The community resilience challenge – a case study from Sweden.

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Abstract: The research literature and the international frameworks of disaster risk reduction (DRR) stress for using a "all of society" approach. At the local level the necessity to involve the public in reducing vulnerabilities and building resilience is highlighted. The assumption is that community resilience can be created by applying a bottom-up approach to DRR. This entails proactive efforts to involve the public as a means to reinforce local communities' capacity to prepare for, act on as well as recover from extreme events. This paper presents a study of the Swedish city of Örebro focusing on local actor's interaction within DRR regarding climate change risks with the explicit aim to create resilience. The perspective is that of leaders of this work in local government and civil society organizations and the method used is documents studies and interviews aiming at uncovering the attitudes towards the utility and challenges of involving the public and particularly in relation to groups that are considered especially vulnerable. The result is then discussed within the theoretical framework of community resilience developed and the utility of this framework in the Swedish context is assessed. We find positive attitudes towards involving the public, primarily as a resource in emergency crisis management. Network-building and collaboration, with the aim to gain information about how people perceive their reality and to build knowledge about the needs of the public regarding information and support is considered important. We identify some constraints related to communication, collaboration, knowledge, etc. but also some opportunities related to networks, voluntarism, connecting public and civil society actors, etc. for creating community resilience. The results will help the development of theories of community resilience and reinforce practice.

1. Introduction

Reduction of disaster risks involves across the board renewal of participatory means of decision-making, creating opportunities and accepting and promoting shared responsibility. Communities are not resilient until they are fully inclusive and democratic.
Mayor of Christchurch, New Zealand 2014 (Bach 2015)

A central question within the research-fields of disaster risk reduction (DRR) and climate change adaptation (CCA) is how to best deal with change and the complexity of our societies together with the uncertainty regarding risks? DRR theory and research points to the need for a combination of "top-down" and "bottom up" approaches and this is reinforced by the Sendai framework for disaster risk reduction (SFDRR) that emphasize an all society approach (UNISDR 2015; UNISDR 2007).

The focus in DRR and CCA policy is predominantly on technological and physical solutions (UNISDR 2015) dominated by a "top-down" perspective and lack of context-specific approaches. This can be problematic as non-scientific local knowledge is an important resource available only through a bottom-up approach (Gaillard & Mercer 2012; Norris et al. 2008). Accordingly, communication and coordination including those most at risk is essential (Gaillard & Mercer 2012).

In Swedish the term resilience is not used to the same extent as in for example Australia and USA within DRR policy (MSB 2013). Nevertheless the "all-of-society" approach is evident government reports (SOU 2007:60) and in a report from the Swedish National Contingencies Agency (MSB) (MSB 2017). Action at all levels of society is stressed as a means to improve preparedness and planning for extreme situations. Research also emphasizes a focus on benefits and challenges included in joint responsibility between the state and civil society (Scolobig et al. 2015). The theoretical concept of *community resilience* has developed as a way to include the local level in a holistic way and to increase the understanding of a systems approach in DRR policy and practice.

1.2. Aim of the paper

There is a need to further explore DRR policy and practice from a community resilience perspective in a welfare state context. The aim of this case study is to:

- Deepen the understanding of how community resilience can be reached through increased public involvement.
- Explore the perception and attitudes among municipal actors and civil groups on the utility and challenges of involving the public in DRR action and how the needs of those groups considered most vulnerable are accounted for.

In order to reach the aim of the paper the following research questions were formulated:

- What are the attitudes among local actors on the benefits, barriers and opportunities of involving the public in DRR action?

- Which groups in society are considered most vulnerable and are the needs of these groups integrated in DRR action?

The geographical context of the study is the Swedish city of Örebro.

2. State of the Art

2.1 Theoretical approach

In this paper disaster risk is understood as:

> *The likelihood … of severe alterations in the normal functioning of a community or a society due to hazardous, physical events interacting with vulnerable social conditions, leading to, widespread adverse human, material, economic, or environmental, effects that require immediate emergency response to satisfy critical, human needs and that may require external support for recovery. (IPCC, 2014).*

Resilience is a concept with its origin in engineering, psychology and ecology (Alexander 2013) but increasingly used in order to adopt a systems approach within the research fields of DRR (UNISDR 2015; MSB 2013) climate change adaptation (CCA), and sustainable development (SD) the has been widely debated and criticized (Becker 2014; Folke et al. 2002; Davoudi et al. 2012; Twigg 2015; Berkes 2007; Hassel 2016; Sharifi 2016; Kais & Islam 2016). Despite the criticism, resilience is frequently used as a holistic way to look at a socio-ecological system's ability to prepare for, resist, respond to and transform in relation to stress and change (Becker 2014). Figure 1 presents a simplified framework of resilience in a DRR and CCA context.

Figure 1. Elements of disaster resilience
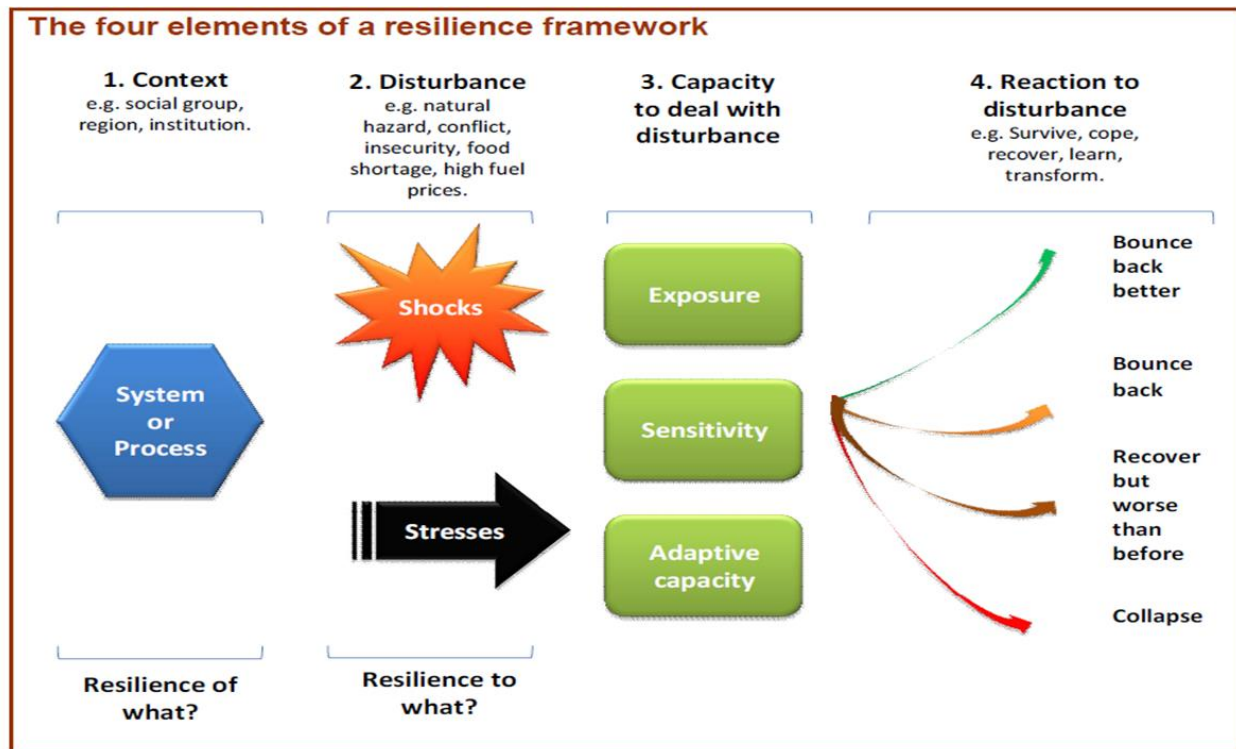
Source: DFID (2011).

The DRR resilience perspective handles aspects of vulnerability (labelled sensitivity in Figure 1.) but mainly focus on capacity-building and adaptation (Cutter et al. 2008). In this paper we define of vulnerability as:

> *The characteristics of a person or group … that influence their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard (an extreme natural event or process). (Blaikie et al. 2004, pp.11).*

and resilience as:

> *The ability of a system, community, or society … to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner including through the preservation and restoration of its essential basic structures and functions. (UNISDR 2015)*

The closely related concept of community resilience is widely used in the academic and policy literature. Yet the meanings of the term differ which adds to the difficulty to operationalize the concept (Patel et al. 2017). The definition of community resilience adopted in this paper is:

> *Community resilience is a process linking a network of adaptive capacities (resources with dynamic attributes) to adaptation after a disturbance or adversity (Norris et al. 2008, pp. 136)*

These definitions inform the analytical framework utilized in this study.

2.2. Analytical framework

The analytical framework is mainly based on Norris et al. (2008) interdisciplinary research and theory approach highlighting four different adaptation capacities (Figure 2. (a simplified version of Norris model)). These creates a strategy for disaster preparedness that can aid DRR decision-making, policy and practice. Here resilience is built on community resources and the dynamic properties of these resources, *robustness, redundancy* and *rapidity*.

Figure 2. Community resilience as a set of networked adaptive capacities.

Source: Norris et al. (2008).

Economic development consists of fairness of risk and vulnerability, level and diversity of economic resources and equity of resource distribution and community resilience is not only based on the volume of economic resources but also on its diversity. Poor communities are more vulnerable and have a lower degree of capacity to mobilize support after a disastrous event.

Social capital consists of received and perceived support, social embeddedness (informal ties), citizen participation, leadership and roles (formal ties), sense of "community" and attachment to place, and organization linkages and cooperation. The basic idea is that individuals invest, access, and use resources embedded in social networks to gain returns.

Community competence consists of community action, critical reflection and problem-solving skills, flexibility and creativity, collective efficacy and empowerment and political partnership. Central is the community´s ability to learn about risks, understand the choices they have and is able to work together in a flexible and creative way to solve problems. The capacity to access trusted and accurate information, to critically reflect and to solve problems is a lot more important for community competence than a detailed safety-plan that seldom is able to include all unforeseen events.

Communication and information consists of competence and communication infrastructure, responsible media, trusted sources of information and narratives. Information may be the primary resource in technical and organizational systems that enables adaptive performance and communication entails the creation of common meanings and understandings and the provision of opportunities to articulate needs, views, and attitudes.

The research on community resilience in Sweden is sparse and mainly uses a different terminology but studies on risk- and crisis management and governance connected to major climate related events incorporates community resilience dimensions (Guldåker 2016; Lidskog & Sjödin 2016; Guldåker 2009). Research from other countries shows that community level action helped to reduce risk and enhanced community resilience (McGee 2011; Buchecker et al.2013; Burnside & Carvalho 2016). Barriers found can be connected to lack of competence, fear of creating fear (Kjellgren 2013), process design and to which degree the state relinquishes responsibility to the public (Stark & Taylor 2014).

3. Methods

This study is a qualitative case study of disaster risk mitigation (Timmermans & Tavory 2012; Granskär & Höglund-Nielsen 2015; Merriam & Nilsson 1993; Yin 2013). The exploratory case study design allows for a combination of methods for data collection (Merrian & Nilsson 1993). In order to strengthen the validity of the study, municipal documents relevant from a DRR and community resilience perspective was included (Yin 2013).

3.1 Data selection

The city of Örebro has been identified as a particularly vulnerable area for floods (MSB 2018). Örebro is also a rapidly growing city (Örebro 2018b) and facing a range of societal safety challenges that comes with increased urbanization. We have interviewed key individuals working in the local council and in leading NGO roles. We used strategical selection combined with snowballing (Yin 2013). We interviewed three municipal actors (one safety coordinator, one person strategically working with human rights and one head of the fire department) and two NGO leaders (the Civil Defense Association and The Swedish Women´s Voluntary Organization).

3.2 Data collection and analyses

Data was collected through five semi-structured interviews and by studying municipal documents. Municipal documents studied focused on risk and crisis management, action plans, crisis communication plans, routines and policy on collaboration with civil society, citizen participation and sustainable development. The interview guide consisted of open-ended questions based on DRR and resilience theory and was thematically structured in order to capture aspects of community preparedness, response and recovery as well as aspects of vulnerability to disasters. The content analysis resulted in 5 main categories representing the views and thoughts of the respondents. The categories were derived from the data material through an iterative process. The community resilience framework guided the analysis of the data.

4. Case study description and context

The case-study was delimited to the local strategic and operational level where public engagement in DRR is likely to be initiated and supported. It was limited to climate-related risks identified in the risk and vulnerability assessment (RSA) conducted by Örebro municipality. The main climate related hazards identified in the RSA were: heatwaves, flooding and extreme precipitation (Örebro 2014).

The Swedish emergency preparedness system is built on the principle of *assigned responsibility.* This means that whoever is responsible for an activity in normal conditions should be responsible during an emergency. Cross-sector coordination between jurisdictional and territorial boundaries and levels of authority is important. National coordination is handled by MSB (MSB 2018). Swedish legislation, however, places main responsibility for DRR action on the municipality. Formal responsibility is also put on the individual to protect oneself, one´s property and environment from accidents. According to the law, all capable individuals from the age of 18-65 years are obliged to assist emergency services if needed (SFS 2003:778).

4.1 The context

The city of Örebro is a rapidly growing city situated in central Sweden with a population of 142 618 inhabitants (Jan 2015) living on 1380 km². 160 different nationalities are represented within the city and it has a large community of deaf people since Sweden's only high school for deaf and hearing impaired is situated in Örebro. Since 2018 the municipality is run by a coalition consisting of the Social Democrats, Center Party and Christian Democrats. The municipal organization is divided into three main areas: Children and Education, Planning and Community development and Social welfare (Örebro 2015a). Socioeconomic and ethnic segregation due to changes in welfare policy, increased cultural diversification and distribution of income, all negatively affecting social cohesion and there are great differences in level of perceived safety between different neighborhoods in Örebro (Örebro 2013).

There is high NGO activity in Sweden. The Civil Defence Association, Red Cross and The Swedish Women´s Voluntary Organization are some examples and these are represented in Örebro. MSB has given the Civil Defense Association the task to educate and administrate a local voluntary resource groups called Frivilliga Resursgruppen (FRG) as a resource directly available to the municipality during major events (Civilförsvarsförbundet 2018). Örebro municipality has an active FRG available.

5. Results

The result of the qualitative content analyses is presented in the Table 1 below. The 5 categories represent the respondent's views on involving the public in DRR that were manifest in the data material. Within all categories both opportunities and barriers were identified.

Table 1. Result of the content analysis – Categories and subcategories.

Categories	*Perceptions on vulnerability*	*Collaboration and networks*	*The public as a resource*	*Communication and information*	*Roles and responsibilities*
Sub-categories	Views on vulnerability	Access to information grounded in reality.	The capable public that wants to help out.	The need for dialogue in order to understand the needs.	The strategic role of the municipality versus the role of the civil society as a relief resource.
	Focus on risk-groups during a crisis.	Other actors important for recruitment and education of volunteers.	Both specific and broad knowledge within the voluntary organizations.	New technology for communication between authorities and the public.	Lack in knowledge of each other's roles and responsibilities
	The municipality takes care of the vulnerable	The need for a link between authorities and the public for information and understanding.	Poor utilization of the public as a resource in DRR	Information about risks for increased risk awareness and preparedness.	Clear roles creates safety for the public
	The "spoilt and naive" public.	The risk of corruption	The public is our greatest resource in the crisis management	Dialog with the public is a matter of democracy.	The municipality´s role in terms of leadership and support towards the public.
	The heterogeneous public	The mutual need for support between the authorities and the public.	The need for being able to deliver leadership and management of volunteers.	Need for knowledge about what level of capacity required among the public.	
		Problems with lack of continuity	Barriers for community capacity building	Fear of creating fear.	
		Building good relations and "greasing" the social systems.			

Category 1. Perceptions on vulnerability

This category can mainly be linked to *economic development* but with aspects related to all of the capacities were brought up by the respondents (respondents indicated by R below). The views on vulnerability in relation to extreme natural events is dominated by the traditional risk groups such as elderly, children, sick people and people with different disabilities. The general view is that the needs of these groups during a crisis are well known and met through the formal areas of responsibility of the

municipality (schools, health care, child care, elderly care etc.) (Örebro 2015b). Socioeconomic factors, psychological and physiological aspects of vulnerability are highlighted.

> *Groups that are most vulnerable even when it is not a crisis, people who have very tough economic conditions or who are already very heavily strained by stress and that are already performing at their maximum to make everyday life work, they do not have much left to draw from when something unexpected happens (R1)*

Another aspect of vulnerability was the difference between living in the city outside the city.

> *In the countryside you have more experience of managing extreme weather. If you live in the city the possibilities for taking individual proactive measures have somewhat been taken from you. It is the property owner, the council and so forth that are responsible. In that way you are more vulnerable living in the city (R1)*

The heterogeneity of the public and implications for assessing vulnerability is central. Cultural difference is perceived as a barrier for understanding individual needs and what to focus on during an emergency. The view upon newly arrived refugees show the complexity as this group was both considered the most vulnerable and the most resilient to extreme events among the respondents. Most vulnerable due to the level of socioeconomic, social and psychological vulnerability. Most resilient due to their experiences and apparent determination to make a better life for themselves and their families in Sweden. Barriers for involvement of this group were mainly language barriers and cultural barriers. Lack of trust towards authorities and its representatives was also seen as a barrier (R4). Gender was also an issue, women from ethnic minorities were considered more vulnerable than men due to cultural barriers, reduced ability to quickly evacuate (men are usually the car-owner) and women the ones taking care of children.

A different view on vulnerability, sometimes referred to as *the vulnerability paradox*, was brought up by several respondents. This was the view upon the public as "naïve and spoilt" and that this makes them vulnerable since they don't prepare themselves and expect the authorities to fully take care of them.

Category 2. Collaboration and networks

This category can be linked to both *community competence, social capital* and *information and communication*. All respondents mentioned the importance of building good relations between the general public, civil society and those working in the council in advance of an event as well as during a crisis, in order to build trust and to increase efficiency.

The mutual dependency between the public and the municipal organization is central when it comes to coping with major events. The weaknesses highlighted by previous experiences is acknowledged.

> *During past events we have seen that much remains to be done, above all, we could establish connections with civil society through associations and nonprofit organizations more, to have it as a link or "pipe" to the individual and that is something we work mainly on after the refugee situation in 2015 so we have started a more focused work in the municipality of Örebro, but maybe not as fast as we would like (R1).*

The ongoing work of strengthening the collaboration between the municipality and the civil society is also highlighted in the policy document available on the council website (Örebro 2008). Effective

collaboration for safety (Trygga Örebro 2018) is one initiative where public officials, the police, housing associations etc. meet on a weekly basis, to collect information about the situation "out there". The Partnership (Örebro 2018a) is another initiative fostering collaboration between civil society and authorities that has been successful in terms of building trust. These networks could also be used to access more timely and accurate information about how the public perceive local risks and needs (R3).

The need for collaboration between civil society and the municipality in order to recruit volunteers and to educate the public was also highlighted by the respondents. Örebro has a volunteer's resource group (FRG) and the Civil Defense Association has a representative present at municipal planning meetings and this indicates both capacity and will to collaborate in Örebro.

The respondents also identify barriers and potential risks in terms of collaborating more closely with the public. Lack of continuity impacts collaborative networks.

> *We have collaborated with different organizations over the years and this can good*
> *but after a while it falls down and that is too bad, and then it grows back again so*
> *it's a bit up and down, this is how it works (R4)*

Failed and meaningless collaborations can damage trust and relations and also lead to corruption.

> *The problem with frequent interaction is that it can result in close relationships and*
> *civil society should also be the ones who makes the municipality to be held*
> *accountable. If you push it a bit, it can end up in corruption (R3)*

Category 3. The public as a resource

This category links mainly to *social capital* and *community competence*. The public is viewed as an important resource in several ways: as a human resource during a crisis expressed as "arms and legs" and as psychological peer-support within the community and as an important source for information before, during and after an event. This indicates a predominantly positive view upon the public as capable and eager to help out during a crisis. At the same time a large number of spontaneous volunteers can be difficult to managed efficiently and this points toward the importance of leadership and clear roles during an emergency.

> *Volunteering is beneficial as you can free up excellence. A firefighter is supposed to*
> *put out fires and not go shopping. That's where volunteering comes in, to do*
> *maintenance work, fetch supplies, etc.(R2)*

Municipal actors are perceived as poor in utilizing the public and the civil sector during a crisis and there is a need of experienced leaders that quickly manage spontaneous volunteers. One respondent expressed a recent change in how the authorities view volunteers as a valuable resource.

> *We have changed our mind in recent years. You see volunteers as a resource, and*
> *you are also well aware that in some ways you must also allocate money before the*
> *crisis, in terms of equipment and such things, so it's gotten far better (R4)*

The knowledge and skills within the different NGO´s were considered an invaluable resource both in terms of increasing preparedness and during emergency response, but a lack of knowledge within the municipal organization is perceived as a problem by the NGOs, "They (municipal actors) barely knows

we exist" (R5). Despite this, the municipal documents argues that volunteer organizations and the voluntary resource group (FRG) are vital societal functions (Örebro 2015a).

Previous events are important for the level of preparedness of the public and the municipality. The relatively low frequency of extreme events in Örebro was considered to affect the ability to develop capacity and to reduce motivation to create preparedness. Lack of training was also considered a problem.

Respondents expressed a need for a "modernization" of emergency preparedness moving away from the traditional cold war model mainly based on past events. This makes us prepare for the known, with the risk of using resources inefficiently and lacking the broader perspective in relation to new potential risks often associated with climate change (Moloney, Fünfgeld & Granberg 2018).

Looking at individual homeowners that have learned from experiences and are prepared for an event like one that has happened before. They live in flood risk areas and know there may be a flood. But they are probably not prepared for unforeseen events, things that have not happened during their lifetime (R1)

Category 3. Communication and information.

Access to information and the ability to communicate is a common theme and generally considered important throughout the data material. The respondents address opportunities for communicating with the public through Internet and social media as well as problems associated with communicating through these channels with a public less knowledgeable than municipal staff about the complexity of society. When it comes to informing about risks, doubts were expressed about the amount of information to be conveyed in order to raise awareness before something happens. One respondent from the municipality expressed concern that risk information can cause an unwanted level of fear (R1). Problems with actually reaching those who are considered most vulnerable was also brought up, these individuals don't usually engage in dialogue with public actors.

One tool used for public dialogue is called "The civil dialogue". Open meetings initiated by the municipality are held where the public can express their opinions on plans etc. One respondent points out that this type of meeting can easily become a "masquerade" and not increase public influence. There is also a poor interest from the public to attend.

Information to the public on hazards and risks takes place through the RSA. The publicly available RSA is a way for the local council to be transparent and raise awareness of risks identified (Örebro 2015a). Information is also available on how to prepare before a crisis in order to be self-sufficient for 72 hours, links to government websites and short films with suggestions for the individual on how to increase emergency preparedness are available (in Swedish).

Category 5. Roles and responsibilities

This category links mainly to *social capital* and *community competence*. The respondents highlight the need for clear roles during a crisis. Clear roles give the public a sense of security and reduces unnecessary stress in those affected resulting in quicker recovery. The municipal role as a leader and supporter is important.

If you look at the part of the public who are able to rescue themselves or act when something happens the municipal role is to support their needs. If there is a need to

> *build sand walls to protect houses, we can either recommend where to get material*
> *or how to best construct a wall to protect their own property (R1)*

One suggestion is that his type of support could be more "hands on" in order to better capture public initiatives thus empower the public.

The public lacks awareness of who is responsible for what and of their own responsibilities of preparing for and responding to emergencies. This creates uncertainty and negatively affects preparedness.

> *Few people read the Act on Protection against Accidents. I am an instructor in the*
> *"72-hour" national preparedness campaign and I am really amazed about the lack of*
> *awareness every time I go through the individual's responsibility in a crisis situation*
> *(R2)*

6. Discussion

In order to mitigate risks, there is often a call for community resilience. Community resilience is built on community capacity, participation, social capacity, economic development and information and communication. Previous research suggests that local community initiatives have a positive impact on both preparedness, responsive capacity and recovery. Important aspects within theory of community resilience against disasters are public engagement for mitigating a community´s vulnerability and to increase adaptive capacity.

In line with Stark & Taylor (2014) who asked why there is so much rhetoric in support of public participation and "bottom-up approach" in DRR and CCA but so little action in terms of the day-to-day realities of policy implementation, this paper asks similar questions. The answer they found was based in state-centric governance settings which devolve authority, but do not relinquish it. The findings in this study also identify barriers to the "bottom-up" approach in DRR connected to traditional state-centric governance.

We also find that knowledge gaps regarding societal complexity and risks, poorly designed tools for public communication and lack of interest from the general public to participate are among the obstacles. The most common way of communicating with the public is by making information about risks and preparedness available. Trustworthy information is an important component of building community resilience but far from enough to build community resilience. The opportunities expressed by the respondents links to the resources in the theoretical framework. Increased networking with civil actors for building relations, recruiting volunteers and educating the public, increased "hands on" support from the municipality of public's initiatives could strengthen efficacy and promote empowerment. To use existing networks for *communication* about DRR issues between the public and the municipality and to use new technologies to gather *information* from the public could promote a meaningful *dialogue* and give access to rapid information about emerging hazards and stresses.

Municipal leaders need training in handling volunteers for a more effective utilization of this resource in order to free up professionals in crisis management. By creating stronger links between municipal actors and civil society this can both work as a channel to the individual to build trust and result in a more efficient use of available resources.

The barriers can be linked to the holistic perspective. The important questions of "who is vulnerable to what and at what time and what do we need to be resilient against needs to be asked?" if we aim towards community resilience. We need to identify all aspects of the community and also to understand the needs of its members. The heterogeneity of the public might be a big challenge but also a great asset. The results suggest that by involving the public the dynamic properties of social capital, information and communication and community competence can be utilized.

7. Conclusions

Sweden is an advanced welfare state where the basic needs of the people are met. The frequency and scale of natural disasters is low in comparison. Nevertheless, we live in an increasingly complex and everchanging society facing new risks characterized by high levels of uncertainty. Climate change is already putting stress on the socio-ecological system and there is a call for the "all-of society" governance approach.

Is the community resilience framework applicable in a Swedish context? This explorative study of the local level in Sweden suggests that it could be. The views and attitudes of the practitioners in many ways reflect community resilience thinking even if the term resilience is seldom used. The framework could help actors to ask new questions and open up new ways of collaboration between municipalities, civil society and other actors as it helps to identify opportunities of initiating and exploiting existing networks and resources in order to involve the broader public. It helps to identify areas in need of attention in order to support the dynamics of the existing resources present in the community.

To build good relations, maintain continuity in networks and to reach fairness in risk and vulnerability is an ongoing societal challenge. Even if the relatively low frequency of climate related disasters today makes the community less inclined to take precautionary measures it gives us the time to "grease the system" and mitigate vulnerability.

Conflict of Interest

The authors declare no conflict of interest.

References

Alexander, D. E. Resilience and disaster risk reduction: an etymological journey. *Natural hazards and earth system sciences*, **2013**, 13(11), 2707-2716.

Bach, R. Strategies for Supporting Community Resilience: Multinational Experiences. FHS, Stockholm, Sweden, **2015**.

Becker, P. Sustainability science: managing risk and resilience for sustainable development, Elsevier, Amsterdam, **2014**.

Berkes, F. Understanding uncertainty and reducing vulnerability: lessons from resilience thinking. *Natural Hazards* **2007**, 41(2), 283-295.

Blaikie, P.; Cannon, T.; Davis, I.; Wisner, B. *At risk: natural hazards, people's vulnerability and disasters.* 2nd ed.; Routledge, New York, **2004**.

Buchecker, M., Menzel, S., & Home, R. How much does participatory flood management contribute to stakeholders' social capacity building? *Natural Hazards and Earth System Sciences* **2013** 13(6), 1427-1444.

Burnside-Lawry, J., & Carvalho, L., A stakeholder approach to building community resilience: awareness to implementation. *International Journal of Disaster Resilience in the Built Environment* **2016**, 7(1), 4-25.

Civilförsvarsförbundet., https://www.civil.se/ Solna, **2018**.

Cutter, S. L., et al., A place-based model for understanding community resilience to natural disasters. *Global Environmental Change* **2008**, 18(4), 598-606.

Davoudi, S., et al., Resilience: a bridging concept or a dead end. *Planning Theory & Practice* **2012**, 13(2), 299-333.

DFID, Department for International Development, Defining disaster resilience: A DFID approach paper **2011**.

Folke, C., et al., Resilience and sustainable development: building adaptive capacity in a world of transformations. *AMBIO* **2002**, 31(5), 437-440.

Gaillard, J. C. & Mercer, J., From knowledge to action: Bridging gaps in disaster risk reduction. *Progress in Human Geography* **2013**, 37(1), 93-114.

Granskär, M. & Höglund-Nielsen, B., Tillämpad kvalitativ forskning inom hälso-och sjukvård. Studentlitteratur, Lund, **2012**.

Guldåker, N., *Krishantering, hushåll och Stormen Gudrun.* Lunds univeristet, Lund, **2009**.

Guldåker, N., Hushålls hantering av stormen Gudrun. *Katastrofriskreducering* **2016**, 191-220.

Hassel, H., Att mäta samhällelig resiliens. *CenCIP Professional Papers* **2016**, *2*, 1-6.

Haworth, B., & Bruce, E. (2015). A review of volunteered geographic information for disaster management. Geography Compass, 9(5), 237-250.

IPCC., *Climate Change 2014: Impacts, Adaptation, and Vulnerability*. Cambridge University Press, Cambridge, **2014**.

Kais, S. H. & Islam, S. Community Capitals as Community Resilience to Climate Change. *International Journal of Environmental Reserach and Public Health* **2016**, 13(2), 1211.

Kjellgren, S. Exploring local risk managers' use of flood hazard maps for risk communication purposes in Baden-Wurttemberg. *Natural Hazards and Earth System Sciences* **2013**, 13(7), 1857.

Lidskog, R., & Sjödin, D., Extreme events and climate change. *Scandinavian Journal of Forest Research* **2016**, *31*(2), 148-155.

McGee, T. K. Public engagement in neighborhood level wildfire mitigation and preparedness. *Journal of Environmental Management* **2011**, 92(10), 2524-2532.

Merriam, S. B., & Nilsson, B., Fallstudien som forskningsmetod. Studentlitteratur, Lund, **1994**.

Moloney, S., Fünfgeld, H. & Granberg, M., Climate change responses from the global to local scale. In: *Local Action on Climate Change*. Moloney, S., Fünfgeld, H. & Granberg, M., eds.. Routledge, London, **2018**.

MSB., *Resiliens: Begreppets olika betydelser och användningsområden*. MSB, Karlstad, **2013**.

MSB., Nationell risk och förmågebedömning – 2017. MSB, Karlstad, **2017**.

MSB., Översyn av områden med betydande översvämningsrisk. MSB, Karlstad, **2018**.

Norris, F. H., Stevens, S. P., Pfefferbaum, B., Wyche, K. F., & Pfefferbaum, R. L. Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *American Journal of Community Psychology* **2008**, 41(1-2), 127-150.

Örebro., Policy för Örebro kommuns samverkan med det civila samhälle. Örebro municipality, **2018**.

Örebro., Riktlinjer för kriskommunikation Örebro kommun. Örebro municipality, **2011**.

Örebro., Hållbar utveckling i Örebro kommun. Örebro municipality, **2013**.

Örebro., Risk och sårbarhetsanalys för Örebro kommun 2015-2019. Örebro municipality, **2015a**.

Örebro., Central krisledningsplan för Örebro kommun. Örebro municipality, **2015b**.

Örebro., Partnerskapet Örebro. Örebro municipality, **2018a**.

Örebro., En växande kommun med nya möjligheter. Örebro municipality, **201**8b.

Patel, S. S., Rogers, M. B., Amlôt, R., & Rubin, G. J. What do we mean by community resilience'? A systematic literature review of how it is defined in the literature. *PLoS Currents* **2017**, 9.

Scolobig, A., Prior, T., Schröter, D., Jörin, J., & Patt, A., Towards people-centered approaches for effective disaster risk management: Balancing rhetoric with reality. *International Journal of Disaster Risk Reduction* **2015**, 12, 202-212.

SFS 2003:778. Lag om skydd mot olyckor. Stockholm: Justitiedepartementet.

Sharifi, A. A critical review of selected tools for assessing community resilience. *Ecological Indicators* **2016**, 69, 629-647.

SOU 2007:60 Sverige inför klimatförändringarna: hot och möjligheter.

Stark, A., & Taylor, M. Citizen participation, community resilience and crisis-management policy. *Australian Journal of Political Science* **2014**, 49(2), 300-315.

Timmermans, S. & Tavory, I., Theory construction in qualitative research: From grounded theory to abductive analysis. *Sociological Theory* **2012**, 30(3), 167-186.

Trygga Örebro., Effektiv samordning för trygghet. Örebro, **2018**

Twigg, J., *Disaster risk reduction*. Overseas Development Institute, London, **2015**.

UNISDR., Hyogo Framework for Action 2005–2015: Building the Resilience of Nations and Communities to Disasters. Extract from the final report of the World Conference on Disaster Reduction (A/CONF.206/6). UNISDR, Geneva, **2007**.

UNISDR., Sendai framework for disaster risk reduction 2015–2030. UNISDR, Geneva, **2015**
Yin, R. K., *Kvalitativ forskning från start till mål*. Studentlitteratur, Lund, 2013.