
<td>2</td>
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<td>8</td>
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<td>22</td>
<td>Hemvärnet</td>
<td>Expert inom flygtransportation</td>
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**Respondents affiliation Studies 1-5 2015-2017**

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<th>Nr.</th>
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<th>Level or-and role in Swedish</th>
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<td>Swedish Federation of County Councils</td>
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<td>Nordic Council</td>
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<td>Arena 143</td>
<td>Project manager</td>
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<td>Swedish Local Police</td>
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### Appendix

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<td>Försvarsmakten HV</td>
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<td>Svenska Hemvårnet</td>
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<td>Myndighetens Samhällsskydd och Beredskap</td>
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| 21 | National Board of Health and Welfare | Regional manager |
| 22 | Defense Council | Regional response |
| 23 | Ministry of Justice | National administrator |
| 24 | Defense Secretary of State | Secretary board |
| 25 | Legal Secretary of State | Secretary board |
| 26 | Ministry of Defense | Logistics administration |
| 27 | National Board Directors | Regional board |
| 28 | National Police Board | National director |
| 29 | (Parliamentary) Committee on Defense | Administrator |
| 30 | Secretary of State | Secretary board |
| 31 | Swedish Armed Forces | Supreme Commander |
| 32 | Broadcasting Commission | Director |
| 33 | Traffic Agency | Senior advisor |
| 34 | County Administrative Board | Administrative coordinator |
| 35 | National Defense College | Research management |
| 36 | Swedish Rescue Services Agency | Coordinator |
| 37 | Board of Customs | Deputy head manager |
| 38 | County Council | Regional manager |
| 39 | Defense Research Agency | Research and development |
| 40 | National Public Transport Agency | National deputy director |
## Study 4

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<td>Managers and experts in the Procurement Act of Sweden</td>
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<td>diverse data from:</td>
<td>SAF-FMV-MSB-NOA</td>
<td>Articles/books/studies/policies /analysis/reports/webpages</td>
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Appendix 2: Observations overview

In visits to Canada, Iceland, Finland, Poland, valuable empirical material on the readiness approaches of these countries was collected to compare with the Swedish readiness. These countries share different approaches to safety and security due in part to historical reasons (e.g., Poland and Finland’s involvement in the Second World War), each country’s EPM and CD are also dependent on what membership in different organizations, such as the European Union (EU), the North Atlantic Treaty Organization (NATO)\textsuperscript{11} or the Nordic Cooperation\textsuperscript{12} and these countries are recognized as middle powers by engaging in a fast-track diplomacy through common structures in the international systems. In fact, they have embraced global safety and security issues as “niche” areas of their foreign policies. This is in contrary to expectations on global security that follows great powers like the USA and Russia. Research proposes that middle powers perform in a ‘niche diplomacy’, which is focussed on impacting and retaining the world peace (e.g., Behringer, 2005). This appendix also outlines how planning, actors and relations were integrated for the readiness of Canada, Iceland, Finland and Poland to deal with complex emergencies and changed threats, based on field observations.

Canada

According to The Public Safety in Canada (2012, pp. 1-8), threats to civil society involve events that can impact Canada and Canadians. While threats and hazards vary in their justification and impact, an effective approach to managing them requires that the Government of Canada identify the amount of risk involved with them. Increasingly, the Government of Canada and international organizations are recognizing that understanding the threats to society in global context through identifying, assessing, and monitoring them is a key step to creating the foundation for effective EPM. In that sense, emergency planning can increase a country’s resilience. Therefore, the Government of Canada has operated based on similar principles by implementing controls in the form of legislation, regulations, policies, and guidelines to address threats and assign responsibilities for the risks.

\textsuperscript{11} The North Atlantic Treaty Organisation (NATO) is a military alliance established in 1949 to serve three purposes: to deter (erstwhile) Soviet expansionism, prevent the revival of nationalist militarism in Europe through a strong North American presence on the continent, and encourage European political integration. To achieve these goals, several Western European nations joined with the United States and Canada to build a military cooperation and collective defence union. Accordingly, the North Atlantic Treaty was signed on 04 April 1949, which established NATO (Banerjee, 2016, pp. 1-2)

\textsuperscript{12} Nordic Cooperation on Civil Security after the Cold War Oslo: Institute of Defence Studies 2011, available ‘Nordic Defence Cooperation –inspiration for the EU or a lesson in matching expectations? Nordic countries relationship – competing, parallel, or mutually reinforcing – between the military and civil cooperation processes (Bailes, 2014, p. 5)
Canada, the overarching legislative umbrella in emergency management is the 2007 Emergency Management Act (EMA), which establishes a federal role in EPM and defines the roles and responsibilities of the Minister of Public Safety and the other ministers.

**Planning**
In Canadian emergency planning, floods, hurricanes, cyber-attacks and forms of ideological radicalization are all recent threats and hazards that the Government of Canada (GC), in collaboration with the provinces and territories, has taken a role in managing (Canada, 2012). Emergency planning is conducted in close partnership with Defence Research and Development Canada - Centre for Security Science as part of the federal AHA initiative endorsed by the Assistant Deputy Minister to the Emergency Management Committee in October 2009. In emergency planning, the AHA offers guidelines that have been developed in consultation with the federal government institutions of Canada. Contributions from federal experts also helped to strengthen the principles, assumptions, and application of the AHA. Similarly, other risk assessment stakeholders amongst key international government partners in the areas of risk assessment and EPM in the United States, the United Kingdom, and the Netherlands provided valuable perspectives that have been incorporated into the Canadian approach to safety and security.

**Actors**
A coordinated approach to ensuring civil society actors’ involvement in AHA planning is the Interdepartmental Risk Assessment Working Group (IRAWG), which represents federal institutions participating in AHA planning. During the summer quarter, the IRAWG is responsible for choosing from a list of departmental priority threats and hazards the key risks that will be further assessed during each AHA cycle. Scanlon (2012) argues that the working group often considers the police, the fire brigade, ambulances, public works, social services, the transit system, and the military. They are all important when providing on-going and timely strategic safety and security related to the AHA planning.

**Relations**
Developing relations to ensure territorial security is a core responsibility of the GC, which provides the conditions that permit the free movement of Canadians, other people, and legitimate goods within the country and across borders. The GC works to effectively control Canada’s international borders and provides safety and security for Canadians to go about their lives in an ordinary way. In a globalized society, there are an increasing number of challenges to governments’ ability to protect and maintain territorial security. These challenges can come from abroad (e.g., terrorist attacks, nuclear
capability of adversarial states, challenges to Arctic sovereignty) or from natural disasters (e.g., hurricanes, earthquakes, infectious diseases). Territorial security, however, reflects the challenges Canada faces in controlling its territory, either through annexation or invasion. This dimension requires enhanced planning. Thus, the ability of the GC to secure its territory or borders is associated with the demand to secure the safety of its citizens. Therefore, the relations between government institutions, the development of EPM and the CD planning are important to determining the country’s future capacity. To face new challenges and to determining whether investments should be made in EPM and CD areas more attention to the current demands may be required.

Iceland
Iceland has been slow in developing a national safety and security plan. The reasons for this delay include a long period of reliance on protection by the US post-World War Two and divided internal views over defence solutions. With the withdrawal of all US-stationed forces in 2006, Iceland’s security relations have become much more diversified both nationally and internationally. Attempts have been made to frame the country’s security in more multi-functional terms. Geographically, Iceland lies in the middle of the turbulent North Atlantic Sea on top of a rift between the American and Eurasian tectonic plates, which are gradually drifting apart. Due to its harsh climate, Iceland is naturally prone to disasters. Economically, Iceland is on its way to financial stabilization after the economic crisis in autumn 2008. However, full recovery may take a long time. Iceland’s economic base, fisheries and the manufacturing of aluminium, will likely not grow at a pace that can quickly lift the country out of the crisis. Strategically, a clear path towards restructuring Iceland’s economy that would increase long-term growth cannot be separated from AHA planning. Thus, the question is whether Iceland’s civil defence solutions are in step with regional strategic developments. No sign of any change to Iceland’s status as an unarmed member of NATO has been observed, and little money for civil defence will be available.

Planning
The many natural disasters and the uncertainty of the environment have made Icelanders self-sufficient in terms of civil defence and EPM. They have always a list at hand regarding equipment, stocks of food, water, and medicines that are needed for different emergency situations, as earthquakes, floods, and volcanic eruptions. This concern with emergency planning allows Iceland to implement measures, policies, and strategies for addressing food supplies as well as temporary and longer-term interruptions. The 2015 Policy on Civil Protection and Security lists measures for securing food supplies in times of crisis. It defines two measures: food security and food safety. Food security involves access to sufficient, safe, and nutritious food, while food safety refers
to access to wholesome and safe food supplies. The policy also provides guidelines for companies and individuals regarding preparedness during times of crisis. The key stakeholders in the Icelandic food supply chain are the Icelandic Farmers Association, the Ministry of Agriculture and Fisheries, the Ministry of Environment and Natural Resources, the IFVA (the national European Food Safety Authority (EFSA)), the Focal Point and Rapid Alert System for Food and Feed (RASFF), the Federation of Icelandic Fish Processing Plants, wholesalers, retailers, and food manufacturers. Svedin (2004) claims that along with a great sense of individual responsibility and initiative, Icelandic emergency planning is grounded in a strong emphasis on community resilience and volunteer involvement. The importance of the individual as part of the larger collective/community effectively denotes the country’s democratic civil defence culture.

**Actors**

Actors securing the supply chains in Iceland have shown to be involved in mainly two levels of administration: municipal and central. This approach contrasts with that in many other developed countries, which have three levels: municipal, regional, and central. In Iceland, the security of supply chains falls under the authority of the Civil Protection and Security Council (CPSC), which comprises various stakeholders from the government as well as the public and private sectors. The country’s vital infrastructure is included in the government policy on civil protection and security as drawn up by the CPSC. The Ministry of the Interior is the supreme authority. The Civil Protection Department of the National Commissioner of the Icelandic Police is responsible for coordinating the security of the supply chains. The assessment of what is vital to the security of Icelandic society is based on the analysis provided by the Icelandic Risk Assessment Report (IRAR), which was published in 2009. Based on the analysis in the IRAR, the main security threats for Iceland have been classified into three groups: (1) major accidents in the Arctic; cyber-threats, sabotage; natural disasters; (2) organized crime; financial/economic security; food security; public health and epidemics; and (3) military threats; terrorism. This country report is mainly focused on the security of food, drinking water and pharmaceutical supplies, which are included in group two. According to its proposed safety and security strategy, Iceland’s vital infrastructure is prioritized and requires full attention. However, there are claims that the Icelandic government is limited to handling only larger threats to its CI. This means, for example, that the private sector has substantial influence in emergency planning. It is generally accepted that the private sector jumps in when needed during a crisis. Private sector actors who contribute resources during a crisis have a good chance of being reimbursed after the acute threat has passed. When there are no pre-established contracts regarding who will pay for what during a crisis or guarantees for reimbursements, there is less cooperation among actors.
Relations
Iceland is known not only for its small size and proneness to natural disasters but also for its dependence on international markets and its politico-economic position. Iceland is physically close to the United States and has many economic, strategic, and cultural ties to its large neighbour in the west. However, Iceland is also part of Europe. It shares the Nordic cultural heritage and basic values, and it works closely with Norway and Denmark on safety and security issues. Although culturally connected to Europe and economically dependent on the EU market as an outlet for its niche products and imports, Iceland is not a member of the European Union. In 2014, the National Security Policy for Iceland issued a report on Iceland’s security experience. This document opened the way for drafting Iceland’s first-ever official security strategy, which was finally approved by the Parliament in 2015. This security strategy helped to highlight the reality of both harder and softer security challenges. Therefore, Iceland’s simultaneous crises (the management of and recovery from the severe economic crisis, its defence, and domestic security) seem to be interacting, and Iceland’s EPM will probably need to consider longer planning terms. In addition, the regional geostrategic pattern in the Arctic is undergoing changes that will also affect Iceland’s strategic safety and security conditions

Finland
In Finland, EPM is considered from the broader perspective of both crisis management and military planning. That is an AHA planning. There are several reasons for this approach, such as the EU battlegroups. This AHA approach has been largely approved by the Finnish presidency. Therefore, the legislative ambitions regarding European Security and Defence Policy (ESDP) are not particularly high. Due to the expiration of the Partnership and Cooperation Agreement (PCA) with Russia and the fact that relations with Russia is a special field of interest and expertise in Finland, the presidency removed the mandate for negotiations on the PCA. These efforts were hindered by a dispute between Poland and Russia about meat imports. Crisis management in Finland is managed by the military, whose primary goal is to restore and maintain stability in crisis areas. Therefore, EPM planning is divided into enforcement, maintenance, and withdrawal phases. In the enforcement phase, the amount of military management increases, and the need for civil emergency aid is substantial. In the maintenance phase, the amount of management by civilian actors gradually increases, and in the stabilization phase, the amount of military management is reduced.

Planning
Emergency planning in Finland is focused on CI and is divided into several supply and security sectors: energy production, transmission and distribution
networks; communication systems; networks and services; financial services; transport and logistics; water supply; construction and maintenance of infrastructure; and waste management (National Emergency Supply Agency (NESA), 2013). According to Koski (2015), there are three dimensions to CI planning in Finland that must be balanced: political, technical, and economic. The political dimension consists of national legislation and national security needs as well as international coordination and cooperation around those needs. The aim is to reach similar solutions that can enable coordination and cooperation between countries with correspondingly similar needs. Countries with shared CI benefit from consistent legislation and security policies. The economic dimension refers to companies and other financial actors responsible for building and maintaining CI and that function according to their economic interests. The private sector has a high level of ownership of CI structures, and services in Finland, which makes the economic dimension of CI planning the most important. Companies operate for profit; therefore, supporting their plans with public funds would distort the functioning of the market. The companies that operate the CI are engaged in competition for profit and are not charities. The technical dimension refers to the advancement and utilization of technical solutions. All actions and solutions proposed by the Finish government and organizations to protect the country’s CI fall into this domain.

**Actors**
Different actors are deeply involved in the National Emergency Supply Agency (NESA). In this agency, the managers of several CIs are responsible for providing support for emergency planning. The aim is to facilitate communication, coordination, and cooperation among civil society actors during a major disturbance, to speed up the recovery process and minimize damage. CI managers also support organizations, rescue services and the management of state-owned communication systems. According to NESA (2013), these emergency actors have always been active contributors to the Finish EPM system. For example, business actors are engaged in preparedness and CI protection through public-private partnerships (PPPs). The PPP in Finland are concerned as long-term contracts between a private party and a government entity to provide a public asset or service in which the private party bears significant risk and responsibility. The management of actors and their remuneration is linked to their performance to the system.

**Relations**
Before acknowledging Finland’s EPM terminology, it is important to understand that Finland’s role in the EU changed with the EU’s enlargement (when relations with Russia changed). In that sense, Finland is no longer the only EU member to border Russia and thus to have a claim to special expertise on EU–Russia relations. Many new EU member countries share such
expertise and bring a much more critical view of Russia into the EU. The Finnish aim of strengthening EU policy towards Russia was both timely and difficult to achieve. Based on this motivation, an AHA framework is described as been central to EPM in the Finnish peace-building policy. The framework seeks to provide a balance between individuals and government institutions. The Finnish AHA therefore involves relationships between civilian emergency preparedness managers and military CD planners due to the complexity of the conflicts, as emergency managers cannot guarantee an enduring process in complex situations.

**Poland**

Poland’s shifting security and defence roles has implications for the European Security and Defence Policy (ESDP). Recent changes in Poland’s security and defence policy have been motivated by three main developments that have caused conflicts regarding Poland’s conception of its role. First, the transformation of the international situation following 9/11 underlined the new security threats. Second, consistent with this transformation, increased international expectations put pressure on Poland to enhance its military role. For example, Poland’s allies have reacted to the changed international environment in different ways, and Poland has participated in missions outside of its security interests to maintain its role as a ‘reliable ally’ in Iraq, for example. Third, Poland’s accession to the EU allowed the country to fully contribute to the ESDP. Thus, Polish decision-makers adopted a pro-active view of military by combining CD planning with EPM in a desire for the country to be considered as a ‘reliable ally’ and to be included in decisions affecting the country’s interests. In turn, this approach has ensured increased Polish participation in the ESDP.

**Planning**

A new Polish national security strategy was approved at the end of 2016. Its creation reflected ongoing shifts in the global security environment, most importantly the Ukrainian crisis. Changes also occurred with regard to the currently assertive behaviour of the Russian Federation towards traditional areas of Polish geostrategic interest. Polish EPM focuses mainly on integrating CD planning for strategic priorities during participation in international operations and the provision of Polish territorial defence. Thus, changes in priorities fall under the fulfilment of commitments to NATO and the country’s strategic partnership with the United States. Nonetheless, this strategic culture is a valid tool to use when assessing Poland’s security and defence planning. The CD planning originate policy-makers’ decisions to act. Thus, Polish safety and security planning simultaneously encompasses the priorities of NATO and the EU. These priorities are important to the way that Poland defines its role in international safety and security. Poland’s
positioning in the EU is vital to its national safety and security strategy (National Security Strategy of the Republic of Poland, Warsaw Bureau, 2014).

**Actors**
There are great external expectations for the role of actors in the safety and security of Poland. Actors shape Poland’s foreign policy as well as its security and defence policy. CSA in Poland has adopted a strategic culture in addition to Poland’s status in the EU. Policymakers, therefore, make general decisions, commitments, and generate rules to engage in actions most suitable to their region. In addition, they are also engaging in actions on the international system on a continuing basis. CSA in the Polish system include commercial actors in for-profit arrangements; for example, SMEs and large companies, regardless of industry or region, are involved in planning. Emergency managers are important to the Polish financial system to function and develop, which is not as sophisticated as other Western systems. Nevertheless, Poland was the only country in the region that reported some economic growth over the years of crisis. However, despite this relative economic stability, Polish firms reported a delayed reaction to such crisis. A reasonable interpretation might be that the crisis was not perceived as serious by managers, who also did not know how to respond to such a crisis.

**Relations**
In the Polish EPM, activity has been the clearest in the military dimension. As previously stated, Polish military engagement has broadened geographically. The police and border guards fully support Poland’s national strategy in protecting its borders. However, there has been a realization that Poland’s policymakers must take on more responsibility in the Polish national environment. Nevertheless, changes caused by the new safety and security environment, require that Poland’s engaged in new alliances. Thus, whilst Poland was not always viewed as fully contributing to the EU due to the country’s political preference for Polish-US relations and NATO, this perception is changing. Poland is now viewed as an active and reliable contributor to international missions and projects. Poland’s active approach within the EU has been a product of the country’s accession to this membership. EU relations allowed the country to fully participate in the safety and security arena of Europe and allowed it to pursue a leadership role (www.frontex.europa.eu)