

## AN ANALYSIS OF ASSISTANCE NEEDS DURING THE STORM GUDRUN

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### **Keywords**

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### **Abstract**

We take as our starting point the view that one of the main objectives of an emergency response operation is to meet the assistance needs that arise in the affected population during an emergency. In Sweden, like in most of the world, there has been a substantial increase in societal emergency preparedness activities during the last few years. At the local level, municipalities are required by legislation to make preparations for the management of emergencies and crises that could affect the area. Furthermore, it is required that such preparations be based on thorough risk and vulnerability analysis. We argue that identifying and describing the potential assistance needs that may arise in different emergencies should be a key ingredient in such risk and vulnerability analysis work. One important source of information regarding this matter is the study of past emergencies.

On the 8th of January 2005 the south of Sweden was hit by a major storm, Gudrun, with long lasting gusts of hurricane strength. Trees corresponding to more than 75,000,000 cubic meters of wood were blown down, and a total of 341,000 homes lost power during the storm. In the municipality of Ljungby, the effects were severe in terms of loss of utilities such as electricity and telecommunications, infrastructure breakdowns that lasted for several weeks after the storm. This situation gave rise to a variety of assistance needs among the affected population. The objective of this paper is to evaluate a constructed categorisation of assistance needs against empirical findings from the response to the storm Gudrun in the municipality of Ljungby and discuss some implications for societal preparedness activities. The work is based on an analysis of interviews

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with mainly municipal actors of central importance during the response and of written documents describing experiences during and after the storm.

## **Introduction**

During the last few years there has been a substantial increase in societal emergency preparedness activities. In Sweden, new legislation has been issued within this field. A guiding principle in Sweden is that emergencies should be handled at the lowest possible administrative level, a notion that is also common in the crisis management literature, see for instance Boin et al. (2003), Perry and Lindell (2003) and Alexander (2005). Thus, municipalities have a wide responsibility during an emergency, generating a need for each municipality to establish an emergency management system. The need for municipalities to improve preparedness for emergency response has led to a development of new approaches for emergency preparedness. These approaches are often based on risk and vulnerability analysis. One important source of information is studying past emergencies. In this paper, the study of one such event, with focus on generated assistance needs, is presented.

On the 8th of January 2005 the south of Sweden was hit by a storm called Gudrun. During a few hours trees corresponding to more than 75 million cubic meters of wood were blown down resulting in several difficult problems for the area (SEMA, 2005). The municipality of Ljungby was the municipality most affected by this storm. For several weeks, extensive parts of the municipality lacked utilities such as electricity and telecommunications. The larger roads in the municipality were passable a couple of days after the storm and after a week most of the roads were functioning. This situation gave rise to a variety of assistance needs among the affected population.

We take as a starting point the view that one of the main objectives of an emergency response operation is to meet the assistance needs that arise in the affected population during an emergency. It is thus interesting to develop an approach for generating input to emergency preparedness that is based on an analysis of such potential needs. As a first step towards such an approach, a categorisation of assistance needs has been established by the authors. The purpose is that this categorisation can be of help during preparedness activities (see for instance Abrahamsson et al., Submitted to TIEMS 2007). The objective of this article is to evaluate the categorisation against empirical findings from the response to the storm Gudrun in Ljungby.

## **Theory and Method**

### Theory

Several authors argue that preparedness is an important part of emergency and crisis management and essential for emergency response (e.g. McEntire and Myers, 2004). At the same time planning is a very difficult task due to the complexity of any emergency situation. McConnell and Drennan (2006) raise the question whether planning and preparing are achievable tasks. They point out that at the same time as emergencies may have a high impact they are low probability events, making it difficult to motivate planning and preparedness activities. An additional problem is the competition over resources with other areas such as health and education. Another problem is the tension between a need for a coordinated planning and the reality with institutional and organisational fragmentation. McConnell and Drennan (2006) conclude that preparedness is not impossible but very difficult to accomplish.

In our point of view, shared by many emergency and crisis management scholars, emergencies are in essence about people. For instance, Enander (2007 forthcoming) argues that a significant part of the emergency response operation is to assist the affected individuals to cope with their own situation. Buckle (1998) means that planning, instead of being based on an administrative perspective of which services that can be provided, should be driven by the populations needs. Similar thoughts, i.e. that the need for assistance in the affected population should be the basis

during the response of an emergency are presented in Fredholm (2007 forthcoming). According to this view, one major goal of emergency management is to provide service to meet these needs during an emergency. An important part of emergency preparedness and response is therefore to identify the most adequate way to meet these needs (Buckle, 1998) and which services that are required to achieve this (Buckle et al., 2000). Due to the often complex situation it is not always possible to meet all needs that may arise in an emergency. Furthermore, it is not always society's task or responsibility to do so. The affected individuals also have a responsibility in this work. The response organisations have to find ways to prioritize between the different needs that arise in the population (Fredholm, 2007 forthcoming).

Fredholm (2007 forthcoming) has made a general categorisation of what he refers to as assistance needs into five need domains: "protection of life and health", "protection of property", "protection of the environment", "life and function support" and "recovery". This categorisation is based on a focus on accidents. In Fredholm (2003), with a broader scope in terms of emergencies considered, an additional domain is used, namely "protection of democratic values".

A new categorisation of assistance needs including six need domains has been made, heavily influenced by the two publications by Fredholm mentioned above. In this categorisation an additional domain, "psychosocial support"<sup>4</sup>, has been introduced due to the focus on such issues in past emergencies such as the discotheque fire in Göteborg in 1998 (Nieminen Kristofersson, 2002) and the Indian Ocean tsunami in 2004 (Nieminen Kristofersson, forthcoming). Furthermore the need domains "protection of property" and "the environment" have been merged. The six domains of assistance needs used in this study are:

- Protection of life and health
- Psychosocial support
- Life and function support
- Protection of the environment and property
- Protection of democratic values
- Recovery

### Method

A study of what kind of assistance needs emerged among the affected population during the storm Gudrun was carried out in the municipality of Ljungby. This was carried out using the categorisation of assistance needs described above.

Actors of central importance during the response to Gudrun in the municipality of Ljungby were interviewed using semi-structured queries. The fire chief, who took a leading role in the response, assisted in selecting the interviewees. This led to a selection of representatives from each administrative unit of the municipality that was considered central during the response i.e. social services, environmental services, technical services and the municipal administration. In addition one actor, a police officer, from outside the municipal organisation was selected for interview.

The interviews were transcribed and the interviewees had the possibility to read and comment on the material before use. In addition to the interviews, written documents describing and evaluating the response were also collected and analysed. The information obtained consisted mainly of descriptions of different measures taken to manage the situation, and not explicitly of what kinds of assistance need that emerged. Therefore, an effort was made to interpret which assistance needs the identified management strategies corresponded to. The identified assistance needs were then categorised in accordance with the six need domains described above.

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<sup>4</sup> In the two publications by Fredholm referred to above, "psychosocial support" was included in the category "life and function support".

## Results

In this section a description of the results, in terms of identified actions and management strategies, the interpretation into corresponding assistance needs and categorisation in accordance with the different domains of assistance needs described above, is given. The presentation follows the structure of the categorisation.

### Protection of life and health

During an emergency there is a need to protect life and health of the threatened population both in relation to the physical course of the event and the consequences of it. Since there are, for obvious reasons, very little one can do to reduce the strength of a storm, the focus during and after Gudrun was on handling the consequences.

One consequence of the event was that due to all fallen trees a lot of people outside the city were trapped at home. The loss of utilities such as usable roads and telephones made it impossible to reach those affected. Neither relatives nor authority could get in contact with them to see if they were unharmed. Due to the uncertainty regarding whether people were hurt, the municipality initially focused on the clearing of roads. In addition, motorcycles were used to make passage easier. An interpretation of these actions is that they were carried out in order to be able to gain information on whether people were unharmed, and further to make sure that emergency transports were possible if needed. This need can be categorised as “protection of life and health”, at least in the first phase of the aftermath of the storm. The actions taken could also be interpreted to meet the citizens’ need for passable roads, which could be categorised under “life and function support”.

An additional identified task, mainly for the police, was to search for missing people in the forests. The fallen and uprooted trees made the woods a dangerous place to be. It was also easy to get lost because of the changes in the landscape due to all fallen trees. This task can be seen as a strategy to meet the need for search and rescue which can be categorised as “protection of life and health”.

As a result of the storm many people had no possibility to heat their houses due to the loss of electric power. Due to this problem the municipality established a readiness to evacuate all these people if the temperature should reach the freezing point. An interpretation of this readiness to evacuate is that it was done to meet the affected populations’ need of a warm place to live which can be categorised as “protection of life and health”. It could be argued that the issue of not being able to heat one’s house is not necessarily a question of life and health, even in cold temperatures. Thus the readiness to evacuate could also correspond to a need that could be categorised under “life and function support”.

The loss of communication utilities made it difficult or even impossible to get in contact with e.g. fire brigade or the medical service in case of emergency. To facilitate the inhabitants’ possibility to get help when needed, people were positioned out with communication radios in cars at a number of strategic places. The loss of telecommunications also affected the emergency alarm many elderly had installed in their homes. These alarms are connected to and thus dependent on the wired telephone network. Therefore, as soon as the mobile net became operational the municipality started to lend out mobile telephones to elderly to use in case of emergency. These actions taken to make it possible for the affected population to get help when needed can be categorised as “protection of life and health”. They can also be seen as a way to meet the need of the population to feel secure, which could be categorised as “psychosocial support”.

### Psychosocial support

The falling of trees corresponding to millions of cubic meters of wood resulted in high economic losses for the forest owners. Over night many people lost most of their life’s work. The additional loss of electric power also led to problems for farmers with large animal stands. To support these people the municipality made arrangements so that the military’s emergency teams could be used.

These teams visited both farmers and elderly that were assessed to be in greatest need of such support. The municipality also arranged for an emergency team to be available at the fire station, and for a team of social workers at the social welfare office. Furthermore, the church established a telephone number for psychological support. To always be contactable they used a mobile telephone that circulated between different clergymen. An interpretation of the use of the emergency teams, social workers and the possibility to get in contact with representatives from the church was that this was done to meet the need for support related to both grief over losses and anxiety for the future. This can be categorised as “psychosocial support”.

### Life and function support

As a result of the consequences of the storm the municipality evacuated some elderly that did not manage to live at home to municipal homes for the elderly and also, because of shortage of room, to empty hospital beds. Elderly that were considered to be able to stay at home were assisted in getting food, water and wood etc. Other people in need were given the possibility to temporarily stay in for instance schools with functioning utilities. Furthermore, financial aid was arranged for people with strained economy that had been affected by the consequences of the storm. These actions can be seen as a way to meet basic needs such as food, water and warmth and can be categorised as “life and function support”.

Most of the technical infrastructures such as roads, water distribution system, sewer system, telephones, mobile telephones and the electric power grid, were severely affected by the storm. Both municipal and other actors responsible for different infrastructures were engaged in restoring these utilities, often using temporary solutions. This work is interpreted as a way to meet the need to support the inhabitants’ daily life and can be categorised as “life and function support”.

As mentioned above, the loss of electric power gave rise to problems for many people, for instance regarding the heating of houses. Another example is that farmers were experiencing problems since this loss affected for instance the equipment used to milk cows and to provide the animals with water. The municipality therefore arranged for the distribution of hundreds of mobile power generators and heaters to people in need. This arrangement can be seen as a way to meet the need for electric power and can be categorised as “life and function support”.

The effects of the storm also resulted in problems regarding fresh water distribution. Many households, especially in the countryside, used electric water pumps which did not work during the electric blackout. The municipality therefore provided drinking water by placing water tanks in strategic places. In addition, washing and shower possibilities were arranged for. By contacting different apartment buildings in the town, where utilities such as electric power, heating etc. were functional, and different sports clubs the municipality managed to arrange for laundry rooms for the public to use. Furthermore, the municipality’s indoor swimming pool was held open free of charge. These actions can be seen as an attempt from the municipality to meet the need for fresh water and hygienic facilities and can be categorised as “life and function support”.

The effects of the storm also affected important societal functions such as the fire brigade, the police, home care and the schools. For instance, to ensure that the fire brigade would manage to handle incidents not related to the storm, they always had a backup team ready. To be able to pursue school activities, even though the normal classrooms in some cases were unusable, the municipality arranged alternative classrooms with functioning utilities in the town three days after the storm when most of the big roads were open again. Children that lived in the countryside, approximately 600 people, were picked up by buss and driven to the alternative school accommodations. This can be seen as different handling strategies to meet the inhabitants’ need for important societal functions and can be categorised as “life and function support”.

Attempts to inform the public on important matters regarding the handling of the consequences of the storm were made by sending out information with the postal services, in newspapers, leaflets and radio (as these communication routes became functional). Another approach was the arrangement of about fifty information meetings to inform about what was being done and to ask

for the citizens' opinions. This was done twice a week during five weeks. The meetings were held in different villages in the municipality. At every occasion one politician and one official from the municipal organisation participated. At some of the meetings also other actors such as representatives from the electric power company participated. An interpretation of these actions is that they were directed towards the need for information and can be categorised under "life and function support". The information meetings could be interpreted also as a way to meet the need for information in order to alleviate anxiety and could thus also be categorised under "psychosocial support".

#### Protection of the environment and property

Since several people had to temporarily move from their houses there were worries that this would increase the risk of burglary. To increase the level of security the police therefore called in extra staff to help guarding the municipality. One important task for the police was to be visible and thus increase the inhabitants feeling of security. This can be seen as a way to meet the affected populations need for protection of property and can be classified as "protection of the environment and property".

#### Protection of democratic values

The information meetings that the municipality arranged can also be seen as a way to meet the need for democracy and thus also be categorised as "protection of democratic values"

#### Recovery

The effects of the storm included severe damage to many important technical infrastructures. As mentioned above, many of these were temporarily repaired using alternative solutions in order to be able to provide at least part of the normal function. Restoring these infrastructures to their normal status is a work that is still ongoing. This can be seen as a way to meet the affected populations need for technical utilities and can be categorised as "recovery".

Furthermore, the storm Gudrun destroyed a lot of people's life's work. For some, this resulted in a need for long-term psychological support. This need can be categorised as "recovery".

### **Discussion**

In summary, the storm Gudrun gave rise to a wide range of assistance needs in the affected population in the municipality of Ljungby, and various measures were taken by the municipality and other actors in order to meet these needs. In this section, the approach to generating input to emergency preparedness planning, based on identification and categorisation of assistance needs described in this paper, is discussed.

One objective of this study was to evaluate the usability of the theoretically derived categorisation of assistance needs through analysing emerged assistance needs in a real life event. The empirical results suggest that the categorisation provides a suitable platform for classifying assistance needs even though further developments may be needed. For instance, the approach would have to be applied to studies of various kinds of emergency and crisis situations in order to make statements regarding general applicability possible. In addition, the interviewees were deliberately mainly municipal officials, i.e. actors in different ways responsible for the management of unwanted events. Complementing studies on how the affected population experienced their assistance needs should be undertaken in order to be able to evaluate the general usability of the categorisation, and further to investigate potential discrepancies between information obtained from emergency management actors and that obtained from affected individuals. Such discrepancies have been shown in the literature, e.g. Nieminen Kristofersson (2002). Furthermore, the identified actions and management strategies could sometimes be interpreted to meet several different needs which in turn could be categorised in more than one category. In our point of view this is not a major problem since our aim was to categorise the assistance needs and not the actions taken. However,

in future studies it might be wise to try to identify the assistance needs directly, and not interpreted through the actions taken.

The changes in the categorisation of assistance needs in relation to the ones given by Fredholm (2003; 2007 forthcoming), seems to have worked out well, at least for this specific type of event. The major change was the introduction of the additional domain “psychosocial support”, which was included in “life and function support” in the references by Fredholm above. As in the case of past emergencies such as the discotheque fire in Göteborg 1998 referred to above, the need for psychosocial support in the aftermath of the storm Gudrun was substantial, which motivates treating “psychosocial support” as a domain of its own. Furthermore, we found that this sort of need was to large extent handled by another organisation than other needs classified under “life and function support”.

We argue that despite the need for further developments, the suggested categorisation of assistance needs could serve as a checklist both in emergency preparedness planning, see for instance (Abrahamsson et al, submitted to TIEMS 2007), and in the actual management of an ongoing event. This means for instance that in preparedness activities it is possible to make preparations for management strategies that correspond to the broad spectrum of assistance needs implicated by the categories. During the management of an ongoing emergency the categories could be used as “food for thought” in order not to neglect any important assistance needs.

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