

Crisis Communication during Veldfires

*- A Study of the Communication between the
different Stakeholders in the Dr. Kenneth
Kaunda District Municipality, South Africa.*

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Abstract: Veldfires occur as seasonal events in South Africa. During veldfires, the relationship between the fire actors and the affected population is important to the crisis communication. In the Dr. Kenneth Kaunda District Municipality there are primarily three fire actors: the fire brigade, the Fire Protection Association (FPA) and Working on Fire (WoF). The aim of the study is to explore the communication between the different stakeholders during veldfires. Semi-structured interviews were performed with fire actors and farmers. The interviews were transcribed, coded and categorized according to the research questions. The results indicate that the communication performed by the FPA adheres to the needs of the affected population while the communication performed by fire brigade does not meet the needs. The communication within the FPA is believed to be successful due to the fact that it is performed as dialogical two-way communication. The communication between the different stakeholders is affected negatively by the stakeholders' preferences of communicating in different languages. Already established networks, such as the one created by the FPA, have proven to be highly beneficial when veldfires occur. The study focuses on the Dr. Kenneth Kaunda District Municipality but the results may be beneficial to stakeholders in other locations as well.

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SUMMARY

Veldfires are yearly events affecting life, property and environment in South Africa. When the affected population requires assistance the relationship with authorities and organizations becomes very important. The need for information escalates rapidly and communication has to be a focal point in the crisis management. South Africa has a number of different racial groups and eleven official languages which adds another level to the crisis communication challenge. The more diverse a society is, the more difficult it is to meet the needs of the affected population.

In the Dr. Kenneth Kaunda District Municipality veldfire management is performed by three organizations: the fire brigade, the Fire Protection Association (FPA) and Working on Fire (WoF). The study primarily explores the communication between the fire actors and the farmers during veldfires. The aim of the study is to describe the communication between the different stakeholders during veldfires and investigate if the fire actors' communication meet the needs of the affected population. The study also aims to explore how language and already established networks influence crisis communication.

The project started with formulating the research questions followed by a literature study. The literature study was performed to gain basic knowledge about crisis communication and how it is influenced by factors such as trust, language and already established networks. The literature study was followed by a field study and interviews were conducted with farmers and fire actors. The interviews were performed as semi-structured interviews where knowledge is developed through conversation. The recordings from the interviews were transcribed and the text files were coded and categorized into groups relating to central parts of the research questions.

The study indicates that the needs of the affected population are adhered to by the FPA while the communication performed by the fire brigade does not meet the needs. One of the main reasons that the communication between the affected population and the FPA is successful is the fact that it is performed as dialogical two-way communication. Another beneficial factor is that the FPA-officials also own farms and share many similarities with the affected population, which makes it easier to relate and communicate.

The communication between the different stakeholders is affected negatively by the stakeholders' preferences of communicating in different languages. Both the farmers and the fire actors express that they do not feel comfortable communicating in a language they do not fully master in stressful situations.

Already established networks, such as the one created by the FPA, have proven to be highly beneficial when veldfires occur. The crisis communication can be initiated faster when the communication paths are already established and the farmers know how to act and whom to contact.

The factors causing difficulties in crisis communication are related to each other and the context in which they occur. The results from the study focus on the Dr. Kenneth Kaunda District municipality but they could be beneficial to other stakeholders and other locations with some adaption to the specific context in which they are applied.

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TERMINOLOGY

Bakkie sakkie	A water tank (250-600 litres) and a pump which can be placed on the back of a bakkie (truck) for firefighting purposes. (Teie, 2009:570)
Dr. KKDM	Dr. Kenneth Kaunda District Municipality, see section 3.1.3.
Fire actors	Organizations involved with veldfire extinction. In this case: the fire brigade, the Fire Protection Association and Working on Fire.
Firebreak	<i>“A natural or constructed barrier utilized to stop or check fires, or to provide a control line from which to work”.</i> (Teie, 2009:575)
FPA	Fire Protection Association, see section 3.2.2.
LIMA-station	An expression related to the two-way radio communication symbolizing the area manager in the FPA, see Appendix A.
OSCAR-station	An expression related to the two-way radio communication symbolizing a farmer in the FPA, see Appendix A.
The Act	The National Veld and Forest Fire Act No. 101 of 1998.
Veldfire	A fire burning in natural vegetation. (Teie, 2009:586) Also called wildfire or forest fire.
Ward	Farmers within a certain area create a ward. The Potchefstroom FPA consists of seven wards.
WHISKY-Station	An expression related to the two-way radio communication symbolizing a ward manager in the FPA, see Appendix A.
WoF	Working on Fire, see section 3.2.3.

If you talk to a man in a language he understands, that goes to his head. If you talk to him in his language, that goes to his heart.

- Nelson Mandela

1. INTRODUCTION

In the introduction a short background to the study is presented followed by the limitations of the study. The research questions which the study aims to answer are specified. The chapter ends with ethical considerations and an outline of the disposition of the report.

1.1 Background

In South Africa, fire is widely used for cooking and heating but also for clearing agricultural land and stimulating grass growth. Increased human pressure on the land and widespread land transformation, together with uncontrolled burning, displays a trend of more fires in the future. (Goldhammer & de Ronde, 2004)

Veldfires are yearly events affecting life, property and environment (DWAF, 2005). When a veldfire occurs, the need for information among the affected population escalates rapidly. Information about what is going on, what the authorities are doing and what they are expected to do themselves, is requested. (Falkheimer et al, 2009)

According to Larsson (2008), the relationship with authorities and organizations becomes very important when the affected population requires assistance. To meet the needs of the affected population, communication has to be a focal point (Enander, 2010). The dynamic country of South Africa has a number of different racial groups and eleven official languages, which adds another level to the crisis communication challenge (GCISa, 2012). Wester (2009) claims that the more diverse a society is, the more difficult it is to meet the needs of the affected population.

Veldfire management in the Dr. Kenneth Kaunda District Municipality (Dr. KKDM) performed by three fire actors: the fire brigade, the Fire Protection Association (FPA) and Working on Fire (WoF). This study primarily focuses on the communication between the fire actors and the farmers. The communication between the different fire actors will also be mentioned, as it is believed to affect the communication with the farmers, but it is not the main focus of the study.

The larger veldfires in the study area can be described as crises according to the definition presented in section 2.1 by Flodin (1993) and Jarlbro (1993). Smaller fires, only affecting a couple of farms, will normally not be *“relevant to the society and/or many people”* as expressed in the definition of crisis (Flodin, 1993:9; Jarlbro, 1993:7). Nevertheless, the principles of crisis communication presented in this report are still seen as beneficial to adhere to even when smaller fires occur.

The aim of the study is to describe the communication between the different stakeholders during veldfires and investigate if the fire actors' communication meets the needs of the affected population. The study also aims to explore how language and already established networks influence crisis communication.

1.1.1 The veldfires in the Dr. Kenneth Kaunda District Municipality August 23, 2011

Dr. KKDM experienced intense veldfires the 23rd of August 2011. High winds and dry lands made it the most devastating fires in the recorded history of the area. (Van Niekerk & Coetzee, 2011) Those fires, along with other veldfire incidents in the area, create the background to why the research is performed. This report is a general study of communication during veldfires in the Dr. KKDM and not only limited to the veldfires in August 2011. Below, the veldfires in August 2011 are presented.

1. INTRODUCTION

The first known sighting of the fires was reported at 09:40 AM near the Kraalkop Game Reserve/Danie Theron Monument area. The wind direction was north-northwesterly (NNW), which spread the fires towards the eastern boundary of the Tlokwe Local Municipality. Due to the speed and the direction of the wind, the fires spread quickly and additional resources were required. A helicopter was sent to the area as well as a spotter plane with an incident command team. This far, the Tlokwe Local Municipality had not been affected by the fires but the northeastern boundary of the municipality was in immediate danger. (Van Niekerk & Coetzee, 2011)

By using a satellite system, veldfires were identified in the north of Potchefstroom at 12:00 PM and the Potchefstroom Fire Protection Association (PFPA) was alerted. Due to the speed and the intensity of the fires, the resources of the municipality were quickly exhausted and when another fire was reported in the south of Potchefstroom at 02:26 PM, no resources were available. In total there were thirteen fires raging in the Tlokwe Local Municipality at the same time that day and due to a lack of resources the fires were out of control. What appears to have caused the fires were sparks from Eskom power lines in combination with high winds. (Van Niekerk & Coetzee, 2011)

1.2 Research questions

The study aims to answer the following research questions:

- Which channels for communication and communication paths are used during veldfires in the Dr. Kenneth Kaunda District Municipality?
- Does the communication during veldfires, performed by the fire actors in the Dr. Kenneth Kaunda District Municipality, meet the needs of the affected population?
- How does language influence crisis communication during veldfires in the Dr. Kenneth Kaunda District Municipality?
- How do already established networks influence crisis communication during veldfires in the Dr. Kenneth Kaunda District Municipality?

1.3 Limitations

The study is based on fourteen interviews with a total number of twenty seven participants. The number of interviews performed in the study should be taken into account when the results and the conclusions are studied. Additional interviews could possibly have made the results stronger but due to the time available for the study the amount of interviews had to be limited. The interviews performed are still believed to give a good insight into the situation in the study area.

Representatives from Working on Fire (WoF) were not available for interviews at the time of the study. The person who had been responsible for WoF in the study area during the veldfires in August 2011 was no longer in service and other officials were contacted without results. Their participation would have been greatly appreciated. The information about WoF has been gained from an interview with two FPA-representatives who have been involved with teams from WoF in their roles as FPA-representatives and farmers.

The study focuses on the Dr. Kenneth Kaunda District Municipality and the results might not be directly applicable to other locations in South Africa or other parts of the world.

1.4 Ethical considerations

All participants were informed about the study through an informational letter distributed before the interview started. Everyone had the right to choose not to participate or terminate the interview at any time.

In a country with a history like South Africa skin colour and racial categorisation are particularly sensitive matters. In statistics produced today, the terms *African* and *Coloured* are used to describe those who were before labelled as *Black*. A difficulty with using the term *African* is that nowadays there are people who would in the past have been classified as *White* or *Coloured* who describe themselves as *African*, referring to their roots in the African continent. (Bray et al, 2010) In this report the vocabulary *African*, *Coloured* and *White* will be used. Those individuals earlier described as white, now describing themselves as African, are not included in the term *African* in this report.

1.5 Disposition

This report begins with an introduction where the background of the study is presented as well as research questions and limitations. The second chapter presents the theoretical background including a presentation of the main terms as well as an introduction to how crisis communication is best performed. In the third chapter the study context is described, which includes the location of the study, the fire actors and the affected population. The fourth chapter presents the research design and methods used in the study: qualitative research design and semi-structured interviews. The results from the study are presented in the fifth chapter, as well as some analysis. The sixth and the seventh chapter include a discussion which leads up to the conclusions of the study. The appendices include an organizational structure of the Potchefstroom FPA, a map over the study location as well as the interview guides used in the study.

1. INTRODUCTION

2. THEORETICAL FRAMEWORK

This chapter outlines the theoretical framework which creates the foundation of the study. First, fundamental terms such as crisis and communication are presented, followed by a more thorough introduction to crisis communication. Further sections include channels for communication, the needs of the affected population, intercultural communication and trust and credibility.

2.1 Crisis

The term crisis has a number of different definitions, many of them including the same basic concepts. In the publications by Flodin (1993:9) and Jarlbro (1993:7) a crisis is described as a situation or a development which:

- Deviates from what is considered to be normal
- Occurs relatively rapidly and somewhat unexpected
- Is relevant to the society and/or many people
- Can threaten fundamental values
- Requires quick decisions

2.1.1 The different phases of a crisis

The management of a crisis situation can be divided into a number of phases (Enander, 2010). During these phases the need for communication and information is changing with the development of the crisis (Jarlbro, 1993). Scholars use different methods of chronologically dividing the crisis and even though the number of phases varies, the structure is similar. Enander (2010) uses three phases: Preparedness, Response and Recovery (Figure 1).

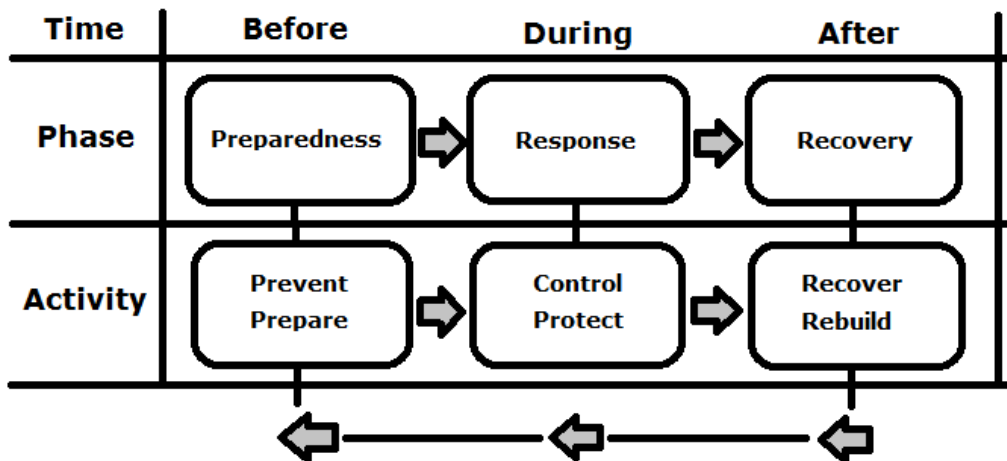


Figure 1. The different phases and activities in a crisis. Adapted from Enander (2010).

The preparedness phase

The preparedness phase is characterized by preparation and preventive measures. It is considered to be the first phase in a crisis and it takes place before an incident occurs. Risks and threats are identified, as well as the consequences. The evaluation leads to a number of preventive measures and preparations. (Enander, 2010)

The response phase

According to Enander (2010) the response phase is characterized by taking actions to combat the threat, protecting life and property, and minimizing damage. It is considered to last from the

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moment an incident occurs until the acute situation is either over or under control. The length of the period can be short for some incidents, for instance a fire, while radioactive fallout can last for several months and even years.

The recovery phase

The recovery phase is characterized by recovery and rebuilding. There can be physical, psychological and/or social damage which needs to be managed as a result of the crisis. The recovery phase occurs from the end of the acute situation and will transform into another preparedness phase when the damages are restored and the experiences are managed. (Enander, 2010)

As shown in Figure 1 the phases of a crisis form a cycle. The phases are not as clearly separated in reality as in the figure, they can rather overlap each other and occur combined. (Enander, 2010) The research performed in this study focuses on the response phase but the other phases will be mentioned as they all influence each other.

2.2 Communication

Shannon and Weaver describe communication as a linear one-way process where a *source of information* produces a *message* which is distributed to a *receiver*. When the message is transported from the source of information to the receiver it can be transformed by *noise*. Noise can cause a difference between the transmitted and the received signal, which means that the reconstructed message might not have the same meaning as the original message. (McQuail & Windahl, 1993)

Another view of communication is presented by Osgood and Schramm using a circular process to describe communication. The model is dynamic with all participants acting as both senders and receivers of messages. Feedback has an essential role in the model as it shows if the message has been received and how the message has been received. (Morgan & Welton, 1992)

In the early stages of a crisis, it is very common that most of the crisis communication occur as one-way communication (Palm, 1998). McQuail and Windahl (1993) describe how communication often fails because of inabilities among the communicators to understand how the message can be interpreted differently than they intended. Consequently, it is important to try to develop a communication style which allows for feedback and participation already at an early stage.

2.3 Crisis communication

When a wildfire occurs, the need for information among the affected population escalates rapidly. Information is requested about what is going on, what the authorities are doing and what they are expected to do themselves. (Falkheimer et al, 2009) Crisis management consists to a relatively large part of communication. Crisis communication from an authority's or an organization's perspective includes communicating with other authorities/organizations, the affected population and often media as well. (Larsson, 2008; Flodin 1993) Distributing information is often the main focus but an equally important part is receiving information, to keep a dialogue with other stakeholders involved in the crisis. (Larsson, 2008)

2.3.1 Channels for communication

All crises have different characteristics which should be taken into account when deciding which

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channels for communication to use. The channels used for communication in a crisis situation must, according to Jarlbro (1993), be adapted to:

- Who the sender is
- What the message is
- Who the receivers are
- Which topics are covered
- How much time there is available

The channels have different advantages and shortcomings which should be considered in the process of deciding which ones to use for crisis communication. An essential part of a communication channel used in a crisis is that it can reach the affected population and spread the messages fast. (Jarlbro, 1993)

The more heterogeneous the affected population is, the more important it is to use various different channels for communication. (Palm, 1998) Even if the affected population is very homogenous, the understanding of a message is according to Flodin (1993) seen to increase when various different channels for communication are used. If the communicators know which channels the affected population use, which needs they have and which problems might occur, the communication can be handled more effectively (Larsson, 2008).

2.3.3 Shaping the message

What an informational message used in a crisis situation should contain is very dependent on the situation itself. Successful crisis communication is about adapting the message to the target population. (Nordlund, 1994) Nevertheless, there are some basic contents which should always be considered. According to Jarlbro (1993:25) and Nordlund (1994:25), people affected by a crisis will likely be interested in:

- Descriptive information about the incident
- Why the incident occurred
- What consequences the incident will have
- What the public should do to protect themselves

Flodin (1993) emphasizes the importance of credible information distributed quickly after an incident has occurred. Palm (1998) adds that the content of the message should be understandable, relevant and unambiguous. Nordlund (1994) presents a number of factors which can affect the receiver's perception of a message negatively. One factor not described by the other scholars above is contradictory messages coming from different sources (Nordlund, 1994). Below, some of the key factors for successful crisis communication are described more thoroughly.

Relevant information

In a crisis the received information loses its value if it does not manage to answer the questions of the affected population. There has to be interactive, two-way communication both before and during a crisis to make it possible for authorities and organizations to supply the affected population with relevant information. (Palm, 1998)

Understandable information

If technical and bureaucratic terms are used in communication, the audience can either be

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impressed by the knowledge of the communicator or feel that they are not treated with respect (Hedquist, 2002). According to Flodin (1993) the communicator has to make the message comprehensible by using a language the receiver understands. Technical terms can therefore not be used unless the receivers have the same knowledge as the communicator (Nordlund, 1994). In a crisis situation an organization which does not make an effort to use a language the community understands will not be perceived as credible. The audience will rather get the impression that their situation is not understood. (Hedquist, 2002)

Coordinated information

From the perspective of the receiver it is difficult to know how to approach contradictory information. Hence, it is very important that the different organizations try to coordinate their information. Various messages not corresponding with each other can create anxiety and confusion rather than be useful. (Jarlbro, 1993) Using a collective distribution of information when various organizations are involved makes the process of supplying the affected population with unambiguous messages easier (Larsson, 2008).

The right amount of information

In an early stage of a crisis it is very common that the communicating organizations have not yet been able to obtain an overview of the situation. Even if there is not enough information to be able to draw conclusions, the affected population is requesting information and must be let known that the organization is gathering information. (Enberg, 2001)

If there is a lack of information, the affected population cannot obtain answers to all of their questions. The lack of information is sometimes local, if the distributed information is not sufficiently spread and therefore not reaching the entire population. (Flodin, 1993) A need for information that is not obeyed can create anxiety and lead to a circulation of rumours (Nordlund, 1994).

The need for information will differ between the individuals in the affected population. It will also be dynamic over time, meaning that the demand increases and decreases during the different phases of a crisis. Consequently, the provider of information has to adapt the amount to the needs of the receivers in the current situation. (Jarlbro, 1993)

2.3.4 Planning and preparing for crisis communication

Plans on how to manage a crisis have to be made general since one of the characteristics of a crisis is that it is unexpected and deviates from what is normal. To achieve a broader and more nuanced perspective of potential crises it is beneficial if the participants in the planning process have different backgrounds, experiences, interests and education. A heterogeneous group can accomplish a more creative and nuanced analysis than a homogenous group. (Falkheimer et al, 2006)

Managing unexpected events require the involved personnel to use improvisation. Great improvisation-skills come from knowledge and experience. (Falkheimer et al, 2006) Experience is considered to be very valuable when it comes to effective crisis response and crisis communication, particularly in the initial phase of a crisis. Knowing what contacts to initiate, how to structure the operation and what problems can arise, will very likely make the crisis response faster and easier. (Larsson, 2008)

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Larsson (2008) presents views from disaster professionals on how previous disasters affect disaster preparedness. The opinion of the interviewed professionals is that both the individuals and the agencies have gained valuable knowledge from previous disasters. Even though personal experience of disaster response provide the most effective practice, trainings are an important complement to gain knowledge and preparation. As Larsson (2008) expresses it, “*learning by doing*” generates the best conditions for disaster response.

The purpose of performing trainings is not only to gain knowledge about crisis management and response, but also to get in contact with other organizations being active in a crisis and maybe even parts of the community, to create useful networks (Enberg, 2001; Larsson, 2008). Involving citizens when trainings are performed can be useful to learn more about their needs in a crisis situation. (Larsson, 2008) Another advantage is that the participants become aware of the risks and realize that they can become affected themselves. (Hallin et al, 2004)

What needs to be kept in mind is that even if trainings gain knowledge, it is very rare that the actual crisis behaves as anticipated. Many times a crisis occurs because the situation had never even been imagined. (Larsson, 2008)

2.4 Meeting the needs of the affected population in an emergency situation

Enander (2010) presents six key aspects for performing emergency response operations with the needs of the affected population as the guiding objective. Enander uses the word “*victims*” to describe what is in this study called “*the affected population*”.

2.4.1 Developing the ability to form social and psychological diagnoses for emergency/crisis situations

To be able to form a diagnosis for a crisis situation, it is first necessary to understand and analyze the incident. Developing an understanding requires knowledge of how each individual is affected in the social context within which the situation occurs. The consequences must be estimated from the victim’s point of view by trying to understand how the situation is perceived and how the affected individuals can cope with the situation. (Enander, 2010)

2.4.2 Developing the ability to understand and interpret human reactions

Understanding how people interpret situations is essential to understand their reactions. To provide appropriate assistance, understanding is also a crucial factor. Actors who manage an incident need to be aware of the possibility that stress reactions can cause irrational behaviour. Consequently it is necessary to develop an understanding of human behaviour in crisis situations to better be able to control one’s own reactions to other people’s behaviour. (Enander, 2010)

2.4.3 Trying to establish realistic expectations for the conduct of colleagues and others affected

False expectations of people’s reactions can cause misdirected response operations and result in unclear information being distributed. As Enander (2010:34) describes it: “*Myths concerning conduct during times of crisis live on*”. An example could be authorities and organizations withholding information because of a fear to cause panic, while the affected population would rather see that the information was shared. (Enander, 2010)

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2.4.4 Understanding the significance of information enquiries

Enquiries for information in a crisis situation can be a sign of the affected population's need to understand and obtain control. The characteristics of the information must therefore be: quick, relevant, clear and reliable. (Enander, 2010)

2.4.5 Being aware of the human need for control and influence

As Wahlen (2004) describes it, emergency response personnel often have high expectations to live up to and it is part of their roles as professionals to fulfil the expectations. In crisis situations the professionals are often expected to take command of the situation. What is important for the professionals to consider are the basic needs of the affected population, the need to be able to influence the situation and act for yourself. One way a stakeholder can operate to achieve that is to share the decision making and the responsibilities with the affected population as much as possible. (Enander, 2010)

2.4.6 Create preparedness for the handling of conflicts and negative reactions

A crisis can contribute to cooperation and solidarity as well as it can cause conflict and antagonism. Latent problems can be brought up to the surface in socially complex situations. The latter is expected to increase in the future with the extended complexity of risk situations as well as a more diversified society. Emergency professionals must therefore be trained to manage these situations. (Enander, 2010)

2.5 Intercultural communication

The cultural context teaches core understanding of the world and shapes thoughts and beliefs. All individuals have a "*perceptual window*" which affects how they see themselves and others. It is influenced by culture and decides how each individual interprets the reality and what is considered to be right and wrong. It also shapes customs in everyday life, such as attitude towards time. Historical development and tradition are often associated with a culture's identity. (Dodd, 1998)

2.5.1 Language and culture

According to Heugh (1999), language is a resource which facilitates effective communication and cooperation between people. In some cultures there are codes only understood by members of that specific culture. The use of such a language can exclude people from outside the culture to be a part of the communication. (Dodd, 1998)

2.5.2 Conversational rules

The combination of language and interactional rules for conversation can distinguish one culture from another. Culture influences pitch, volume, word choice, tone of voice and the number of expected words. An example used by Dodd (1998) is a comparison of the typical communication style of a person from Thailand compared to a person from the United States. The conversational style the American is using is, from the Thai's perspective, very loud and can even be interpreted as angry. This type of communicational expectations can be roots of conflict. (Dodd, 1998)

2.6 Trust and credibility in crisis communication

Credibility can be a result of successful communication, as well as a prerequisite for successful communication. As Boin et al (2005) describes it:

"The most important factor that determines the effectiveness of governmental crisis communication effort is, of course, the degree of credibility (...)" (Boin et al, 2005:78)

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The background of the recipient, as well as the recipient's relation to the person or organization communicating the message, can affect if the source is seen as credible or not (Jarlbro, 1993). It is always the person receiving the message who decides whether or not the communicator is credible. As Hedquist (2002) describes it, credibility lies in the eyes of the beholder. What is considered to be a credible source can also depend from situation to situation (Jarlbro, 1993). Gender, age, nationality, profession and skin colour are a few of the factors which can affect the perception of a person's credibility. (Hedquist, 2002)

If the communicator is perceived to be credible, the audience can develop trust, which is a key concept in communication. Trust originates from mutuality obtained from a relationship built on respect and dialogue. The difference between credibility and trust is that the term trust also includes a positive assessment of the communicator. Trust is described to be essential for effective communication between stakeholders in a crisis situation. (Hedquist, 2002)

Nordlund (1994) describes how contacts between crisis actors and citizens in everyday life can build trust and create positive expectations which are beneficial during a crisis. Regular contact with stakeholders, who will have important roles during a crisis, makes the process of crisis communication easier (Enberg, 2001).

It is important that all stakeholders are clear on each other's capacities to avoid misunderstandings (Nordlund, 1994). During a crisis, the expectations of an organization can either be confirmed or demolished (Jarlbro, 1993). According to Hedquist (2002), too high expectations of an actor's capability in a crisis situation can result in decreased credibility, and even mistrust, if the expectations are not lived up to. If the affected population mistrusts authorities and organizations, it will have negative implications on the crisis communication. (Jarlbro, 1993)

2. THEORETICAL FRAMEWORK

3. THE STUDY CONTEXT

This chapter describes the context the study was performed in, which includes the area of the study, the fire actors and the population in the area. There is some general information for descriptive purposes but the focus is on veldfires and farming, as well as other contextual factors believed to affect the topic of the study.

3.1 Location

In this section the study location will be described, starting at a national level narrowing it down to a local level.

3.1.1 South Africa

South Africa is located on the southernmost tip of the African continent. According to Statistics South Africa, the country has 50.59 million inhabitants living in nine different provinces. South Africa is a very diverse country with a number of different racial groups and eleven official languages. (GCISa, 2012) With the history of apartheid, the access to resources is still unequally distributed. The segregation can, according to Tissington (2010), be described by the fact that the poorest 10% of the households earned almost 150 times less than the richest 10% in 2008. Below, veldfires and agriculture will be presented more thoroughly, as well as South Africa's historical apartheid era.

Veldfires

In South Africa, the main fire season is during the dry winter months with an exception of the Western Cape where the fire season occurs during the dry summers. What cause the fires are often either human actions, lightning or rocks falling in mountainous regions. In South Africa, about 70% of the ecosystem need to burn to maintain the ecological integrity. (Goldhammer & de Ronde, 2004; WoF, 2011a) The burning must be done through controlled fires in areas where people live and where property and fire sensitive natural resources could be endangered. (Goldhammer & de Ronde, 2004)

A continuing population growth and lack of economic development leave many people to subsistence agriculture. Increased human pressure on the land and widespread land transformation, together with uncontrolled burning, displays a trend of more fires in the future. Regulations regarding the use and control of fire exist but because of difficulties in punishing those responsible, the regulations are rarely enforced. (Goldhammer & de Ronde, 2004)

Agriculture

In South Africa about 8.5 million people are directly or indirectly dependent on the agricultural sector for income or employment. (GCISa, 2012) South Africa generally produces 85% of its meat requirements and the livestock sector, which is the largest national agricultural sector, contributes up to 49% of the agricultural output. (GCISa, 2012b) Cattle ranches are found mainly in the North West, Limpopo, Mpumalanga, Eastern and Northern Cape, as well as in some parts of the Free State and KwaZulu-Natal. Almost 50% of South Africa's water is used for agricultural purposes. Due to limited amounts of water in the country, it is a big investment and also a limiting factor for the agricultural sector. (GCISa, 2012)

3. THE STUDY CONTEXT

Apartheid

Apartheid is the Afrikaans term for “*separateness*”. It can be described as a set of racially discriminatory policies together with enforced racial segregation. In 1948 the National Party won the election and the apartheid era started. The National Party held the power until 1994 when South Africa’s first democratic election was held. Ten years after the end of apartheid, the economic inequality was persistent and there were even indications of the situation worsening. Inequalities as a consequence of race had given way to inequalities as a consequence of class. (Seekings & Natras, 2005)

The core of the apartheid system was the superiority of the white people in a hierarchy graded by skin colour. The system had two main characteristics: the control of black labour by white domination and the separation of races. The separation of races was based on beliefs of inherent and immutable differences. A classification was made and all South African’s were sorted based on their race and tribe. The groups were white/European, mixed race/coloured, Indian/Asian, black, native, Bantu or African. Specific racial groups were required by law to live in specific areas. (Horwitz, 2001)

Language was an important matter of the apartheid system. One of the ambitions was to diminish the importance of English and make Afrikaans the primary language in South Africa. The first group exposed to these matters were the Africans. The new Education Act held requirements for schools to teach Afrikaans additionally to the native languages. (Horwitz, 2001)

During apartheid, the Land Acts of 1913 and 1936 diminished the possibilities for Africans to farm and own land by safeguarding a certain amount of land for white people. In total, the Africans were deprived of 90% of their land. (Herwitz, 2003)

3.1.2 North West Province

The North West Province is located in the northern parts of South Africa, on the border to Botswana. About 3.2 million people live in the province and almost two-thirds (65%) of the population live in rural areas. (Big Media Publishers, 2012; Government Communications, 2012) Mafikeng is the capital and the largest towns are Potchefstroom and Klerksdorp. (GCISc, 2012) A map of the North West Province is available in Appendix B.

The province is known as the Platinum Province, indicating the significance of the mining industry in the area. Large parts of the province consist of grasslands and flat areas of scattered trees. (Tourism North West, 2012a) Agriculture is an important sector and some of the largest cattle herds in the world can be found in the area. Apart from cattle farming, maize and sunflowers are two of the most important crops. The North West Province is South Africa’s major producer of white maize. (GCISc, 2012)

Almost two-thirds (65.4%) of the population in the province speak Setswana. Afrikaans is the second most spoken language (7.5%) and isiXhosa the third (5.8%). (GCISc, 2012) English is primarily spoken as a second language. (Tourism North West, 2012a)

There are four district municipalities in the North West Province: Bojanala Platinum, Dr. Kenneth Kaunda, Dr. Ruth Segomotsi Mompati and Ngaka Modiri Molema (GCISc, 2012). The district municipality where the study was performed, Dr. Kenneth Kaunda, will be given a closer presentation in the next section.

3. THE STUDY CONTEXT

3.1.3 Dr. Kenneth Kaunda District Municipality

The Dr. KKDM consist of four local municipalities: Ventersdorp, Tlokwe (formerly Potchefstroom), City of Matlosana (formerly Klerksdorp) and Maquassi Hills. The research was mainly concentrated to Tlokwe local municipality, with an additional group of fire actors from Klerksdorp and two farmers from Ventersdorp. A map of the Dr. KKDM is available in Appendix B. Below, each area will be given a short presentation.

Tlokwe Local Municipality (Potchefstroom)

Tlokwe Local Municipality is situated by the Mooi River approximately 120 kilometres southwest of Johannesburg. (Tourism North West, 2012c) The population was, in the Census performed in 2001, approximately 130 000 people. (Statistics South Africa, 2003) Potchefstroom is characterized by university life with approximately 20 000 students at the North-West University (NWU) campus and about 30 000 distance learners. (NWU Institutional Office, 2012) Apart from NWU, Potchefstroom also has a College of Agriculture which is active in developing and promoting the agricultural sector based in the rural areas surrounding the town. (Tlokwe City Council, 2012)

City of Matlosana (Klerksdorp)

The City of Matlosana is located 40 kilometres southwest of Potchefstroom. The city creates, together with Rustenburg, the economic heart of the North West Province. The farming in the area is very significant, with the largest agricultural cooperative in the southern hemisphere. City of Matlosana is also a hub in the South African mining industry, with the primary focus on gold mining. The mines also serve as tourist attractions bringing visitors to the area. (Siyabona Africa, 2012)

Ventersdorp

Ventersdorp is located in the Vaal River Valley, 50 kilometres northwest of Potchefstroom. (Tourism North West, 2012b) Two-thirds (67%) of the municipality is covered by grasslands and 27% is covered by land used for commercial farming purposes. The urban areas in Ventersdorp only cover 0.1% of the municipality which makes it a rural agriculture-dominated settlement. The agriculture represents 49% of the total economy in Ventersdorp, which makes it the largest contributing sector in the area. (Ventersdorp Local Municipality, 2011)

3.2 Fire actors

Veldfire management in the Dr. Kenneth Kaunda District Municipality performed by three organizations: the fire brigade, the Fire Protection Association and Working on Fire. Each fire actor will be presented below.

3.2.1 The fire brigade

In Potchefstroom, Tlokwe Local municipality, the fire brigade is a part of the department for public safety. The responsibilities of the fire brigade are, according to the local municipality: firefighting, rescue services, fire safety inspections and managing a fire reservist programme. (Tlokwe Local Municipality, 2012) Potchefstroom has one fire station today, situated in Potch Industria, and another one is planned to be built in Ikageng.

The fire brigade in Potchefstroom is relatively culturally diverse and the official language is English. Many people in leading positions as well as the phone operators at the emergency call

3. THE STUDY CONTEXT

centre, which the fire brigade is reached through, do not have Afrikaans as their native language.¹

3.2.2 Fire Protection Association (FPA)

A Fire Protection Association (FPA) consists of landowners formally creating a group to prevent and manage veldfire risks in a defined area. (WoF, 2011b) An FPA should be established when the cost of organizing and maintaining the FPA is justified by the veldfire hazard. Most landowners can choose if they want to be a part of the FPA or not. Others, for example owners of state land, must join an FPA as soon as it is registered in the area. Some of the advantages for landowners being part of an FPA are: Cost saving by avoiding duplications of services, advice and assistance from the committee and from other members in preparing firebreaks and fighting fires as well as a possible decrease in insurance premium. (Teie, 2009)

The chief executive officer of the FPA is called a Fire Protection Officer (FPO). The FPO has a number of powers outlined in the Act. One of them is the ability to take charge of the firefighting in the area of the FPA. If the Chief Fire Officer (CFO) of the fire brigade is willing to take the role as the FPO, he or she will automatically be appointed. If the area does not have a fire brigade, or the CFO is unwilling to take the role, the FPA can choose to appoint someone else as the FPO. (Teie, 2009) Each FPA should be a part of an Umbrella FPA (UFPA) at provincial level. The cooperation creates shared resources and services. (WoF, 2011b)

The Potchefstroom Fire Protection Association (PFPA)

The farmers in the study, who were FPA-members, were members of the Potchefstroom FPA. Therefore, The Potchefstroom FPA is referred to as "*the FPA*", in this report.

The area of the Potchefstroom FPA includes the total area of jurisdiction of the Tlokwe City Council. That includes parts of three provinces: Gauteng, North West and Free State. In the area there are three district municipalities: Dr. Kenneth Kaunda, Fezile Dabi and West Rand. The local municipalities within these districts, which the Potchefstroom FPA have services in, include: Tlokwe, Merafong City, City of Matlosana, Ventersdorp, Parys and Viljoenskroon. (PFPA, 2012)

The FPA-officials consist primarily of white men with Afrikaans as the native language. The farming in the area is largely dominated by white, Afrikaans-speaking, farmers.

3.2.3 Working on Fire (WoF)

Working on Fire (WoF) is a job-creation programme, launched in September 2003, initially funded by the South African government and the commercial forestry sector. The overall strategy is to reduce the frequency and impact of uncontrolled veldfires by applying the principles of integrated fire management. (WoF, 2011c) WoF trains young people from marginalized communities in fire suppression skills, prevention and fire awareness. The firefighting ground crews are stationed at bases around the country to reduce personal and economic harm resulting from unwanted wild fires. There is a great need of having teams based locally for the annual fires. (WoF, 2011d) Currently, there are more than 150 WoF bases across South Africa, with a total of over 4700 people deployed. (WoF, 2011e) Working on Fire was formed by a South African based company and can today also be found in Australia, Europe, South and Central America, North America as well as in other countries in Africa. (WoF, 2011f)

¹ Interview: Tlokwe Fire Brigade, March 22, 2012.

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In Dr. KKDM a team from WoF is placed in the Boskop Dam reserve. As stated above, the majority of the WoF employees are young people from marginalized communities. In the chart below, the total WoF employment is presented according to race. African and coloured people make up 98% of the WoF firefighters. (WoF, 2011g)

Total WoF Employment Equity: Race

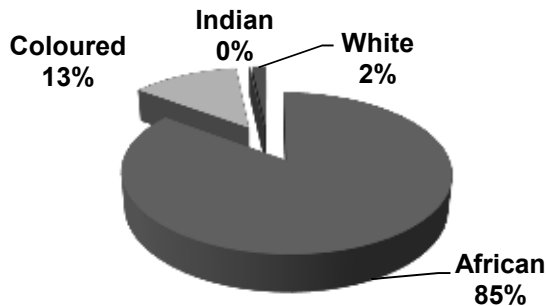


Figure 2. Statistics on employment equity in WoF, adapted from WoF (2011g).

3.2.4 PUK Emergency Services

At North-West University, Potchefstroom campus, PUK Emergency Services are available as a multidisciplinary emergency service provider. The service mainly consists of firefighting, rescue services and emergency medical care to everyone at campus but it also includes firefighting at the farms belonging to NWU. (North-West University, 2011) During extraordinary situations, like the veldfires in August 2011, the PUK Emergency Services are also available to serve outside their primary area.

The majority of the PUK Emergency Services employees are white men with Afrikaans as their native language.

3.2.5 Disaster management centres

In South Africa, the National Disaster Management Centre (NDMC) is a part of the Department of Provincial and Local Government, which is responsible for disaster management at a national level. (Van Niekerk, 2005) The main obligation of the NDMC is to promote an integrated and co-ordinated national disaster risk management policy. (NDMF, 2005)

Each Province also has a disaster management centre (PDMC), which provides a link between the NDMC and the local/metropolitan disaster management centres. (NDMF, 2005)

The municipal disaster management centres work with implementation of disaster management policy and legislation in metropolitan and district municipalities. One of the main tasks is to make sure that national and provincial objectives are achieved by co-ordinating and prioritizing municipal disaster risk management activities. (NDMF, 2005)

During veldfires, the Tlokwe Local Disaster Management Centre has the function of coordinating resources and communication between the different fire actors.² If an incident affects various local municipalities, the Dr. Kenneth Kaunda District Disaster Management Centre is involved. Their task is to coordinate the resources from the different municipalities.³

² Interview: Tlokwe Local Disaster Management Centre, March 29, 2012.

³ Interview: Dr. Kenneth Kaunda District Disaster Management Centre, March 23, 2012.

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3.3 The affected population

This section will focus on native languages and racial groups in the study area. Comparisons will be made with general statistics for South Africa to examine how comparable the results of the study can be. The statistics used in this section are based on the results from the census in 2001. There was a census completed in August 2011 but the results will not be presented until March 2013. There have been some reports published since the census in 2001 but the statistics are not as detailed as the census. Since the statistics used in this report only strive to give a rough perspective of the area it is believed that the numbers from 2001 provide satisfactory results.

3.3.1 The people

Potchefstroom, Ventersdorp and City of Matlosana all have a large white population in the central parts of the town, and neighbouring townships with a mainly black and coloured population. Statistics from the Census 2001 show that the central parts of Potchefstroom consists of 86.0% white people and 11.7% African people (Frith, 2009a). If the entire local municipality is looked at, including the surrounding townships, the results are instead 70.5% African people and 22.7% white people (Frith, 2009b). Similar results are available for Ventersdorp and City of Matlosana.

The population in focus of this study are farmers, which in the studied area consists mainly of white people. In the area of the Potchefstroom FPA, only white farmers could be identified. In Ventersdorp a coloured farmer was interviewed, but coloured farmers were described to be very rare in the area.

3.3.2 The languages

As mentioned in the introduction to South Africa, the country has eleven official languages. In the table below, the native languages of the South African population is presented. An important aspect is that English is the mother tongue of only 8.2% of the population but still the second language of the majority in South Africa (GCISa).

Table 1. Languages according to mother tongue. (Statistics South Africa, 2003)

Language	Percentage	Language	Percentage
isiZulu	23.8%	Sesotho	8.0%
isiXhosa	17.6%	Xitsonga	4.4%
Afrikaans	13.3%	siSwati	2.7%
Sesotho sa Leboa	9.4%	Tshivenda	2.3%
English	8.2%	isiNdebele	1.6%
Setswana	8.2%	Other languages	0.5%

Potchefstroom is described by Webb (1999) as an area where Afrikaans generally has a stronger presence than English even though the African languages may be far stronger statistically speaking. That can be confirmed when looking at the statistics presented below.

If the entire local municipality is studied, Setswana is the most common mother tongue (43.7%) followed by Afrikaans (28.5%) (Frith, 2009b).

In the central parts of Potchefstroom, the most common native language is instead Afrikaans (82.5%) followed by Setswana and English with (6.4% each) (Frith, 2009a).

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All interviewed farmers but one in the Potchefstroom area had Afrikaans as their native language. The farmer who did not have Afrikaans as mother tongue had English as the native language but had grown up with Afrikaans and felt just as comfortable using both languages.

3.4 Legislation

The National Veld and Forest Fire Act of 1998 places an individual responsibility on landowners to take certain precautions to prevent and fight veldfires.

3.4.1 Firebreaks

One of the responsibilities in The Act concerns preparing firebreaks on the land borders where there is a risk for fire. A firebreak can be defined as: *“A natural or constructed barrier utilized to stop or check fires, or to provide a control line from which to work”*. (Teie, 2009: 575) The main purpose of firebreaks is often to prevent the spread of uncontrolled fires. A firebreak must be long enough, wide enough and sufficiently cleared of flammable material to stop a fire from spreading to neighbouring land under reasonable conditions. (Teie, 2009)

3.4.2 Equipment and personnel

Another responsibility consists of holding equipment, trained personnel and protective clothing for firefighting. Instead of supplying all the material and services yourself, landowners can join an FPA. Private landowners do not have an obligation to be a part of an FPA while state landowners are obliged by The Act.

3.4.3 The presumption of negligence

A person who caused or spread a veldfire which created damage on someone else’s farm will immediately be assumed guilty, until the contrary is proven, if the landowner can prove evidence of loss. If you are a member of the FPA, you are not assumed to be guilty and the opposite has to be proven. The reason for that is because an FPA-member has, according to The Act, fulfilled the responsibilities by joining an FPA and adhering to their rules. (Teie, 2009)

3.5 Channels for communication

The affected population in this study lives in rural areas and a large part of the communication is performed through two-way radios. Other means of communication used among the farmers are cell phones. The two-way radios will be introduced more thoroughly below.

The reason for using two-way radios as the primary means of communication is because it is more resilient than cell phones. That is also the reason the two-way radio is the most important channel for communication among emergency personnel. (Onslow, 2008)

The most common types of two-way radios are the hand held portable, the vehicle-mounted mobile and the desktop based stationary radios. The vehicle-mounted two-way radios receive power from the vehicle’s battery. The desktop based radios run on electricity from power outlets. Vehicle-mounted radios and desktop stationary radios are usually more powerful than handheld radios. (Onslow, 2008)

Topography, such as hills or canyons, and obstructions, like dense forest and structures, can affect the range of the two-way radios. To extend the possibilities of transmitting and receiving signal on vehicle-mounted and desktop stationary radios, external antennas can be used. When antennas are not enough, repeaters can be installed to improve the communication. A repeater

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receives a signal and regenerates it, creating the possibility to get past hills and other obstacles. (Onslow, 2008)

4. RESEARCH DESIGN AND METHODS

In this chapter the research design and the research methodologies are presented. It is also described why the particular design and methodologies were chosen. Furthermore, reliability and validity are discussed to properly provide significant research findings.

4.1 Research design

When performing research one primary decision which needs to be considered is which research design should be used. Often it is a matter of using either qualitative or quantitative research design, or a combination of the two. (Struwig & Stead, 2001) The characteristics of each design are presented below.

Qualitative research design

Qualitative research design is used when the researcher believes the best way to resolve the research questions is through using words to describe the reality. The data consists of detailed descriptions and observations often gained from interviews or participant observations. The reality is seen as subjective and multiple. (Kvale & Brinkmann, 2009; Struwig & Stead, 2001)

Quantitative research design

Quantitative research design is used when the researcher considers using empirical methods and numerical data to be the best way to achieve the desired results. The data consists of quantifiable parameters often gained from surveys or experimental research. The reality is seen as objective and singular. (Bryman, 2011; Struwig & Stead, 2001)

The decision on which research design to use should be based on what the researcher wants to achieve as well as how to ensure reliability and validity. (Lowhorn, 2007)

4.1.1 Choice of research design for the study

In this study, qualitative research design has been used because of the desire to describe situations from the perspectives of the research participants. As one of the objectives of this study is to investigate communication and how it is perceived from the stakeholders' perspective, qualitative research design is considered appropriate.

The social context the research participants live and act within is considered to be important in qualitative research. The characteristic which defines those parameters is called contextualism. It explains how the behaviour of the individual is related to the environment they are situated in and how the historical context plays an important part in shaping the individual. (Bryman, 2011; Struwig & Stead, 2001) Contextualism is believed to have an influence on this study because of the social factors which can shape the values of the research participants. Thoughts and behaviours are believed to be influenced by the history of the country and the current situation.

In the beginning of the study the author needed to gain an initial understanding of how the emergency services operate and how they are organized during veldfires. The use of qualitative research was therefore a good choice in the exploration since the participants often touched subjects the author had not considered before.

Qualitative research design can be performed through different research methods, where some of the most common ones are interviews, focus groups and participant observations. (Kylén, 2004) Methods used in this study are presented in the next section.

4.2 Research methods

The thesis process started with formulating the research questions. Next, a literature study was performed within the areas concerned. The interviews were carried out as semi-structured interviews. The results were collected, sorted through coding and analysed, which made it possible to draw conclusions and write a final report. The entire process is described in Figure 3 and some of the steps are described more in detail in the following sections.



Figure 3. The thesis process from the research questions to the final report.

4.2.1 Literature study

After formulating the research questions a literature study was performed. The aim of the literature study was to gain basic knowledge about crisis communication and how it is influenced by factors such as trust, language and already established networks. Also, an attempt was made to find out what have been done before in terms of research connected to the research questions of this study.

Electronic databases

Electronic databases such as LibHub, Summon and Scopus were used through Lund University while EBSCOHost and ScienceDirect were used to search for literature at North-West University. Search engines such as Google Scholar and JSTOR have also been used to find literature. Some of the keywords used in the literature study was: Crisis communication, veldfires, networks, trust and credibility.

Libraries

Libraries in Potchefstroom (Ferdinand Postma, North-West University) and Stockholm (Riksdagsbiblioteket) have also been used in the search for literature.

Cross-references

Another way of finding relevant literature is by using cross-references. Using cross-references means that relevant books and reports are searched for among references in existing literature. This technique was primarily used in the beginning of the study, to get a perspective of sources relevant for the study.

4.2.2 Interviews

As described earlier, an important part of qualitative research is the human interaction. The objective is to receive rich descriptions from the interviewee's perspective aiming to interpret the material. According to Bryman (2011), there are three different types of interviews:

- Structured
- Semi-structured
- Unstructured

Semi-structured interviews are a combination of structured and unstructured interviews (Struwig & Stead, 2001) and will be further described in the next paragraph.

4. RESEARCH DESIGN AND METHODS

Semi-structured interviews

Using semi-structured interviews a number of areas should be covered through certain, usually open-ended, questions. Some of the questions are predetermined while others arise during the interview. (Sociology central, 2011) The interview is kept at a conversational level and the interviewee speaks freely while the interviewer is guiding the dialogue through the questions. The order of the questions is arranged during the interview, by improvisation from the interviewer, to keep a flow depending on what the interviewee brings up. (Kylén, 2004)

Semi-structured interviews were used in this study because the researcher desired answers to some specific questions as well as possibilities of touching unknown parts which could contribute to the research.

Strengths with semi-structured interviews are that feelings and emotions can be easily observed, questions can be clarified during interviews and information can be picked up in areas where the interviewer lacked prior knowledge. Weaknesses with semi-structured interviews include the required time consumption, dependency of qualifications of the interviewer and difficulties to generalize results. (Adler & Clark, 2008; Sociology central, 2011)

Interviews performed in the study

The farmers were given the opportunity to conduct the interview in Afrikaans since there was always a second researcher, native Afrikaans-speaker, present at the interviews. The farmers still chose to try to speak English and Afrikaans was only used when the farmers did not feel like their English was sufficient.

Because of the importance of being familiar with the social context of the participants (Adler & Clark, 2008), the three months spent in South Africa were very valuable to the researcher. Still, there are many things which cannot be learnt in such a short amount of time, which might be a shortcoming to the study.

Recording the interviews

Performing a semi-structured interview, it is very valuable for the interviewer to have the interview recorded. The interviewer can then focus adequately on the interviewee's answers while not having to think about writing the answers down. Also, the interviewer can focus more on building a relationship with the interviewee by making eye contact and concentrating on follow-up questions. Having the interview recorded could affect the interviewee negatively by holding back frankness and making the interviewee feel intimidated. (Adler & Clark, 2008)

With that in mind the interviewees in this study were given an opportunity to perform the interview without having it recorded. During almost all interviews the author was accompanied by another researcher, why the setup of one person writing the conversation down would have been possible. None of the participants chose not to have the interview recorded, why the possibility was never utilized.

Selecting participants

A snowball identification technique was used for identifying fire actors involved in communication with farmers during veldfires. Using a snowball identification technique means a first interviewee is recommended and when the interview is performed, the interviewee is asked to name a couple of stakeholders relevant to the study (Goodman, 1960).

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In the case of this study a first interviewee was recommended by Professor Dewald van Niekerk, African Centre for Disaster Studies. During the interview additional stakeholders were identified and the process kept evolving as more interviews were performed. To ensure that the coverage was satisfactory, a confirmation of fire actors being active during the veldfires in August 2011 was performed with representatives at Tlokwe Local Disaster Management Centre.

Five of the farmers interviewed for the study were identified by Dieter Jordaan, Department of Agriculture, Conservation and Environment, Potchefstroom. The author specifically wished for a diverse selection of farmers considering their relations to the FPA. Two of the farmers were identified at a later stage from contacts gained during the study.

All farmers participating in the interviews, as well as all fire actors, were in some way involved in the veldfires in August 2011.

Performing interviews

The interviews were conducted in the District municipality of Dr. Kenneth Kaunda during March and April, 2012. All interviews were conducted in person and recorded for further analysis. The length of the interviews varied between 20 minutes and 2.5 hours. Two different types of interviews were performed:

- Interviews with fire actors
- Interviews with farmers

The interviews with the fire actors mainly took place at the interviewee's office. One of them was performed at a restaurant in Potchefstroom. Seven interviews were performed with a total of fourteen fire actors. All interviews were conducted by the author of this report together with Dr. Marlene Wiggill, School of Communication Studies (NWU), who is also performing research on communication related to veldfires.

The interviews with the farmers were primarily performed at the interviewee's farm. One interview was performed at a coffee shop in Potchefstroom. Seven interviews were performed with a total of thirteen farmers. Five of the interviews were performed together with Dr. Marlene Wiggill and two with the assistance of Ms. Kristel Fourie, African Centre for Disaster Studies.

Some of the participating fire actors, the ones the author of this report were personally in contact with before the interview, had the opportunity to read through the questions on beforehand. The purpose of that was to review if they were suitable as interviewees for the study. In two of the cases, the originally suggested participant recommended one of their colleagues instead. The reason for that was in the first case because the colleague's position dealt more with the topic of the study and in the other case that the colleague had been more active during the veldfires in August 2011. A disadvantage of handing out the questions on beforehand could be that spontaneous answers are replaced by strategic answers. It is therefore important to have that in mind when analyzing the results.

Interview guides

Two interview guides, one for interviews with farmers and one for interviews with fire actors, were created. The interview guide was used to direct the interviewer and make sure all areas of interest were enclosed. In Appendix C and D, the interview guides are presented.

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Group interviews

Interaction between interviewees can be good in the sense that they remind each other of details that would otherwise not have been remembered. Interviewing several people at once can be negative if it results in some of the interviewees not being given the possibility to express their opinion because others “take over” the interview. (Adler & Clark, 2008) During the interviews performed in this study the interviewers observed that all participants spoke freely and were not limited by the fact that there in some cases were several people taking part in the interviews. When interviewing farmers there was often at least two people, husband and wife, taking part and in some cases also one of the sons. This was seen as beneficial since, as Adler and Clark (2008) states, they reminded each other of details and kept bringing up new subjects to a greater extent than people being interviewed alone.

4.2.3 Analysis of results

After completing the interviews the recordings were transcribed. The text files were coded and categorized into groups relating to central parts in the research questions. Reliability and validity, as well as the use of primary and secondary data was reflected over during the analysis.

Reliability

Reliability defines how repeatable the research is under comparable conditions. Using semi-structured interviews the repeatability can be a challenge since the interviewee is encouraged to speak freely around the questions. It is difficult to repeat an interview exactly because the answers may vary depending on various factors which the interviewer cannot control. The reliability in semi-structured interviews is therefore generally not seen as very high. (Sociology Central, 2011)

An extra dimension of difficulties was sometimes added during the interviews performed in this study because neither the interviewee nor the interviewer used their native languages. To make sure that the questions were understood and interpreted as the author wished, the same question, or slightly modified, were occasionally asked again to clarify the situation. According to Thunman and Wiedersheim-Paul (2003), asking the same question using other words and receiving a similar answer is one way to increase the reliability.

Another possibility of increasing the reliability is by describing the research process and the surrounding conditions in a comprehensible way which gives the reader a chance to evaluate the results.

Validity

Validity demonstrates how well the study measures what it is supposed to measure. (Sociology Central, 2011) Research methods with lower structure such as unstructured interviews, and semi-structured interviews as used in this study, tend to get more valid results than methods with higher structures. The reason for that is because it is easier to adapt the questions to the current situation. (Kylén, 2004) Some of the questions used in the interviews for this study were open-ended. Open-ended questions provide a depth of information which can be beneficial from a validity point of view. A disadvantage is the impossibility of knowing whether or not the interviewee is recalling a situation correctly and sharing accurate information. (Sociology Central, 2011)

Primary and secondary data

Primary data is data gathered by the author through own observations or experiences, while

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secondary data is data available from other studies and publications. (Adler & Clark, 2008; Bryman, 2011; Struwig & Stead, 2011) The interviews performed in this study generated primary data while the theoretical parts are products of secondary data.

5. RESEARCH FINDINGS

The knowledge gained from the interviews is presented in this chapter. The organization follows the research questions.

5.1 Which channels for communication and communication paths are used during veldfires in the Dr. Kenneth Kaunda District Municipality?

The first research question aims to describe how information is distributed between the different stakeholders during veldfires. First, the channels for communication are described followed by the communication paths.

5.1.1 Channels for communication

The channels for communication used by the interviewed fire actors and farmers during veldfires in the Dr. KKDM are presented below.

Two-way radios and cell phones

The results from the interviews showed that the main channel for communication during veldfires is the two-way radio. A number of interviewees described that cell phones are also used, while others lived in areas where the reception was too uncertain to make it a resilient choice in a crisis situation. Consequently, when a message needs to reach a large amount of people fast, two-way radios is the first choice.

Sending text messages through cell phones is another option of reaching many people at once. Since it is difficult to know if the messages actually reach the receiver it cannot be considered an efficient channel for communication with the affected population in the emergency phase. The FPA sometimes use SMS-messages to distribute information in the preparedness phase but that would be less urgent information.

As described in the previous section, the ward an FPA-member belongs to has daily radio checks to control the connection with the two-way radios. During the interview with the FPA committee it was highlighted that communication for everyday purposes over the radios is encouraged. It can be anything from selling animals and equipment to letting neighbours know what is going on in the area. The goal is to make the two-way radio a natural part of the daily life which everyone in the area uses. That includes groups who are not frequent users of the radio today, as kids and farmworkers.

Among the non-members there was one farmer who had large difficulties with communication during the veldfires in August 2011. The problems started with a power outage caused by a fire which made the stationary two-way radio unusable. The cell phone reception was very bad, non-existing at times, which put the farmer in a situation where people outside the farm could not be contacted without physically driving there.

Direct communication

The communication between the farmers and the fire brigade, as well as the farmers and WoF, is often limited to direct communication at the fire scene.

Commercial radio

During the interviews, the FPA and the fire brigade mentioned that information is sometimes

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distributed through commercial radio stations in the area. Such information would mainly aim to inform people not being directly involved about traffic disturbances or similar incidents.

Web pages and social media

The fire actors were also asked if web pages and social media is something that is used during veldfires to inform and communicate with the affected population. All of the organizations participating in the study have, more or less active, web pages but that is not something being used during veldfires. The FPA were discussing possibilities of using Facebook to communicate, but that would rather be in the preparedness and the recovery phase than during the actual veldfires.

5.1.2 Communication paths

As described in section 3.4, farmers in South Africa have the responsibility to handle fires on their own land according to the National Veld and Forest Fire Act. Because of the responsibilities, communication with other stakeholders is an essential part in the veldfire response organization. The communication paths during veldfires in the Dr. KKDM are presented below.

Farmers

The neighbouring farmers become very essential when veldfires rage and the communication is of great importance. As described in one of the interviews:

“The first responder is the farmer. The second responder is another farmer. The third responder is probably yet another farmer, but it could also be an authority...”

The quote above describes the situation of the farmers, with often large geographical distances in the rural areas. A great majority of the interviewees described the communication with their neighbours as well functioning. It was explained how they assist each other in the daily business as well as how they prepare for and act together during veldfires.

A couple of farmers were not entirely satisfied with the communication and referred to having neighbours not being full-time on their farm. Some of the farmers also had farms bordering state land or land owned by private companies. The difficulties expressed was communication regarding preparation of firebreaks and actual veldfires, since firebreaks are often not in place and the farmers will not be notified if fires spread from unsupervised land.

Non-members

One of the interviewed farmers lived in an area with an active FPA but still chose not to become a member. The farmer used a two-way radio on a daily basis and described being in constant connection with people on the neighbouring farms. Some of the neighbours were members of the FPA which meant that important information was generally distributed from the FPA-network to the informal network created by the neighbours.

Since that is not the case with all non-members in the area, the communication with non-members can be very difficult. Interviewees living in areas where there was not a functioning FPA at the time had difficulties reaching information during the veldfires in August 2011. Despite having good contact with their closest neighbours, they missed out on notifications due to the lack of an established network in the greater area. Often they were not notified about veldfires until the closest neighbours identified the fire.

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It cannot be taken for granted that farmers who do not have access to two-way radios receive warnings and information about threatening veldfires and response operations going on in their areas. During the interview with the FPA committee, the involvement of people without two-way radios was discussed and the united opinion was that people without two-way radios should stay away from the veldfire response operations. The reason for that is that the lack of communication can result in dangerous situations. Farmers have been trapped in the fire with injuries and even deaths as a result.

The FPA

If a fire is discovered by a farmer, it should be reported over the two-way radio. The farmer is supposed to contact the WHISKY-station in the area, who in turn contacts the LIMA-station. The WHISKY-station or the LIMA-station then alerts the closest FPA-members in the area to go and assist the farmer to extinguish the fire. If there is a larger fire, or a day with increased fire risk, more people will be alerted at an early stage.

The members of the FPA create a network where communication is facilitated daily through radio checks with the two-way radios. Radio checks serve to make sure that the two-way radios are working and if there is information to be communicated, it is often distributed after the radio checks when people are gathered. The farmers always have the possibility to create a dialogue with the person distributing information. If something is unclear, they can ask questions to clarify the situation.

The fire brigade

As described above, the farmers are supposed to contact a WHISKY-station as soon as a potential threatening veldfire is discovered. The WHISKY-station will then in turn contact the fire brigade to either let them know that they are needed for assistance or, if the magnitude of the fire is still unclear, the fire brigade will be placed in standby until further notice.

Apart from the direct communication performed at the fire scene, the fire brigade does not distribute information directly to FPA-members. If they have informational messages they should, according to the communication procedures between the stakeholders, contact the FPA committee that makes sure the information is distributed to the farmers. This was described by the FPA committee to not happen very often, indicating deficiencies in the communication between the FPA and the fire brigade.

During the interviews it was described that there are farmers still contacting the fire brigade directly. The reason for not acting according to the standard procedures is that some farmers have personal contacts at the fire brigade, which makes the process faster. As one of the farmers explained:

“You must remember one thing about a fire, when it burns your backside, you don’t think through a channel – you get hold of the fire brigade!”

The farmers living in areas without an active FPA were also asked about the communication with the fire brigade. Most of the farmers did not have much experience of communicating with the fire brigade. In short, they had only called them for assistance when a veldfire was raging and been assisted most of the times. During the veldfires in August 2011 none of the interviewed farmers in areas without an FPA received help from the fire brigade because the fire brigade was already busy somewhere else.

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One of the interviewed farmers had issues concerning the geographical placement of the farm since it was based on the border of three different districts. According to the interviewee, the operators at the emergency call centres usually referred to another district no matter where the family called for assistance.

Other stakeholders

Working on Fire is stationed at a couple of locations in the district. In those areas teams can be utilized when veldfires occur. They do not have their own transport which means the farmers have to drive to the WoF-base station and pick up a team. Not all farmers participating in the interviews had been in contact with WoF. The main reason for that was because they did not have any teams stationed in their area. The farmers who had been in contact with the teams described it as a great initiative to be able to use extra capacity during veldfires but some difficulties were also described.

When an incident like the veldfires in August 2011 occur, the District Disaster Management Centre (DDMC) coordinates the communication between the fire actors in the district. The DDMC are therefore rarely in direct contact with the affected population during veldfires. The information is instead distributed to the local disaster management centre (LDMC) from where the FPA-officials are contacted. The FPA-officials then contact the affected farmers or distribute the information to all farmers through a general call on the two-way radio. The farmers can be contacted directly from the LDMC if necessary but to keep the communication at a manageable level for the LDMC the communication goes through the FPA.

The PUK fire brigade mainly performs fire response operations on land belonging to the university. During the veldfires in August 2011 the PUK fire brigade assisted the other fire actors in the municipality with firefighting outside the university land. It is the Tlokwe Local Disaster Management Centre which alerts the PUK fire brigade to a fire scene when they are needed. The only communication with farmers, outside the university land, is therefore performed as direct communication at the fire scene.

5.2 Does the communication during veldfires, performed by the fire actors in the Dr. Kenneth Kaunda District Municipality, meet the needs of the affected population?

During veldfires the fire actors must supply the affected population with sufficient information. When the farmers were asked how they had perceived the informational messages during the veldfires in August 2011 the FPA-members had no remarks while the farmers living in areas without an active FPA experienced a lack of information. The information distributed within the FPA is seen as reliable and the farmers are often familiar with the FPA-officials distributing the information. It was neither perceived to be too much information nor too little information. The communication within the FPA was described as constant two-way communication, which makes it possible to ask for clarifying information if needed.

When the farmers were asked about their opinion on how much information should be distributed by the fire actors it was explained that it is preferred that the fire actors share all available information, even if it involves bad news. It was argued that it is preferable to be informed and possibly able to take precautions instead of being unaware and perhaps affected by something without a warning. The interviewed fire actors were asked how they view the subject and also how their organizations act when they communicate in a crisis situation. The interviewee from the Tlokwe fire brigade said that the only information they do not share immediately with the affected population is either sensitive information, e.g. detailed information regarding deaths and injuries, or information that could damage other organizations. The FPA shared their view of the subject as: *"We don't hold back on anything, we are in the belief that people should know everything"*.

The perception of the fire actors' understanding of the farmers' situation varied in the interviews. Some fire actors explained the farmers' situation just as the farmers did themselves while others showed a lower understanding by not considering the farmers' fundamental values when discussing veldfire management. In one of the interviews it was described how: *"Some of the farmers tend to protect their own farms instead of contributing to the bigger picture"*. The statement can be compared to a farmer's description of what it is like to have your property threatened by veldfires: *"When you have a fire raging on your property, your priorities will be nowhere else than in extinguishing that fire"*.

The neighbouring farmers are often the first ones to arrive for assistance when a veldfire occurs. If the fire cannot be controlled with their assistance, the fire brigade will be alerted. The FPA and the fire brigade are two different organizations with separate routines and procedures. It was described in the interviews that many times when the fire brigade arrives arguments occur. The farmers feel like they are being overruled when the fire brigade takes over the situation. Many farmers have experience with veldfires and when their livelihood is burning they want to be able to influence the situation and feel that they are in control of what is happening. A veldfire approaching the farm is a very stressful situation and something the farmers described that they never get used to. The farmers expect to be assisted by the fire brigade, but they still want to be a part of the decision-making.

When many people require help at once the fire actors need to make priorities and decide whom to assist. The fire brigade described a situation where they were extinguishing a fire in a farmer's veld and received another call about a fire threatening to burn a house. The fire brigade follows a structure of how priorities should be made when several incidents occur

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simultaneously. Possible injury to people is the first priority, the second is possible damage to property and the third is possible environmental damages. In the situation presented above, the fire brigade had to leave the current veldfire, which was only threatening the veld, to go extinguish the fire threatening a house at another farm. The result of the fire brigade leaving the first farmer was, according to the interviewee, a highly infuriated farmer swearing at the fire brigade. The interviewee from the PUK fire brigade described a similar situation as:

“People get emotional in veldfires because if it is my plot that is on fire and I know that I am going to have a financial loss because of that fire, then I’ll be very... I wouldn’t say rude, but demanding, on help.”

The problem with communicating who receives help first, and why, is described to be a difficult part of the communication process. The interviewee from the Tlokwe fire brigade explained that arguments usually occur when the fire brigade makes priorities according to the scale presented above and it results in them helping somebody who does not have a firefighting unit (bakkie sakkie) before somebody who has taken such precautions.

Also, problems with different time frames were described. A team from WoF had arrived at a fire scene and the farmer was very stressed because his livelihood was burning. The employees from WoF had taken their time to get ready resulting in a furious farmer yelling at the WoF-team. The farmer was offended by the behaviour but the reaction led to the WoF-team refusing to do anything at all, which was the opposite of what the farmer desired. As will be mentioned in the next section, the communication with WoF was described as difficult because of the preferences of communicating in different languages.

5.3 How does language influence crisis communication during veldfires in the Dr. Kenneth Kaunda District Municipality?

English and Afrikaans are the two languages used in crisis communication in the area. The fire brigade and WoF use English while the FPA use Afrikaans. The fact that two of the fire actors prefer speaking a different language than the affected population makes the crisis communication more difficult. Even if many of the interviewees could express themselves in both English and Afrikaans, most of them were only comfortable with using one of the languages in a crisis situation. It was emphasized from both the fire brigade and the farmers that speaking a language you do not feel fully comfortable with in a crisis situation is very stressful.

Some of the interviewees also indicated that it is sometimes perceived as an insult when communication is carried out in a language you do not prefer speaking. The farmers were described by some of the fire actors to be able to understand English but not wanting to speak it. The same way the fire actors were described by the farmers to be able to communicate in Afrikaans. There seems to be a mutual perception that people refuse to speak each other's languages out of principle.

5.3.1 The fire brigade

The official language of the fire brigade is English and many farmers strongly prefer using Afrikaans when contacting a fire actor. During various interviews it was brought up that the operators in the control room, managing the emergency calls for the fire brigade, are sometimes difficult to communicate with. Often neither the farmer nor the emergency operator have English as a native language. Two of the interviewed farmers described how they had to direct the fire brigade to their farm during a raging fire. It was presented as a very stressful experience in itself and having to use English instead of Afrikaans added to the experience.

In the interview with the Tlokwe fire brigade it was explained that the fire brigade use English as the language for communication with farmers. The interviewee described it as unfortunate: *"They would respond back with Afrikaans but there will always be someone using ways that we don't understand"*. It was concluded that even though many people in the fire brigade speak some Afrikaans, it is difficult to use a language you are not feeling fully comfortable with in a crisis situation.

Language barriers are described to arise when people get frustrated. An interviewee described how a non-native-Afrikaans speaker can interpret a word as somebody is swearing to him/her, while another Afrikaaner is interpreting it as just a way to express yourself.

"I think also there's more of a cultural diversity problem. Because there are certain things that you can't say to me because of my cultural background and with a person that is of a similar culture as you, you know that what you say is not offensive."

5.3.2 The FPA

The representatives from the FPA described the absolute majority of their internal communication to be in Afrikaans. When they communicate with the fire brigade through the control rooms they speak English. It was described how some farmers refuse to speak English even with the people in the control rooms and just say: *"Give me somebody who speaks Afrikaans"*. Though, it was emphasized that there are only a few farmers being that extremely reluctant to speak English.

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5.3.3 Working on Fire

Most of the people employed by *Working on Fire* have different backgrounds than the farmers and the communication was explained to be difficult. One of the interviewee's described it as: *"The farmer wants to speak Afrikaans, the youngster can most likely understand it but out of principle he wants to speak English"*.

5.4 How do already established networks influence crisis communication during veldfires in the Dr. Kenneth Kaunda District Municipality?

The FPA create an already established network which becomes more active in times of fires. The FPA-members interviewed for this study described close contact with many of the neighbouring farmers as well as the ward leaders. They work together during preparations for the veldfire season and the communication between them is generally a part of the daily life. The FPA-members, including the committee, are all involved in farming and therefore they all have knowledge and experience of the threat veldfires pose to a farm. The communication paths are already established and the farmers know what to expect from the organization.

The communication between the farmers and the fire brigade is different since it is basically limited to direct contact at the fire scene. If a farmer has questions or is looking for information, the fire brigade in Potchefstroom described that they would gladly assist, but there is no regular communication with the farmers in the area. Some farmers had personal contacts at the fire brigade, something that was described as very beneficial to be able to receive assistance.

All interviewees were asked if they knew any farmers who choose to not be members and, if they knew, why. The interviewed farmers who were not FPA-members themselves were also asked why they choose not to be a part of the FPA. Various reasons were presented: No active FPA in the area, personal issues, a lack of interest, financial reasons and a lack of understanding/knowledge about the actual benefits. Below, the identified reasons for not being a member of the FPA are presented more thoroughly.

No active FPA in the area

The interviewed farmers in Ventersdorp did not belong to an FPA during the veldfires in August 2011 because there was not an active FPA in the area. After the fires some farmers began to investigate the possibilities of creating an FPA and at the time of the interviews (March-April 2012) it seemed like Ventersdorp would soon have an active FPA in the area.

Small holdings

Owners of small holdings were in the interviews identified as common non-members. One of the fire actors, who had been out talking to farmers with small holdings, concluded that many of them do not become members because they consider themselves not to have anything to worry about. In this case information needs to be communicated since the responsibilities of the Act do not differ if you have a small holding or a large farm. If a fire spreads from one's land the owner can be held liable for what it causes.

Impermanent residents

Some of the interviewees also mentioned people not being permanent residents on their farms as common non-members. Among the interviewed farmers there were three of them who had neighbours who were not permanent residents. It was described as problematic because in their case it entailed firebreaks not being established from the neighbour's side. Another problem is that if a fire spreads from the impermanent resident's land, the neighbouring farmers will likely not be notified until the fire is already on their farm. One of the farmers added that even though his neighbours, who were impermanent residents, did not involve in preparations for the veldfire season, they were always ready to help if a fire occurred when they were there.

Financial reasons

Financial reasons were discussed as a possible reason for not joining the FPA. The majority of

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the interviewees, farmers as well as fire organizations, did not think that financial reason was a common reason to stay out of the FPA. When the FPA was interviewed they claimed that they offer people who cannot pay the membership fee during entrance or renewal to just pay a symbolic fee and then the rest as soon as possible.

Lack of interest/personal issues

Among the participants in the study, there was only one farmer who lived in an area with an active FPA and still chose not to be part of it. The reason given was personal issues with FPA representatives and a feeling that a FPA-membership did not make a difference. *"We're still of the old school, we grew up with fires. Now these youngsters come and make us have to pay"* and *"We've had fires for such a long time, we don't need to pay to put them out"* were two of the statements used to describe the situation. The conclusion of the farmer was that he and his neighbours had enough experience to take care of the fires themselves.

One of the interviewed farmers had resigned from the FPA a couple of years ago and then returned. The reason was described to be: *"It was more about the radio checks than the fires, so we just basically carried on with our own thing, just not being part of the group"*. After some time, the farmer experienced changes in the ward, including a better focus on the activities and a greater desire to work together among the farmers in the area. At that stage, the farmer decided to become a member again.

6. DISCUSSION

This chapter presents a discussion on some selected topics based on the research questions followed by a more general discussion finishing with sources of error in the study.

Channels for communication

The channels for communication used by the fire actors in the Dr. KKDM can, according to Jarlbro (1993), be seen as well adapted to the needs of the affected population. The fire actors communicate through the channels the farmers prefer to use and the two-way radio is a quick way of distributing informational messages. Everyone with a radio have the possibility to gain information and take part in discussions. The fact that it is not only used in crisis situations but in the daily life as well is another beneficial characteristic of the two-way radio. Since the farmers are familiar with the radios, the probability of effective communication is increased. The FPA-members will get involved with the veldfires even if their farms are not directly affected. Because of this, there will not be many farmers interested in using commercial radio, television or websites for information. Nor newspapers are well adapted to the nature of veldfires in South Africa, since the emergency situations do not last long enough to make it possible to for newspapers to actually contribute to the need for information.

There were farmers affected by the veldfires in August 2011 who had absolutely no means of communication during the fires. The reason for that was a lack of cell phone signal in combination with a power outage affecting the stationary two-way radio. The responsibility to keep personal communication device functioning and up to date to avoid such situations lies with the farmer. This situation shows the importance of being able to communicate in a crisis situation.

The farmers in the area can be seen as a fairly homogenous group compared to the general population of South Africa. Flodin (1993) claims that even homogenous groups develop an increased understanding of a message if various channels for communication are used. The author believes that Flodin's statement rather concerns situations where the affected population receive messages through mass media or other channels which do not involve personal contact. When it is not possible for everybody in the affected population to stay in direct contact with authorities or organizations, gathering information from various channels is particularly valuable. In the situation of the veldfires, there is constant two-way communication between the FPA and the farmers. As long as questions can be answered and the affected population is content with the amount of information, a need for additional channels for communication is not perceived.

Meeting the needs of the affected population

When the fire brigade have to make priorities of whom to assist upset feelings occur. If the fire brigade leaves a farmer with a burning veld to go and assist somebody who is by the fire actors estimated to be in a greater need of help, the decision to leave the farm is often taken personally. Explaining matters such as an organization's priorities at a fire scene is not optimal. The farmer will very likely be discontent as long as the decision includes not assisting him/her with the raging fire. Instead, it needs be communicated before and afterwards why the fire brigade act as they do.

If the fire brigade takes over the firefighting at the arrival to a veldfire scene without proper communication, the farmer experiences a lack of control. According to Enander (2010) it is

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therefore important that the arrival is smooth and respectful to meet the farmer's need for control and influence. The farmers still need to be part of the decision-making process even after the fire actors have arrived at the veldfire scene. That can be arranged by constantly keeping a dialogue between the different stakeholders where everybody is informed on all decisions.

The affected population's knowledge about extinguishing veldfires must be considered by the fire brigade when they arrive at a fire scene. As was mentioned in the interviews, many farmers have numerous years of experience with veldfires. The fire brigade are trained professionals in firefighting but most likely they do not know the areas as well as the farmers do. It is therefore important use the knowledge of all stakeholders to be able to perform a successful joint operation.

To make it possible for the fire brigade to adhere to the needs of the affected population a dialogue needs to be established. It is not realistic that the fire brigade should keep a dialogue with each farmer in the area but the network created by the FPA can be utilized. The FPA-officials need to be in constant communication with the fire brigade and the ward managers could attend meetings with the fire brigade as representatives for the farmers in each ward. What will be problematic if the communication with the fire brigade goes through the FPA is that the non-members will not be included. It was mentioned by the representative from the fire brigade in Potchefstroom that the farmers are always welcome to contact the fire brigade if they have questions. But, according to a study performed in the Dr. KKDM (Fourie, 2011), the community still often feels like they do not have the mandate to initiate contact with the fire brigade. Therefore, it would be very valuable if the fire brigade reached out to the farmers to make sure that they are aware of the possibility of utilizing the knowledge of the fire brigade.

Language and culture

The fact that some of the stakeholders prefer communicating in Afrikaans while others prefer communicating in English is described to be a source of frustration. In the interviews it was argued by fire actors that the farmers can speak English but they refuse. There were farmers sharing the same hypothesis about the fire actors, that they are able to communicate in Afrikaans but deny it out of principle. In all interviews, using a language you are not fully comfortable with was discussed and the interviewees agreed upon the difficulties. What is not really seemed to be perceived among the stakeholders is that the fire actors find it just as difficult to use Afrikaans as many farmers find it to use English in stressful situations. This needs to be communicated since the general perception today is that the language preferred by the receiver is not spoken because of arrogance and not because the person does not feel comfortable using the language. It must be remembered that communicating in daily situations differs from communicating during crises and emergencies when the level of stress is often much higher.

A number of situations could possibly be managed better if the fire actors always had an Afrikaans-speaking person able to assist when communicating with farmers in the area. Even if it probably could lower the frustration in some situations, such a solution is not believed to access the core of the problem. Many times it is not the language itself which causes problems but what is read into not using the language the other person prefers. What is important is that the stakeholders develop an understanding for each other's situations. It needs to be communicated why the stakeholders only want to use English/Afrikaans to reduce the risk of initiating each veldfire situation with irritation and frustration related to language use.

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Communication can establish an understanding among the stakeholders, which could possibly have a mitigating effect on the issue, even if it will not solve the problem itself.

Trust and credibility

It was described in the interviews how a lack of trust between the fire brigade and the FPA have caused the fire actors to enter each other's areas to perform duties outside their responsibilities. The reason why the situation occurs was described to be a lack of trust that the other stakeholder will properly complete their tasks. If the FPA-officials express a lack of trust in the fire brigade, there is a risk that it passes on to the FPA-members. The result could be further difficulties at the fire scene because of negative preconceptions among the affected population. The communication, as well as the relation, between the fire actors is therefore also important to the affected population as it affects the cooperation between all stakeholders at the fire scene.

There had been incidents in the study area when the affected population had grabbed the fire brigade's equipment when they arrived at a fire scene to try to use it themselves. It can both be seen as a lack of trust assuming that the fire brigade will not perform their duties properly, but also as a lack of knowledge and/or understanding of the procedures of the fire brigade. As described by Hedquist (2002), all stakeholders need to be clear on each other's responsibilities and capacities to avoid misunderstandings affecting the relationship between the stakeholders and resulting in joint operations being poorly conducted.

If the affected population does not perceive trust and credibility in the relationship with the fire actors it can, as described by Jarlbro (1993), have negative implications on the crisis communication. The fact that some of the fire actors belong to other cultures and have different backgrounds than the population affected by the veldfires, can make it more difficult to relate to each other's situations. The perception of a person's credibility can, according to Hedquist (2002), be affected by factors such as skin colour and nationality. In South Africa there is still a lot of mistrust remaining between different racial groups since the apartheid era. Preconceptions sometimes create negative starting points which make it difficult to establish trust and credibility. To develop trust and credibility between the different stakeholders, communication is a key factor. The fire actors and the affected population need to create a dialogue where mutuality and respect can grow. Communication in everyday life is favourable since it can help create communication paths to use when veldfires occur.

The value of already established networks

During the veldfires in August 2011, the FPA-members were satisfied with the amount of information while the farmers living in areas without FPA's would have wished to receive more information. The fact that the FPA-members always have the opportunity to contact somebody in the organization, when in need for assistance or information, is very valuable. One of the parameters characterizing successful communication being adhered to is the availability that comes with the constant two-way communication in the FPA.

When a farmer receives assistance from the FPA, the first people arriving will likely be the closest neighbours. Many of the farmers in the study were in rather close contact with the farmers nearby and when there is a relationship established it is easier to meet the needs of the affected population. Within the FPA, the nearby farmers often have experience from extinguishing veldfires in the area and therefore know the terrain very well. They do not need

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the same assistance to locate the farm as was sometimes described to be a very stressful factor with receiving help from the fire brigade.

Unfortunately there was only one person taking part in the interviews that lived in an area with an FPA but still chose to not be a member. Because of this, the results were based on the perceptions of the stakeholders and their conversations with non-members. Some of the farmers had neighbours who were not members of the FPA but still used two-way radios and prepared firebreaks. In that case it was not seen to make a difference whether the neighbour was an FPA-member or not. What was instead described to be difficult was to live next to impermanent residents or state land. The reason was that firebreaks were generally not prepared and if a fire would spread from that side, nobody would be there to notify you about it coming. What can be concluded is that the network created by the FPA, and the communication facilitated within it, are valuable factors to the farmers. To many of the farmers it did not matter if their neighbours were members or not as long as they used two-way radios and prepared firebreaks. The person who chose to not be an FPA-member claimed that the FPA did not add any value because the neighbours were already in good contact and they knew how to work together and extinguish fires. What needs to be added there is that the FPA create a network that goes beyond the neighbouring farmers and there are greater resources available.

Another interesting matter described in the interviews was the fact that various interviewees chose to use personal contacts within the fire brigade instead of contacting them through the FPA or calling the emergency call centre. Many farmers described having difficulties communicating with the emergency call centre and the fact that they do not communicate through the FPA could be that they immediately want to make sure that there is additional assistance alerted in case they will need it. As described by Larsson (2008), crisis communication can be initiated faster when the communication paths are already established and the farmers know how to act and whom to contact. Also, when personal contacts are used difficulties with the location of the farm or which language to communicate in will likely not occur. Thus, there is a perfectly rational explanation to why the farmers use personal contacts to alert the fire brigade. But, even if that communication path creates a fast and easy way of initiating crisis communication for the individual farmer, it must still be ensured that the affected population can communicate properly with the individuals at the emergency call centre as well as with the fire brigade.

General reflections

Two of the fire actors in the study, the FPA and WoF, only work with veldfires while the fire brigade also have other duties, such as structural firefighting and traffic accidents. The three fire actors do not work together on a daily basis. The cooperation is limited to veldfires and at the fire scene they are expected to perform successful joint operations even though their working procedures and routines differ. Not all veldfires cause crises and the ones with smaller magnitudes are more common than the larger ones. The veldfires with a smaller magnitude can create a good opportunity for the stakeholders to practice the cooperation to be better prepared when a crisis situation occurs.

Besides the communication at the actual veldfire scene it can be very valuable to perform trainings. The scale of the training can vary from only performing discussion seminars to full-scale scenarios. According to Larsson (2008), it can be highly beneficial to involve the affected population as well. The fire actors meeting the farmers is an important step in building networks

6. DISCUSSION

where credibility and trust can be developed. The fire actors can learn about each other's routines and procedures to be able to create a better cooperation at the fire scene.

Planning and preparing are crucial elements in crisis management and crisis communication should be an integrated factor in the process. In crisis management research, the difficulty of not knowing what will happen is often concerned. Crises can be unexpected in different ways, it can either be the incident itself being unexpected, the magnitude of the incident, or a combination of the two. What made the veldfires in August 2011 a crisis situation was the magnitude. The fire actors in the study area know that veldfires will occur every year. It is therefore important to make use of previous experiences when planning for the next veldfire season. As mentioned by Falkheimer et al (2006), it is beneficial to have a heterogeneous planning group and a cooperation between the fire actors in the Dr. KKDM could therefore be highly advantageous.

Since veldfires in the Dr. KKDM are of a rather short duration compared to veldfires occurring in other parts of the world, for example California (US) or Australia, the assistance needs differ. In the emergency phase the need for assistance in the study area is limited to the directly affected population. If the veldfires would threaten the central parts of Potchefstroom instead of the rural areas, the communication would have to be performed differently. The two-way radio would no longer be the primary mean for communication and the FPA would not be involved in the same way as when the rural areas are affected. If the veldfires would be of a longer duration there might also arise other needs, such as shelter and food for the directly affected population.

Sources of error in the study

The fact that the study is based on the perceptions and assessments of the interviewed individuals brings uncertainty into the study. Many of the farmers, who normally prefer using Afrikaans, performed the interviews in English even though they were offered the possibility to speak Afrikaans. A possible source of error could therefore be misunderstandings due to neither the interviewee nor the interviewer communicating in their native language. One thing which was particularly difficult for the interviewees was the English names of the organizations (the FPA and the fire brigade) which were often mixed up in the beginning of the interviews. To make sure this was communicated properly, the interviewer used the Afrikaans words for the organizations to make sure the descriptions were related to the right organizations.

As mentioned in the first chapter, the study is based on fourteen interviews with a total number of twenty seven participants. Additional interviews could have been beneficial to achieve more reliable results but the time available and the extent of the thesis had to shape the limits of the study. If the opinions of the interviewed FPA-members are separated from the interviewed non-members, the opinions were still reasonably uniform within each group.

The results from the study might not be *directly* applicable to other locations but some of the results are still believed to be beneficial to other stakeholders and other locations. First of all, the general difficulties with communication and mistrust between different stakeholders are believed to exist in similar ways in many other locations in South Africa and in the rest of the world. Suggestions on how to improve those factors could therefore be beneficial to others than the stakeholders involved in the study.

6. DISCUSSION

7. CONCLUSIONS

The conclusions of the study are presented in this chapter. The structure follows the research questions.

Which channels for communication and communication paths are used during veldfires in the Dr. Kenneth Kaunda District Municipality?

The two-way radio is the most important channel for communication during veldfires. Cell phones are also used but not as widely as the two-way radios. The channels for communication used by the fire actors are well adapted to the needs of the affected population.

The most important communication path for the farmers is the one with the FPA. The communication with the fire brigade is in most cases limited to the communication at the fire scene. A couple of farmers had personal contacts within the fire brigade which were utilized when they needed assistance.

Does the communication during veldfires, performed by the fire actors in the Dr. Kenneth Kaunda District Municipality, meet the needs of the affected population?

The FPA use the need of the affected population as the guiding objective in communication during veldfires. The communication between the stakeholders is performed as dialogical two-way communication which is favourable since the farmers always have the opportunity to ask questions if needed. The FPA-officials are also farmers and share many similarities with the affected population, which makes it easier to relate to their situation.

The fire brigade do not use the need of the affected population as the guiding objective in communication. The communication between the farmers and the fire brigade is limited. Difficulties are based on a lack of understanding for each other's situation. To improve the relationship communication is a key factor. The credibility of the fire brigade was low among many of the stakeholders and one of the issues was the fact that they prefer communicating in different languages.

How does language influence crisis communication during veldfires in the Dr. Kenneth Kaunda District Municipality?

The communication between the different stakeholders is affected negatively by the stakeholders' preferences of communicating in different languages. The question causes frustration among the stakeholders and many of the interviewees perceive the choice of language to be based on arrogance. Despite that, both the farmers and the fire actors express that they do not feel comfortable communicating in a language they do not fully master in a stressful situation. The language use is often related to race and there is still a lot of mistrust between the different racial groups in South Africa.

How do already established networks influence crisis communication during veldfires in the Dr. Kenneth Kaunda District Municipality?

Already established networks, such as the one created by the FPA, have proven to be highly beneficial when veldfires occur. The crisis communication can be initiated faster when the communication paths are already established and the farmers know how to act and whom to contact. The network makes the farmers less vulnerable to veldfires than farmers in areas

7. CONCLUSIONS

without an active FPA. The reason the vulnerability is decreased is the fact that the FPA-members always have the opportunity to contact somebody in the network over the two-way radio when in need for assistance or information. Farmers in areas without an active FPA have to rely on the network they have created with their neighbours and the possible assistance from the fire brigade.

Some of the interviewed farmers had established personal contacts at the fire brigade which made the communication between the stakeholders faster and less complicated. That communication path was seen as very valuable when veldfires occur since the communication with the emergency call centre was often described as dysfunctional.

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Interviews

Interviews performed in the study.

Fire actors:

- The Potchefstroom Fire Protection Association: March 20. (3 persons)
- The Tlokwe fire brigade: March 22. (1 person)
- The fire brigade & the Fire Protection Association in City of Matlosana: March 23. (5 persons)
- Tlokwe Local Disaster Management Centre: March 29. (1 person)
- Dr. Kenneth Kaunda District Disaster Management Centre: March 23. (1 person)
- PUK Emergency Services: April 5. (1 person)
- FPA-officials with experience of WoF: April 12. (2 persons)

Farmers:

March 25, 2012.

- Farm 1: Potchefstroom. (2 persons)
- Farm 2: North West/Gauteng. (2 persons)
- Farm 3: Ventersdorp. (1 person)

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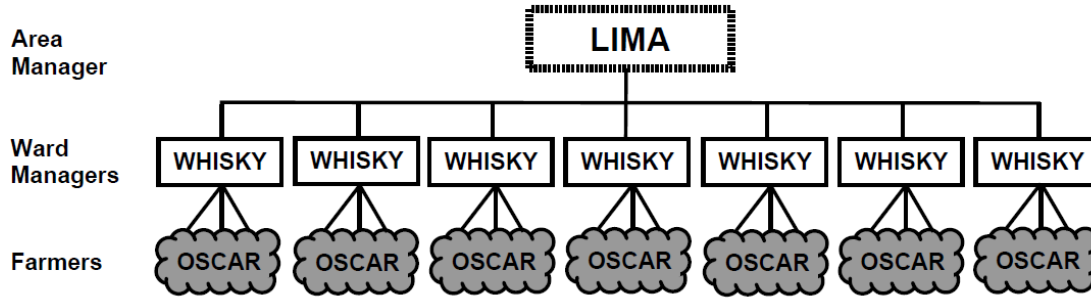
- Farm 4: Ventersdorp. (3 persons)
- Farm 5: Potchefstroom. (3 persons)

April 18, 2012.

- Farm 6: Potchefstroom. (1 person)
- Farm 7: Potchefstroom. (1 person)

Appendix A. Organizational structure of the PFPA

The Potchefstroom Fire Protection Association



Appendix B. Map of the study location

The map below shows South Africa with Dr. Kenneth Kaunda District Municipality in red and the rest of the North West Province in blue.



Figure 3. South Africa with North West Province and Dr. Kenneth Kaunda District Municipality highlighted.

Appendix C. Interview guide – Farmers

Interview guide – Farmers

The interview starts with informing the interviewee about the background of the project (a separate leaflet with information about the study is handed out) and what the answers will be used for. The interviewee is then asked for approval to record the interview.

Introduction

Name:

First language:

Other languages understood/spoken:

Contact information (e-mail) for possible additional questions:

Questions

1.

Were you affected by the veldfires in August 2011? Have you been affected by other veldfires?

Which fire actors are you normally in contact with during veldfires? How is the communication performed?

How do you experience the communication with the fire actors during veldfires?

Are you in contact with the fire actors before/after veldfires?

2.

Which channels for communication do you use during veldfires? Which is the most important one?

Do you consider the information from the fire actors to be meaningful/understandable/credible?

Are you satisfied with the amount of information you receive during veldfires?

Which language do you use for crisis communication? Did you get sufficient information in the language you prefer using?

Do you feel that the information you receive is coordinated or is there ever contradictory information?

Was there any information that you requested but never received?

3.

Do you ever experience difficulties with crisis communication?

If you have questions or information for the fire actors during veldfires, do you know how to get in contact with them?

Closure

Anything else you want to add?

Appendix D. Interview guide – Fire actors

Interview guide – Fire actors

The interview starts with informing the interviewee about the background of the project (a separate leaflet with information about the study is handed out) and what the answers will be used for. The interviewee is then asked for approval to record the interview.

Introduction

Name:

Profession/Position/Title:

First language:

Other languages understood/spoken:

Contact information (e-mail) for possible additional questions:

Questions

1.

What is your role in crisis communication during veldfires? Were you active during the veldfires in August 2011?

Could you give me a short background of how communication with farmers is performed during veldfires?

How do you experience communication with farmers during veldfires?

Does your organisation do anything to create a dialogue with the farmers before/after veldfires?

How do you find out what the affected population requires information about?

2.

Which are the main channels for communication used during veldfires? Through which channels do you reach the most people?

Do you have the impression that the affected population is satisfied with the amount of information they receive?

Which language do you use for crisis communication?

Does your organization coordinate your communication with the other fire actors?

3.

Do you ever experience difficulties with crisis communication?

If the affected population have questions or information for your organization during veldfires, how can they get in contact with you?

Do you ever do trainings on crisis communication? If so, which actors would take part in these trainings?

Closure

Anything else you want to add?