



Leaking or Waterproof Organization?

Babati Town and the Current Capacity to Handle Floods

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Abstract

The purpose of this study is to identify the existing organizational management capacity dealing with floods in Babati Town. In order to understand the capacity for dealing with floods, a survey of crisis management work from the analytical framework of the four different phases *prevention, preparation, response* and *aftermath* in crisis managements is made.

The study assumes a theory consuming design, i.e. that the empirical reality is at the centre of the research. The time of the study was from February 19 to March 5, 2010.

The main research question is: *What crisis management capacity exists to manage floods in Babati town?*

The thesis reveals that the biggest problem in Babati's crisis management capacity is the unclear division of responsibility. The consequence of this is that necessary actions are not taken to prevent flooding. Regular meetings defined decision-making structures and exercises related to flooding do not exist. It is difficult to assess if and where the critical decisions are made and by whom. The willingness to learn new skills amongst responsible persons in Babati is also questioned.

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1. Introduction

In northern Tanzania, a town called Babati is situated at a lower elevation than a nearby lake. The town is therefore intermittently affected by flooding as the area periodically has very high rainfall and as the depth of the lake is continuously reduced by soil erosion and accompanying sedimentation. This is a reality facing the Babati citizens during rain rich years.

Floods have been documented since 1964 and have at times affected the entire town.¹ It is a recurrent crisis phenomenon with the consequence that people drown, that houses and bridges are washed away inducing and increasing both erosion and sedimentation. The local authorities have implemented projects, sometimes funded by the Swedish development agency SIDA, to rehabilitate the town after the flooding damages.

Babati town is responsible for maintaining structures and rehabilitating the town in the event of flooding. Both SIDA and external consultants have given recommendations of efficient ways to improve local institutions to deal with the flooding problem. These external actors recommend the town council to create new programmes and organizational processes to prevent damages from flooding but no funds have this far been allocated.² How is Babati town council currently dealing with these problems and who is responsible? How will this issue be resolved?

In order to get as close to the core problem as possible and to understand the existing capacity for dealing with floods, a survey of crisis management work from the analytical framework of the four different phases in crisis managements is made.

To grasp the entire picture we must always begin with the parts.

¹ C.Å Gerdén, G.M.O Khawange, J.M Mallya, J.P Mbuya, R.C Sanga,(1992) *The wild lake. The 1990 floods in Babati Tanzania- rehabilitation and prevention*. Regional Soil Conservation Unit Swedish International Development Authority Nairobi

² Example Orgut for SIDA (2008) *Final Technical assistance report 2002-2007*, (2008) Land management programme (Lamp) Tanzania. 2002-2007.

1.1 Objective and problem formulation

The purpose of this study is to identify the existing organizational management capacity dealing with floods in Babati town. The study highlights the current crisis management capabilities through study of the organization and the measures undertaken to deal with stressful quantities of water. The empirical data are analyzed from a theory consuming³ and descriptive design. The method enables a review of the management capacity based on the phases of *prevention, preparation, response and aftermath*, which all are part of the Crisis management analytical structure.⁴

The main research question is: *What crisis management capacity exists to manage floods in Babati town?*

1.2 Delimitations and Selection of informants

1.2.1 Delimitation in time and place

The study of the crisis management capacity is based on that flooding is the main problem and there will not be any study of Babati town's capacity to deal with the management of other problems that affect the area.

A key distinction is that the survey and the analysis will be based on information on the existing crisis management organization that manages the flooding problems.

The spatial dimension of the study encompasses the town of Babati as the study only considers the organization of and the actions taken by the town. The time period of the study extends from is February 19 to March 5, 2010.

Due to time constraints there will be no effort to examine the emergence of the crisis management activities, only to describe the current activities made in the area

³ Esaiasson, Peter Gilljam, Mikael, Oscarsson, Henrik Wägnerud, Lena (2007) *Metodpraktikern - Konsten att studera samhälle, individ och marknad* p 99 [rev.] uppl. Stockholm: Norstedts juridik 2007

⁴ Method definitions are worked up by project called *Functional Security and Crisis Management Capacity in the European Union: Setting the Research Agenda*. It is funded by the Forum for Security Studies (EUROSEC) conducted by the team Arjen Boin, Magnus Ekengren and Mark Rhinard.

1.2.2 Selection of cases

The town of Babati and its bureaucracy have several pressuring issues besides flooding to consider. One of them is the road construction-taking place in the area, and that will affect traffic distribution and human exposure to danger from motor vehicles.⁵

Road safety could have been studied to demonstrate the existing crisis management capacity in Babati. Before the topic of the study was decided upon, Maria Rynér, who is a researcher at the Department of Physical Geography and Quaternary Geology at Stockholm University, was contacted. Her area of research is linked to Lake Babati. Through her knowledge and access to information on the flooding, the topic was made known to me. The Rynér research project needs support of additional information on the issue and this study will hopefully contribute to this.⁶

The descriptive nature of this study is interesting, as the town lately has undergone some important changes. Formerly the activities were undertaken and funded by external organizations like SIDA. Today the organization is based solely on local accountability principles without financial incentives from the North.⁷ Babati town council states that current activities are conducted in the same spirit as when SIDA was active in the area. It is therefore fruitful to examine if the previously existing programs and activities still exist. Lake Babatis geographical influence in the area was the main reason to study the crisis management organization of Babati town, as the town is located below the water level of the lake. The town is especially vulnerable because of this and floods have been documented since 1964.⁸ Flooding occurs worldwide and is a widespread problem. Because of climate change flooding will probably increasingly affect people and the environment.⁹

The study of Babati and its prevailing crisis management capabilities are valuable both for the society and the academy. The societal benefit offered by the study is an analysis of the effectiveness of the society's crisis management approach and pro-active action in the context of the floods.

⁵ Currently conducting a large aid projects funded by China, where a paved road known as The Great Road, Build by Africa to facilitate road transport in the area. Source-Hellström, Jerker (2009) *China's emerging role in Africa, A strategic overview* p 17, FOI Swedish Defence Research Agency 164 90 Stockholm, Sweden

⁶ Webpage, (2010-04-19) <http://people.su.se/~ryner/research.htm>

⁷ Orgut for SIDA (2008) *Final Technical assistance report 2002-2007*, (2008) s 18

⁸ Gerdén, Khawange, Mallya, Mbuya, Sanga,(1992) *The wild lake. The 1990 floods in Babati Tanzania- rehabilitation and prevention.* p 12

⁹ Webpage IPCC (2010-04-13) http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch9s9-5-3.html

In this way, a better understanding is created of how preventive work is conducted to manage flood crises. The study enables detection of shortcomings in the organization, and gives recommendations of changes that could lead to better outcomes for affected parties.

From the research perspective there is an opportunity to increase the knowledge of Lake Babati and the activities around the lake. In addition, the study of the Babati town organization and actions could be useful for operative actors and town planners in communities with similar problems.

To give a common understanding of the content of this work, the underpinning core concepts of the work will be defined.

1.3. Outline of the study

The first chapter contains an introduction where the problem area is framed and concretized and the research question along with relevant delimitations and the selection of a case is presented.

The second chapter presents the theoretical approach of the study. To operationalize the study an initial definition of terms and concepts is made and the theoretical approach that explains the Crisis Management framework is given. Finally the analytical framework used in the study, and the challenges it faces are presented. The third chapter describes the methods used and how informants were chosen. The context is found in chapter four where past events are described and background information given offering an empirical understanding to enable the reader to follow the arguments of the analysis more easily. In chapter five both results and analysis of the study are presented which is consistent with the qualitative character of the study. The conclusion and concluding remarks including visions for future research are given in chapter six and finally all referenced material are listed in chapter seven.

2. Theory

2.1 Definition of concepts used

2.1.1 What is meant by capacity?

There are different forms of capacity as well as different understandings of the concept depending on the context. In this essay *capacity* is defined as based on organizational potential and capacity of the performed work. The primary function of this paper is not to identify existing operational material, i.e. lenses or pumps, although it is mentioned. Particular focus is put on procedures and the organizational capacity of finding aiding resources, coordinate operations and maintain decision-making structures. *Crisis management capacity* means the organizational ability to operate in the phases: prevention, preparation, response and the aftermath during a crisis.¹⁰ This will be discussed further together with the presentation of the *analytical framework*.

2.1.2 What is a crisis?

The concept of crisis is used in many contexts and scales. In December 2009 a crisis of confidence between the world's political leaders, state actors, and environmental organizations was revealed as a mutual consensus of a common climate treaty never was agreed. Charles Hermann stated in the 1960s that the word crisis was affected by what he called "*subjective elements such as primary objectives, limited decision time, and surprise*."¹¹ Over time, threat became a parameter, and in the 1990s-crises were mainly associated with the state and the threat of military intervention. Given that the states perspective on crises and their implications is that it is the decision maker's own thoughts, beliefs and perceptions that determine when the state of crisis occurs. In a state of crisis the following seems to be experienced:

- Significant values are at stake
- Limited time is available
- High probability for military intervention exists¹²

¹⁰ Boin, Arjen, Ekengren, Magnus & Rhinard, Mark (2006). *Functional security and crisis management capacity in the European Union*. Stockholm: Försvarshögskolan

¹¹ Sundelius, Bengt & Stern, Eric (1997). *Krishantering på svenska: teori och praktik*. p 12, Stockholm: Nerenius & Santérus

¹² Stern, Eric K. (1999). *Crisis decision-making: a cognitive institutional approach*. p 6, Diss. Stockholm: University

Others challenge this definition as Rosenthal et al, 1989. Their definition is frequently used by social commentators and researchers. They state: "*A serious threat to the basic structures or fundamental values and norms of social systems which under time pressure and highly uncertain circumstances necessitate making critical decisions.*"¹³ Another definition is that a crisis exists when decision-makers have a dilemma connected to the following points:

- Significant values are at stake
- Limited time is available
- The circumstances are characterized by significant uncertainty.¹⁴

This definition of crisis was developed by Bengt Sundelius, Eric Stern and Fredrik Brynander and the definition will be used in this study. The choice of definition is motivated by the study approach to describe Babatis organizational and structural crisis management capacity to handle floods.

2.1.3 Why are floods in Babati a crisis?

Based on the choice of definition a crisis is experienced when a rapid response is needed and where significant values are at stake. These can be economic values, human lives, but they are also closely related to legitimacy. The decision-maker must choose the course of action to be followed, and decide how and who will deal with the flooding threat. If the bureaucratic organization in Babati is unable to protect societal core values, the citizens' confidence to the political system will decline. To handle huge amounts of water is categorized as a time emergency during insufficient information access. How rainfall will affect the surroundings cannot be determined beforehand, but the society can be prepared to handle the situation and to be able to take preventive measures¹⁵.

The focus of this-study is if Babati town council manages to protect the town against floods and handle huge amounts of rainwater or if they fail to realize this societal goal. The flooding threatens public core values negatively by creating drowning casualties, washing away land, killing plant life, destroying buildings and demolishing infrastructure.

¹³ Rosenthal, Uriel, Boin, R. Arjen & Comfort, Louise K. (red.) (2001). *Managing crises: threats, dilemmas, and opportunities*. p 6 Springfield, Ill: Charles C Thomas

¹⁴ Sundelius, Bengt & Stern, Eric (1997) *Krishantering på svenska: teori och praktik*. p 13

¹⁵ Boin, Ekengren, & Rhinard, (2006). *Functional security and crisis management capacity in the European Union*. p 17

2.3 Theoretical approach

Crisis research examines the phenomena of crises from different perceptions, characters, pitfalls and challenges.¹⁶ Previously people used to explain natural disasters and crises in religious terms as the will of God. People have therefore not found it relevant to work with crisis prevention and efforts to try to find mitigation in different situations have been limited.¹⁷ From a social science point of view crisis management research is relatively young.

It has been difficult to problematize and scrutinize how crises arise, how they originate and what they implicate. This was due to the difficulty to find analytical models able to encompass all the complex affecting factors.¹⁸ Crises transcend several sectors as societies experience crises regardless of compartmental boundaries, actors or levels of bureaucratic structures.¹⁹

Today's modern crises are not to be perceived as single events as the actual situation is affected by the processes containing policies, interdependence and complexity.²⁰ It is therefore considered appropriate to study crises from a multidisciplinary perspective in order to analyze all types of challenges of the crisis management work involved. Organizationally crisis management is studied from a preparation, operational capabilities, challenges and opportunities view to deal with stressful situations. Crisis theory will shed light on whether the lessons from past events can be traced, and the circumstances in which this can best be created and accepted.²¹

2.4 The concept of Crisis Management

Crisis Management can conceptually be explained as a cyclical structure without beginning or end. This requires a mapping of all stages of the crisis. The distinction is initiated on a phase in which *prevention* activities such as risk analysis is included. It may also involve the communication within a system and mapping to identify and track situations, which potentially can lead to severe stress and in the worst-case lead to a crisis.²²

The next step involves readiness to tackle an event that occurs regardless of the measures already taken. Routines are prepared to create the most optimal organization to handle a possible crisis. Activities in this category are exercises and training.

¹⁶ Boin, Ekengren, & Rhinard, (2006). *Functional security and crisis management capacity in the European Union*. p 7-17

¹⁷ Boin, Ekengren, & Rhinard, (2006). *Functional security and crisis management capacity in the European Union*. p 6

¹⁸ Rosenthal, Boin, & Comfort, (red.) (2001). *Managing crises: threats, dilemmas, and opportunities*. p 5

¹⁹ Rosenthal, Boin, & Comfort, (red.) (2001). *Managing crises: threats, dilemmas, and opportunities*. p 6

²⁰ Rosenthal, Boin, & Comfort, (red.) (2001). *Managing crises: threats, dilemmas, and opportunities*. p 6

²¹ Rosenthal, Boin, & Comfort, (red.) (2001). *Managing crises: threats, dilemmas, and opportunities*. p 120

²² Olsson, Stefan (red.) (2009). *Crisis management in the European Union: cooperation in the face of emergencies*. p11
Berlin: Springer

The operational activity carried out when an emergency occurs has the purpose to minimize the impact on core values are found in the *response* category. This category includes resource capacity and the ability to act with existing funds. Strategic communication and coordination between affected parties and information targeted through media to the community is also part of the strategy. After the crisis event has occurred and been taken care of it is followed by *aftermath*. The focus in this stage is reconstruction and post-incident analysis.

To establish exploratory and sustainable management structures it is undesirable to statically separate the four phases of crisis management, they should instead overlap to create a well-functioning organization.

2.5 Analysis Framework

The study focuses on crisis management capacity in Babati to meet the needs of the entire cycle of Crisis Management.²³

I have used the model in a previous study focusing on the mapping of the EU's general crisis management capacity to protect European citizens in third countries. That study was partly sponsored by the Swedish Civil Contingencies Agency (MSB) in 2009 and processed and published in the Swedish Defence College in March of 2010.²⁴

The overarching idea of this research is to map the overall picture of Babati's crisis management. This creates the possibility to analyze the crisis management capacity that predisposes the different phases of prevention, preparation, response and the aftermath. Instead of studying Babati's overall crisis management capability, the study focuses on the particular threat of flooding.

Issues about the usefulness of the analytical framework as an analytical tool that might have risen during the research process will be discussed under concluding remarks.

The study of Babati was based on observations made during 12 days and allowed a mapping not only of the direct operational activities of the crisis management capabilities, but also of the organizational base. This was made possible by semi-structured interviews conducted with strategically selected informants. The essay has a theory-consuming approach, which means that the empirical data are at the focus of the investigation rather than an aim to create a further generalized conclusion based on theoretical development.²⁵

²³ Boin, Arjen, Ekengren, Magnus & Rhinard, Mark (red.) (2007). *Protecting the European Union: policies, sectors and institutional solutions*. p 3 Stockholm: Försvarshögskolan

²⁴ Sjödin, Emma (2010) *Skydd av den Europeiska medborgaren i tredje land "MIC och Mumbai"*, Anna Lindh biblioteket.

²⁵ Esaiasson, Gilljam, Oscarsson, Wängnerud, (2007) *Metodpraktikern - Konsten att studera samhälle, individ och marknad* p 99

The organizational focus of the analytical tool means that environmental impacts and issues are not studied.

The four different analytical elements:

- **Prevention:** Identification of an imminent threat, the possibility to respond to the crisis before its emergence, reading the patterns and seeing the early warning signals.
- **Preparation:** preparing for the unknown, establishing plans and the proposed procedures, working accordingly to the plans and updating these according to practical experiences and discussions.
- **Response:** critical decisions and their implementation.
- **Aftermath:** Lessons from past crises and strengthening the weakened legitimacy of governmental institutions.²⁶

2.6 The analytical framework and its challenges

2.6.1 Prevention:

A systematic approach is necessary to succeed in creating an early recognition system and a functional mapping of situations that may threaten core values.²⁷ To prepare for unknown situations means to deal with extreme complexity.

The organization that is responsible for handling a specific task in a crisis should have competence and capacity to map information early in the process to foresee coming situations. The organization needs to be able to prioritize information and choose how to communicate the information in the most efficient way.

There can sometimes be an economic explanation as to why it may be problematic from a policy perspective to work with and advocate preventive measures. A political mandate is usually temporary. Preventive management measures are long-term investments. Incentives to invest in measures that are not profitable in a short-term perspective are few.²⁸

Knowing which equipment is best suited for the problem and to create the most efficient organization possible to deal with crisis is therefore a great challenge.

²⁶ Boin, Ekengren, & Rhinard, (2006). *Functional security and crisis management capacity in the European Union* p 6

²⁷ Boin, Ekengren, & Rhinard, (2006). *Functional security and crisis management capacity in the European Union*. p 43

²⁸Rosenthal, Boin, & Comfort, (red.) (2001). *Managing crises: threats, dilemmas, and opportunities*. p 16

Prevention involves:

- Detecting early warnings of crises through the use of early warning systems.
- Performing rapid and effective interventions to stop escalation.

2.6.2 Preparation

To prepare for future threats by learning from past crises is a common approach when planning preparatory measures. In an utopian world, this would mean that crisis never would take place in an organizationally previously processed event. Although using standardized procedures within organizations it is important to consider the danger of a too rigid institutional working procedure. Crises are complex phenomena and adjustments are often required when facing new circumstances in problem solving.²⁹

Babati town and its existing organizational structure to deal with flooding involves many actors. Both the Tanzanian road network organizations, as well as bureaucratic and local staff are involved, which creates so-called horizontal relationships. An unclear responsibility structure hinders effective rules of procedure.

Crisis management is often framed locally and the event is often considered to be owned by actors closest to the event. To create a centralized organization in the early stage of a crisis preparing to handle a situation before it escalates further is difficult because individuals do not send status reports upwards in the hierarchal structure.

Pressure expressed by the town citizens can also be a problem to handle if the legitimacy of the preventive activities does not exist. If preventive measures are below standard, the confidence of the crisis management organization could be lowered or disappear.³⁰

Preparation involves:

- Lessons learned from past crises to be better prepared for the next crisis.
- Implementation of a working procedure to prepares for the unknown.³¹

2.6.3 Response:

Different factors affect the decision-making in the political sphere. The position in the organization as well as where in the structure the decisions are taken and how dependent the

²⁹ Boin, Ekengren, & Rhinard, (2006). *Functional security and crisis management capacity in the European Union* p 37

³⁰ Boin, Ekengren, & Rhinard, (2006). *Functional security and crisis management capacity in the European Union*. p 37

³¹ Boin, Ekengren, & Rhinard, (2006). *Functional security and crisis management capacity in the European Union*.p 34

decisions are of the personal understanding of the decision-maker could affect the outcome of the decision-making process.³² Therefore politicians need to be updated and have the ability to create action and to remove unnecessary data.

To create successful outcomes, correct and relevant information from reliable sources needs to reach the decision makers.

Response involves:

- Ability to make critical decisions,
- Ability to implement the decisions.³³

2.6.4 Aftermath

To create an emergency preparation enough financial resources are needed. A key question is who should fund the preparations. Although new knowledge from previous course of events is created, the effectiveness of this is made difficult if the lesson is not administrated and managed within the organization.

The current crisis management organization responsible to deal with flooding in Babati town has, according to earlier reports, proved to have difficulties in harnessing the lessons learned from past experiences and to recognize the correct signals. What happens? How do we proceed from here? When and how should we act, and so on.³⁴

Recreating faith in the governance of the own institutions and addressing issues of decreasing legitimacy are also key challenges when restoring the reputation of the organization. Something that initially was viewed as a minor operational event could grow and result in a substantial political crisis. Another challenge for decision-makers is to end measures at the correct time.

The public often wants the decision makers to continue operational work also after that the danger has disappeared and the measures are no longer motivated. It is necessary for the decision-makers to be able to stop the ongoing work without being considered irresponsible or ambivalent.³⁵

Aftermath involves:

- Learning the right lessons
- Restoring legitimacy.³⁶

³² Boin, Ekengren, & Rhinard, (2006). *Functional security and crisis management capacity in the European Union*. p 44

³³ Boin, Ekengren, & Rhinard, (2006). *Functional security and crisis management capacity in the European Union*. p 34

³⁴ Orgut for SIDA (2008) *Final Technical assistance report 2002-2007*, (2008)

³⁵ Boin, Ekengren, & Rhinard, (2006). *Functional security and crisis management capacity in the European Union*. p 40

3. Method

The choice of method depends on the problem formulation of the research.³⁷ Data concerning the ability of Babati town to deal with flooding are qualitatively processed. Mapping the current position of the crisis management capacity of the town is best performed with a qualitative approach. The purpose of the research is to study the four phases of crisis management discussed in the theoretical approach. The empirical data will be presented in predefined categories as also discussed earlier.

The purpose of the methodological arrangement is to analyze the organization of crisis management of Babati town and to study how the town currently deals with flooding. To paint the most lucid and clear picture possible of the current situation, predefined questions are formulated within the four different categories of the analytical framework as follows:

Prevention: *Are there any standard routines used in Babati to monitor events related to flooding within the current crisis management organization?*

Preparation: *Are there scheduled emergency meetings, exercises and in that case in what frequency?*

Response: *How are information and communication channels managed? How are critical decisions made and implemented?*

Aftermath: *How is legitimacy restored and is it possible to detect willingness to learn new and more effective ways to manage crises?*

A closely related approach to categorize and work with crisis management is Disaster Management. In terms of content, the categorizations within the two approaches are very similar. In the last element of analysis, emphasis is put on the restoration of community structures as well as psychological and physical well being. However in this research field, less attention has been paid to the analysis of the restoration of legitimacy and willingness to learn new ways, which is a category that will be more closely investigated in this study.³⁸ Therefore, the Crisis management is considered to be the most suitable tool to work with in relation to the empirical examination of this

³⁶ Boin, Ekengren, & Rhinard, (2006). *Functional security and crisis management capacity in the European Union*. p 35

³⁷ Esaiasson, Gilljam, Oscarsson, Wängnerud, (2007) *Metodpraktikern - Konsten att studera samhälle, individ och marknad* p 17

³⁸ Ramesh. R. Rao, Jon Eisberg, Ted Schmitt, (2007) *Improving disaster management, the role of IT in Migration, preparedness, response and recovery*

study's subject. The choice of an analytical method derived from a Western context is because it is established in the investigation of crisis management and thus well renowned.³⁹

In order to create a good *validity* in the study, the research strives to use the operational concepts that cover most or all aspects of the theoretical framework.⁴⁰

The study assumes a theory consuming design which means that it is the case and the empirical data that are at the centre of the research.⁴¹ The external validity and the ability to create generalized conclusions that apply to a broader population are therefore low. The critical review undertaken shall instead be seen as a case study of the crisis management capacity to deal with floods in Babati. The method of collecting data made in the study implies a weakened intersubjectivity.⁴² This is because interviews will never result in identical responses, making it difficult for other researchers to achieve the same answers in a new examination. Similarly, the experiences and observations on the ground in Babati during the research will not be possible to be recreated.

3.1 Collection of material:

The following material is used:

- Reports containing earlier research on flooding in Babati including previous recommendations.
- Interviews with District Council and Regional staff in Babati, where the selection of the informants aims at getting answers to factual information and knowledge about the respective positions that the informants possess.⁴³
- Notes from direct observation-in Babati for 12 days to create awareness on the subject, and to monitor how introduced measures and procedures develop.⁴⁴
- Daily photographing of ditches in the town—to create knowledge about and data of the actual situation, and to identify existing measures or the absence of such, and their consequences.

³⁹ For example see editions from *CRISSMART*

⁴⁰Bjereld, Ulf, Demker, Marie & Hinnfors, Jonas (2002). *Varför vetenskap?: om vikten av problem och teori i forskningsprocessen*. 2. uppl. Lund: Studentlitteratur

⁴¹ Esaiasson, Gilljam, Oscarsson, Wängnerud, (2007) *Metodpraktikern - Konsten att studera samhälle, individ och marknad* p 100

⁴²Teorell, Jan & Svensson, Torsten (2007). *Att fråga och att svara: samhällsvetenskaplig metod*. 1. p 64 uppl. Stockholm: Liber

⁴³ Hallenberg, Jan, Ring, Stefan, Rydén, Birgitta, Åselius, Gunnar (2004) *Om konsten att tänka och skriva på ett vetenskapligt sätt, en introduktion i metodlära*, p 19, Försvarshögskolan, Stockholm

⁴⁴ Esaiasson, Gilljam, Oscarsson, Wängnerud, (2007) *Metodpraktikern - Konsten att studera samhälle, individ och marknad* p 220

Field studies and observations made during 12 days will not give a complete picture of the studied issue. Cultural issues affecting the details of the study may be missed out in the study due to lack of time to achieve cultural knowledge of the area. Google Earth is used to study maps and nature of the area.⁴⁵ The design and methodology used in the study was inspired by the team composed by Arjen Boin, Magnus Ekengren and Mark Rhinard. They have previously, through collaboration between the Swedish National Defence College and the mission of the Security Studies EUROSEC, created an analytical framework presented in the book *Functional Security and Crisis Management Capacity in the European Union*.⁴⁶

3.2 The informants

Informants were strategically chosen based either on their knowledge on floods and/or their positions in the crisis management organizational structure.

The informants are:

Henry Mlava: works as fire fighter in Babati Town. He has knowledge about the active operational measures to deal with flooding.

Alfonse Joseph Nehone: works as a town engineer possessing knowledge of physical measures to prevent flooding. He is also facilitating and mitigating circumstances when large volumes of water threaten investments in infrastructure. Alfonse has detailed knowledge of the current organizational structure for managing floods and was very helpful in the identification of the crisis management capacity.

Sebastian Joseph: work as a Crop officer in Babati town. His knowledge of the crisis management organization, responsibilities and actions taken is mainly used to triangulate the data.

Johani Kasani: is the Regional manager of TANROADS-MANYARA. His knowledge on Tanzanian road network operations and performance, distribution of responsibilities between different authorities and measures to deal with flooding is valuable.

Mr. Igance. K. Mujawhuzi: works in the Manyara Region. He was interviewed to clarify the responsibility allocation between the Town and the District, and to understand the organization from a regional perspective. He was also interviewed to create an understanding of the governance guidelines, how decisions are made and by whom.

Mr Kianda: works as a town planner. He was interviewed to understand Babati Town Council's rules of procedure to deal with flooding.

⁴⁵Webbpage (2010-02-10) <http://earth.google.com/>

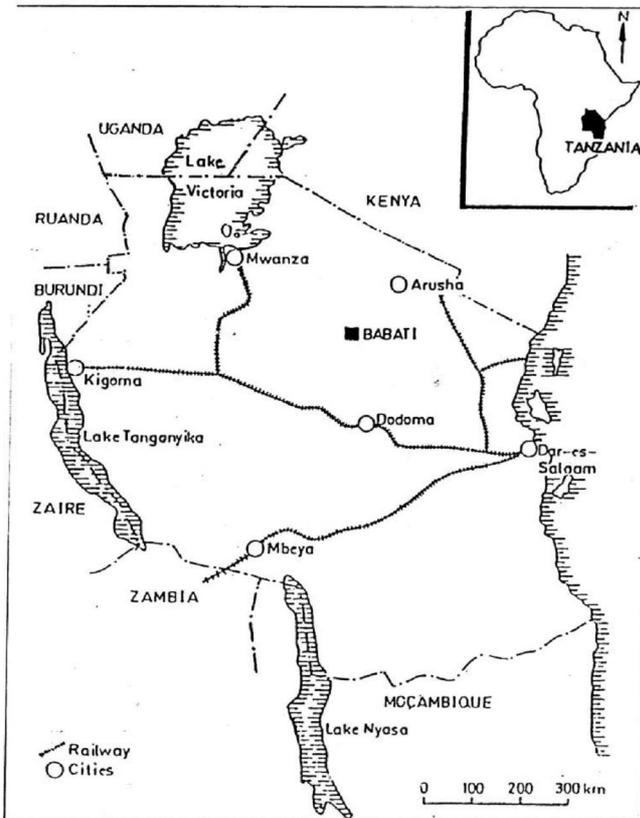
⁴⁶ Boin, Ekengren, & Rhinard, (2006). *Functional security and crisis management capacity in the European Union*.

Emanuel Lukumoy: works as a meteorologist in Babati. He was interviewed to create awareness of how information about weather-based knowledge is created, managed and used in relation to the anticipation of floods.

Mr. Leonard Thao: works in Babati District and has through his political career acquired information about the Babati town and its' organizational and bureaucratic development during the last 20 years.

4. CONTEXT

4.1 Babati and governance of the Town



■ Location of Babati in Tanzania

Babati town is located in Tanzania, 167 kilometers south of Arusha.⁴⁷ Population figures vary greatly. According to the Wikipedia the population is about 31 000 inhabitants,⁴⁸ while other sites suggest higher numbers.⁴⁹ This could be due to disagreement about what is considered to be “state core, urban, or urban area”.⁵⁰ A massive in-migration to the area during recent years has been related to an increase in agriculture. Between 1960 and 1990 the agricultural land has increased by 155%.⁵¹ This in turn is has increased gully erosion increasing water flow and accompanying siltation and sedimentation.

The centre of Babati town is located below Lake Babati. This means that water bodies flow towards the centre area when the lake is flooded.⁵²

Also during heavy rains the town centre is hit at an early stage when water masses flow down from the surrounding mountains. The bus station is located at the lowest point of the town and therefore often flooded. The roads to Burundi, Zaire, Uganda and Rwanda all pass through Babati town making the town an important node in the road network.⁵³

The bureaucratic structure has changed in recent years. Today Babati town is an own political entity that used to belong to Babati District. Population growth in Arusha Region was so huge that

⁴⁷ The picture is picked from C.Å Gerdén, G.M.O Khawange, J.M Mallya, J.P Mbuya, R.C Sanga, 1992 *The wild lake. The 1990 floods in Babati Tanzania- rehabilitation and prevention.* p 15

⁴⁸ Webpage(2010-04-16) <http://sv.wikipedia.org/wiki/Babati>

⁴⁹ Webpage(2010-04-16) <http://population.mongabay.com/population/tanzania/161312/babati>

⁵⁰ Intervju 2010-05-15 Vesa Matti Loiske Supervisor Södertörn University

⁵¹ Orgut for SIDA (2008) *Final Technical assistance report 2002-2007*p 39

⁵² Orgut for SIDA (2008) *Final Technical assistance report 2002-2007*p 39

⁵³ Orgut for SIDA (2008) *Final Technical assistance report 2002-2007*p intro

the Tanzanian Government chose to split the Region into two and created Manyara Region. Babati became the new Regions head quarter in 2004 changing the political landscape of Babati.⁵⁴

The responsibility of Lake Babati is split between Babati town and Babati district, as the lake is located in both of these administrative units. The Lake borders eight wards; of these five belong to Babati town and three to Babati district.

Measures and programs to combat flooding threatening the town are the responsibility of Babati town council.⁵⁵ Maintenance of the road network in Tanzania is the responsibility of TANROADS.⁵⁶ The activities are based on government directives and guidelines and the work is funded through taxes, loans and donors.

TANROADS planning sections work on a project basis based on 5-year plans. In Babati it is responsible for the maintenance of bridges, the design of the Kiongoni outlet, and the regional road networks. The roads in town are not the responsibility of TANROADS the town itself takes care of the maintenance.⁵⁷

4.2 Previous events and actions affecting the work against flooding

Flooding affecting Babati is not a new phenomenon. Floods have caused problems for a long time. In 1964, 1979 and 1990 the Town was severely affected by floods. The report the *Wild Lake 1991* contains facts about the area, the impact of Lake Babati floods on the town and the measures necessary to take to prevent future floods.⁵⁸

In 1964 a channel at the Kiongoni outlet was reconstructed after the flood.⁵⁹ At the time of the flooding in 1990, 75% of a 100-meter distance between Kiongoni outlet and Lake Babati was covered with vegetation.⁶⁰ When the area is covered with vegetation it prevents the water to flow to the outlet increasing the lake level above the level of the outlet. Without vegetation water can flow unimpeded through the outlet so that the lake can be gradually and continuously drained.

According to the report at the most critical time in 1990 the water level was 44 cm higher than the outlet.⁶¹ The knowledge about the vegetations negative impact on the water level existed well before 1990 and is therefore no news for policy makers in Babati.

⁵⁴ Intervju (2010-03-04) Leonard Thao, Principal agro and technical

⁵⁵ Intervju (2010-03-04) Leonard Thao, Principal agro and technical

⁵⁶ TANROADS means Tanzanian National Roads

⁵⁷ Intervju (2010-03-01) Johani Kasani, Regional manager TANROADS, Manyara district

⁵⁸ C.Å Gerdén, G.M.O Khawange, J.M Mallya, J.P Mbuya, R.C Sanga, (1992) *The wild lake. The 1990 floods in Babati Tanzania- rehabilitation and prevention.*

⁵⁹ More information about the outlet is presented under the headline 4.4

⁶⁰ C.Å Gerdén, G.M.O Khawange, J.M Mallya, J.P Mbuya, R.C Sanga, (1992) *The wild lake. The 1990 floods in Babati Tanzania- rehabilitation and prevention. p 13*

⁶¹ C.Å Gerdén, G.M.O Khawange, J.M Mallya, J.P Mbuya, R.C Sanga, (1992) *The wild lake. The 1990 floods in Babati Tanzania- rehabilitation and prevention. p 13*

The report also highlights the changes in precipitation and vegetation, and the increased cultivation of the drainage area.⁶²

In 1991, a meeting was held with the Soil Conservation Unit in Nairobi. Representatives from SIDA and employees of the Babati district were present. The meeting decided to perform a critical review of the flooding problem in the area in order to provide a scientific basis for further decisions concerning measures to minimize flood damage, or at best avoid that these occur.⁶³ The labour was assigned to two hydrological experts and consultants who then presented their proposals for possible measures. One of the recommendations made by them was to strengthen the bridge at Mrara. The bridge is a link between the town and several villages and the Babati hospital and very valuable to the residents.

At road crossings metal culverts were installed to connect ditches that allowed water to pass without impacting on road stability.⁶⁴

The Kiongosi Bridge, which is located approximately 17 km from the town, was also restored by strengthening the walls around the bridges, footholds to reduce the risk of the bridge being drawn along with the masses of water.⁶⁵

The Tanzanian government made an effort to alleviate the problem with disasters in 1991 by presenting the Act of Parliament, *Disaster Relief Coordination Act no. 9*. The effort was intended to create an understanding of disaster management across the country from national, regional to the local level. It intended to introduce the concept of disaster management and to work on all phases to prevent or minimize serious strains on the community.

A follow-up was made in 2004 by guidelines set out in *The National Disaster Management Policy*.⁶⁶ In 2007, the National Audit presented its' conclusions regarding disaster management, and specifically how the labour directed to solve the flooding problem in Babati was progressing. The focus of the conclusion was the physical structures to prevent disasters, but recommendations concerning the political organization of Babati were also discussed.⁶⁷

⁶² C.Å Gerdén, G.M.O Khawange, J.M Mallya, J.P Mbuya, R.C Sanga, (1992) *The wild lake. The 1990 floods in Babati Tanzania- rehabilitation and prevention. p 11*

⁶³ C.Å Gerdén, G.M.O Khawange, J.M Mallya, J.P Mbuya, R.C Sanga, (1992) *The wild lake. The 1990 floods in Babati Tanzania- rehabilitation and prevention. p 17*

⁶⁴ C.Å Gerdén, G.M.O Khawange, J.M Mallya, J.P Mbuya, R.C Sanga, (1992) *The wild lake. The 1990 floods in Babati Tanzania- rehabilitation and prevention. p 39*

⁶⁵ C.Å Gerdén, G.M.O Khawange, J.M Mallya, J.P Mbuya, R.C Sanga, (1992) *The wild lake. The 1990 floods in Babati Tanzania- rehabilitation and prevention. p 27*

⁶⁶ Orgut for SIDA (2008) *Final Technical assistance report 2002-2007p 3*

⁶⁷ Orgut for SIDA (2008) *Final Technical assistance report 2002-2007*

4.3 LAMP project in Tanzania

In 1992 a project was started in agreement between Tanzania and the Swedish development agency SIDA. The concept was called “The Land Management Programme”, abbreviated to LAMP.⁶⁸ The cooperation was based on local participation and agency in which the inhabitants of selected Tanzanian regions were involved. This was implemented instead of creating centralized guidelines for the whole country in an attempt to create a more sustainable structure. The project was therefore based on the existing demand.

In the initial stage of the project efforts was Forest Management. The idea was to create an understanding among the population around Lake Babati and to spread knowledge among farmers about how to be less damaging to the environment. Measures were undertaken to reduce soil erosion causing serious problems. When the topsoil is washed away, the remaining soil is poor in nutrients and inept for cultivation. Eroding soil also fills the bottom of deep lakes and thereby increases water levels building up the risk of flooding.⁶⁹

The LAMP project created package solutions and training courses where farmers had the opportunity to learn proper land management known as soil conservation.

When the districts were made responsible and involved in the implementation of these projects they were performed at the so called Lower Level Government Authority. It was based on a local democracy idea in which the decision making processes and working procedures should be as close to the involved population as possible.⁷⁰

As time passed by the projects also involved general development, micro loans and business activities based on ecological principles.⁷¹ Furthermore, information about HIV and AIDS was diffused and attempts were made to implement a gender perspective.

The responsibility for the activities gradually passed on to the various districts in Tanzania. Emphasis was placed on creating regional capacity to maintain agricultural and land use in an environmentally sustainable perspective. In addition, the regions were encouraged to create capacity, structures and working guidelines to operate also with societal activities.⁷²

⁶⁸ Orgut for SIDA (2008) *Final Technical assistance report 2002-2007* p 3

⁶⁹ Intervju (2010-02-24) Mr Kianda Town planner Babati

⁷⁰ Orgut for SIDA (2008) *Final Technical assistance report 2002-2007* p 3

⁷¹ Orgut for SIDA (2008) *Final Technical assistance report 2002-2007* p 4

⁷² Orgut for SIDA (2008) *Final Technical assistance report 2002-2007* p 8

With funding from SIDA a technical infrastructure could be installed to support the regions.⁷³

Eventually live stock, agriculture, water, rural and environmental sections of the bureaucratic structure were involved in LAMP activities. In 2003 the structure and financing of the project changed. The continuation of the project was named LAMP 2, and with this the crew and staff from SIDA were gradually phased out.⁷⁴

The focus on farming techniques changed over time and shifted to primarily regard social and communal processes. The focus of the project is now that various local actors shall be able to deal with the situation on their own, and to diffuse information about sustainable solutions to the society at large. The programs do no longer exist, nor does the economical funding from SIDA. Employees in Babati town, however, claim that the work is ongoing and is performed in the same spirit as before.⁷⁵

4.3.1 Working Procedures related to the flooding problem

In 1991 it was decided that the financial incentives from the project would be linked to activities involving preventive measures to minimize the impact of water damage during heavy rains.⁷⁶ It was decided to create the following:

- Activities to observe the gullies and their formations.
- Land use plans through the identification of risk areas and practices to minimize soil impact.
- Zero grazing in the Kiongoni outlet against the overgrowth of the lake.
- Tree Planting Project of 1500 different kinds of plants. The goal of the project was to minimize erosion. The trees came into the ownership of the farmers of the area.⁷⁷

⁷³ Orgut for SIDA (2008) *Final Technical assistance report 2002-2007*p 4

⁷⁴ Orgut for SIDA (2008) *Final Technical assistance report 2002-2007*p 77

⁷⁵ Intervju 2010-02-24 Mr Kianda town planner Babati

⁷⁶ C.Å Gerdén, G.M.O Khawange, J.M Mallya, J.P Mbuya, R.C Sanga, (1992) *The wild lake. The 1990 floods in Babati Tanzania- rehabilitation and prevention*.p45

⁷⁷ C.Å Gerdén, G.M.O Khawange, J.M Mallya, J.P Mbuya, R.C Sanga, (1992) *The wild lake. The 1990 floods in Babati Tanzania- rehabilitation and prevention*.p45

4.4 The current physical infrastructure designed to cope with the impact of water:

4.4.1 The Kiongoni Outlet:

The outlet is located close to the culverts under the trunk road that runs between Arusha and Dodoma and where water from Lake Babati flows. The water continues through an artificial channel, which then flows under the Mrara Bridge. The quality of the soil in the area around the outlet is low, which means that the risk of erosion is high.⁷⁸

After the floods in 1990 and 2006, the same numbers of culverts are used as before. A decision has been taken and a refurbishment is expected in autumn of 2010, when TANROADS will replace the round culverts with a box system, with greater capacity to distribute water.⁷⁹

4.4.2 The Kiongosi Bridge

This bridge is located about 17 km north of Babati where water from Lake Babati flows in the Kiongosi River towards Lake Manyara. The bridge is currently under reconstruction and a Chinese company has been contracted by TANROADS to perform the task. The Chinese company is contracted as Tanzania lack structural engineers who possess the adequate skills to perform the task.⁸⁰

4.4.3 The channel from Lake Babati related to the town system of ditches.

The channel is designed to bring plenty of water in a controlled manner through a system of ditches towards the Kiongosi channel. The water flows through reinforced ditches that has been reinforced by stone and through metal culverts below access roads. When the pressure of the water is high, the water moves the sediment and soil. At lower water speeds there is however a risk that the metal culverts are clogged.⁸¹

⁷⁸ Orgut for SIDA. (2008) *Final Technical assistance report 2002-2007 p 4*

⁷⁹ Intervju (2010-03-01) Johani Kasani, regional manager TANROADS, Many district

⁸⁰ Intervju (2010-03-01) Johani Kasani, regional manager TANROADS, Many district

⁸¹ Intervju 2010-02-24 Mr Kianda town planner Babati

5. Results/Analysis

In this chapter questions are posed to the empirical findings about Babati town's ability to deal with the flooding problems. The chapter is structured according to the analytical framework derived from the Crisis Management. This will provide a mapping of the current management capacity based on prevention, preparation, response and aftermath.

5.1 Prevention

Prevention involves:

- Detection of early warnings for crises and the use of early warning systems.
- Being able to perform a rapid and effective intervention to stop the escalation

The question posed is:

Are there any standard routines used in Babati to monitor events related to flooding within the current crisis management organization?

In Lake Babati there are two different water-level measuring units. When reading the units it is possible to identify increases or decreases in the water volume of the lake.⁸² One unit is placed at one of the outlets passing through the centre of the town. The measuring unit can clearly be read by just looking at it. Optimally it should have been placed in the middle of the lake, giving better information regarding the depth of the lake and tell how much water Lake Babati can contain and when the risk of flooding is to be forecasted.

The main problem affecting Lake Babati is the permanent erosion in the higher lying area around the lake, enhanced by grazing and agriculture. If the measuring unit would be placed in the middle of the lake and be read continuously it would enable the measurement of sedimentation and its impact on the lake's capacity to contain water.

The responsibility for measuring the water level is with the livestock and agriculture section. No data collected over a longer time period could be found. TANROADS argue that they also use the measuring device in order to create a proactive ability to meet the water masses.⁸³ No knowledge of these readings and the collection of data exists in the town planning office.

⁸² Intervju 2010-02-24 Mr Kianda town planner Babati

⁸³ Intervju (2010-03-01) Johani Kasani, regional manager TANROADS, Many district

There is a weather station located in Babati. In 2005, the manually run station was replaced with a computerized device able to accurately measure temperature, precipitation and wind directions. Collection of data is now conducted around the clock. The statistics are forwarded to Dar es Salaam where they are stored and analysed to predict long term weather changes. The collection of data from the device has been going on for five years. This period is too short to create any far reaching analysis of climate changes over time in the area.⁸⁴

Although the station in Babati presents the exact figures of precipitation, there are difficulties to read the weather conditions and trends that may affect the area in a wider perspective. Today, 50 weather stations exist in Tanzania, of which only 3 are digital and 47 are manual. The manual stations must be staffed by humans 24 hours and the margins of error in such measurements are wide.⁸⁵

To obtain information of the data on the weather conditions the Babati town Dar el Salaam needs to be contacted. The meteorological effort is performed regionally and is affiliated with the World Meteorological Organization.

In order to maintain the standard of the infrastructure that was built in consultation with SIDA in 1991, there must be continuous control to identify and maintain non functioning and destroyed constructions. The maintenance are for example the cleaning of ditches, the cleaning of culverts, the durability of bridges and the durability of artificial waterfalls.⁸⁶

Those responsible to take these measures are currently unclear. TANROADS is supposed to be responsible for maintaining, clean and the culverts in the Kiongoni outlet. The labour distribution is outsourced and the organization is, what the regional manager of TANROADS calls, weather-based. There is thus no standardized procedure for conducting the maintenance and no continuous control of the situation around the outlet.

In addition to the unclear distribution of responsibility, decision-makers are not fully aware of the tasks to be carried out by different parts of the administration and companies in Babati in case of a crisis. There is a policy stating that labour employed by TANROADS should be locally employed. The approach is called Field Welling and is a concept aimed to encourage the taxpaying population with labour funded and governed by the state.⁸⁷

The organization is therefore based on someone handpicking and employing people on the street to directly perform the task.⁸⁸ No consideration of profession or a standardized working procedure is used.

⁸⁴ Intervju (2010-02-25) Emmanuel Lukumoy meteorology

⁸⁵ Intervju (2010-02-25) Emmanuel Lukumoy meteorology

⁸⁶ Intervju (2010-02-24) Mr Kianda town planner Babati

⁸⁷ Intervju (2010-03-01) Johani Kasani, regional manager TANROADS, Many district

⁸⁸ Intervju (2010-03-01) Johani Kasani, regional manager TANROADS, Many district

A co-operation between TANROADS and Babati town exists and if bridges or roads that TANROADS is in charge of are damaged, Babati town report them to TANROADS that in turn take measures.

The town planners do not control the ditches and culverts in the town and has delegated the task to the fire department.⁸⁹ At the fire department there was no awareness of the expected preventive measures or active crisis management operations related to flooding to be taken by them.⁹⁰

The fire department has an educational function directed towards residence owners and other interested individuals about the situation, and gives tips on preventive measures to alleviate flooding of basements, etc. The fire engine can siphon water from soaked buildings but there are no possibilities to guide water bodies through bilge pumps. There is no knowledge on how to use hoses as damming equipment or of the possibility to prevent the bus station from floods. To get the water out from the bus station is theoretically and practically possible with the fire engine equipment but knowledge and guidelines are lacking.

A normal procedure implemented after severe flooding at the initiative of town planners is to employ reconstruction workers, generally with an employment length of 4 months. The labour force varies between 4 to 10 employees at a cost of 4 million Tanzanian shillings, according to Alfonse Nehone.⁹¹ There are working according to existing guidelines and after the town planners inventory of the infrastructure.

5.2 Preparation

Preparation involves:

- Lessons learned from past crises in order to be better prepared before the next crisis.
- To implement a working procedure to prepares for the unknown.⁹²

The question posed is:

Are there scheduled emergency meetings, exercises and in that case in what frequency?

⁸⁹ Intervju 2010-02-26 Alfonse Nehone Town engineer Babati

⁹⁰ Intervju (2010-02-24) Henry Mlava Fire fighter Babati

⁹¹ Intervju 2010-02-26 Alfonse Nehone Town engineer Babati

⁹² Boin, Ekengren, & Rhinard, (2006). *Functional security and crisis management capacity in the European Union*.p 34

Through SIDA a preventive project known as the Forest Management Program has been implemented. It aims to teach the local population how to cultivate the land as humanely as possible for the sake of the environment. Knowledge about land use and cultivation methods are taught in order to create the best possible conditions to hold back the soil and reduce the erosion in spite of human influence. The main task is to gain control of forest use in order to prevent further gulling. The forest program was a part of the LAMP project, and although funding is no longer provided, the training is said to continue.⁹³

Earlier the farmers were also given tree seedlings to encourage the expansion of vegetation and root systems counteracting soil erosion.⁹⁴ However, there are currently no economic opportunities for such distribution. In Babati town regular meetings are held between the various departments. Once every week leaders from the various departments meet in order to present current plans, how work is progressing creating an update of the situation in town.⁹⁵ Occasionally meetings between the regional and local districts occur.

In November 2009, a training course was held for the town planning office to create preparedness for El Niño, which was expected to hit the country later that spring. Evacuation sites and vital equipment needed for survival and treatment of injured individuals were analyzed.⁹⁶ The course has not re-occurred, but can nevertheless be seen as a contingency measure. Whether this knowledge will be used operationally remains to be seen. No written plan was available. No follow-up on the course was scheduled.⁹⁷

5.3 Response

Response involves:

- Ability to make critical decisions,
- Ability to create the implementation of those decisions.⁹⁸

The questions posed are:

How are the information and communication channels managed?

How are critical decisions managed and implemented?

⁹³ Intervju (2010-02-24) Mr Kianda town planner Babati

⁹⁴ Intervju (2010-02-24) Mr Kianda town planner Babati

⁹⁵ Intervju 2010-02-26 Alfonse Nehone Town engineer Babati

⁹⁶ Intervju (2010-02-24) Mr Kianda town planner Babati

⁹⁷ Intervju (2010-02-24) Mr Kianda town planner Babati

⁹⁸ Boin, Ekengren, & Rhinard, (2006). *Functional security and crisis management capacity in the European Union*.p 34

The existing organization that manages the floods in Babati has no clear responsibility allocation structure. It is therefore difficult to analyze where each of the critical decisions will be made and by whom.

The critical decisions made by the town planning office concern settlements and forced displacements. Town planners have the task to identify adequate land for settlement, agriculture and business activities. Upon detecting such activities, the town planners decide whether any displacement of population should take place.

Even if people build on or cultivate land in restricted areas, their properties must be redeemed and offered compensation from Babati town. This creates many problems. Firstly, it requires the town planners to actually confront the people behind the illegal activities. Secondly, it gives financial problems as Babati Town does not have the sufficient budget to provide compensation.

The town planners are able to make critical decisions of people's behaviour, but to get those decisions implemented leads to difficulties. These are measures that take place on an everyday basis and without stress. When forced evacuation during emergency circumstances happens, the employees of the town planning office consider the moving of people to be uncomplicated. The problem lies instead with the question of who makes the decision and when.

The ability to take critical decisions in cases involving flooding of Babati Town is adversely affected by the current crisis management organization. Since the division of the responsibilities among the affected parties is not fully nor concretely decided upon, the implementation and the execution of the measures will also fail. Even if the information on water levels and rainfall forecasts exists there is no guarantee that it reaches the right person in the organization. It is not self-evident that the operational work will be executed even if the information gets to the correct desk. Since many measures are outsourced there are no controlling or standardized guidelines.

Information on weather conditions are presented to the population by radio. Problems arise to reach all individuals when if the radio is not a property to all residents.

5.4 Aftermath

Aftermath involves:

- Learning the right lessons
- Restoring legitimacy.⁹⁹

⁹⁹ Boin, Ekengren, & Rhinard, (2006). *Functional security and crisis management capacity in the European Union*.p 35

The questions posed are

How is legitimacy restored and is it possible to detect a willingness to learn new and more effective ways to manage crises?

When the town flooded in the 1990's, another council ruled the town. In order to restore a functioning society, Western donors assisted with the reconstruction, provided the skills and the creation of an organization to learn from past events. The reason for this work was to create conditions for Babati to be able to further tackle the recurring problems that are expected due to the climate and the location of the town. Today development policy has changed and financial incentives must be applied for by Babati instead of as previously being distributed by it.

As the responsibility has been handed over to Babati town, the current organizational structure is difficult to untangle. According to their own experiences, the people are tired of the absence of the bureaucracy when the water level assumes a high level. During a visit to the Kiongoni outlet on the 3rd of March when the water almost covered the outlet a man exclaimed, *"Where is the government, what are the departments doing?"*¹⁰⁰

An employee of Babati district, whose job is to support Babati town regarding coordination of crisis management, considered the problem of flooding as being caused by people's lack of interest and ignorance about water and mans own influence.¹⁰¹ When floods did not recur similarly each year people have a tendency to forget what had occurred, which then lead to illegal settlements near the lake.

During droughts both humans and animals depend on water, which is also a contributing factor for people to choose to move closer to the lake. The people that primarily affect the water through their bad way of cultivating the land are not the same person that is affected by the floods.

Soil erosion affecting the depth of Lake Babati comes from the surrounding mountains. The water never gives any problem there but prevents people to understand the importance of taking measures to prevent the problem.¹⁰²

When asking the staff as why no measures had been taken to clear away the grass at the outlet of Lake Babati, the answer was that the water level (3 March) was not high enough to take action and they were instead waiting for "heavy rain"¹⁰³ The next day when the night's rain had found its way down from the mountains water was flowing straight through town. If the clean up

¹⁰⁰ (2010-03-03) Local person

¹⁰¹2010-03-01 Ignance Mujwahuzi Assistant administrative security Finansstruktur

¹⁰² 2010-03-01 Ignance Mujwahuzi Assistant administrative security Finansstruktur

¹⁰³ Intervju (2010-03-03) Mr Kianda town planner Babati

had been done at the 3 of March, the water would have been possible to regulate and the lake would have receded to more controllable conditions.

The situation proves that the desire to change working procedures does not exist among the affected parties.

6. Conclusion/Concluding Discussion

The analytical main question in this study reads as follow:

What crisis management capacity exists to manage floods in Babati town?

In this paragraph, the main conclusions about existing crisis management capacity in Babati town to manage flood issues in relation to Lake Babati, are presented.

Babati's capacity to realize preventative measures:

Prevention involves

- Detection of early warnings for crises and the use of early warning systems.
- Performing rapid and effective interventions to stop escalation

The existing early warning system, that could indicate that the flood will hit the town of Babati, is represented by measuring devices in Lake Babati, and the mapping of rainfall and climate change from a meteorological point of view. Accurately collected weather data in the area has only been gathered since 2005. To analyze the weather conditions from more accurate perspectives, the 47 of the 50 monitoring stations in Tanzania should be replaced by the computerized ones. Concerning Lake Babati and the measuring of the water level, there is a desire to place the measuring devices in the middle of the lake in order to identify the depth of the lake in order to analyze the lake's potential to contain water.

The biggest problem for a good crisis management capacity is caused by the unclear division of responsibility that exists in Babati Town. The Live Stock and Agriculture Department is not collecting data that could be used to examine a long period of time. TANROADS read the water levels in order to be more prepared to carry out preventive measures, something that Babati Town claims to have no knowledge about. In addition, the TANROADS outsourcing of the cleaning and inspection of the culverts at the Kiongoni outlet means that even if TANROADS measure the water levels, this information does not reach the person responsible for the clean up.

The TANROADS regional officers are not aware of who the person responsible for the clean up is. The warning system loses its effect when the information indicating the water level changes, does not reach the right person.

Babati's capacity to create preparedness:

Preparation involves

- Lessons learned from past crises to be better prepared for the next crisis.
- Implementation of a working procedure to prepares for the unknown.

Regular meetings and decision-making structures and exercises related to the flooding problem do not exist. The employees describe that they each week have joint meetings with all the departments. At these meetings every policy area reports which projects are implemented and what they are working on. It does not necessarily mean that an interaction between the various working groups exists.

The only exercise that could be identified in relation to the flooding was a regional effort to draw attention to town planners in Babati Town about the expectance of El Nino and how the town should work. No follow-up on the effort was scheduled, and neither could any written data be presented concerning the organization of the decision-making and responsibility allocation in matters related to floods.

It would be beneficial if Babati Town and all parties would meet and structure the organization together as well as sort out accountability, who should make decisions, and how the decisions should be implemented.

When the performance of duties is outsourced, there are difficulties to obtain an understanding about and harness knowledge from past events, as staffs are continually replaced.

Babati's capacity to work in active crisis management:

Response involves

- Ability to make critical decisions,
- Ability to implement the decisions

Babati town's ability to make critical decisions in relation to the flooding of Lake Babati and implementing them is of substandard.

The main reason is the non-existence of a clear division of responsibilities between the involved parties. As a consequence of this, potential actions fall into oblivion.

It is difficult to analyze where each of the critical decisions have been made and by whom.

Town planners have been given a heavy task to decide on the relocation of illegal activities. When the law says that compensation must be paid to the displaced, Babati Town is required to have a budget that is able to allow this.

Forced relocation without compensation might not solve the long-term problems for the population, but it would make it easier for staff of the town planning office to carry out and implement the decision taken.

Babati's capacity to learn:

Aftermath involves:

- Learning the right lessons
- Restoring legitimacy.

The focus of this study was the bureaucratic structure and approach to dealing with flooding. The attitudes that have emerged in the interviews confer that the human impact on the lake is the most problematic factor to handle.

The farmers and land users who live above the lake are the ones that most widely affect the erosion, but they are also those who are least affected by the situation of the masses of water flowing through the town. The study has not focused on examining the people's opinion on their willingness to learn new things or where they themselves think the biggest problem lies.

The willingness to learn new skills among responsible in Babati is questionable, when the understanding of taking measures to avoid earlier mistakes is poor and currently not being of concern. An example of this is cutting grass and clearing vegetation at the Kiongoni outlet as well as cleaning clogged culverts.

6.1 Further research:

A key question is to investigate why the bureaucratic structure seems disjointed, where accountability is difficult to achieve. The local employment law to directly hire workers on site has a good intention, because the tax revenue from TANROADS goes back to the population. However, it leads to instability and counteracts a standardized approach.

The way in which SIDA has carried out its developmental work in the field through the LAMP project may be a contributing factor to Babatis organized capacity to cope with floods. Earlier, there was staff on site that supported the project and its design. When the staff and the financial incentives of SIDA were dismantled the possibility for the Babati people to understand why prevention is so important disappeared. The economic incentive disappeared, and with it, perhaps, also the motivation for the project. Development work related to floods in Babati had enormous significance for the reconstruction of the town on several occasions

Tanzania would probably never have been able to finance these measures on its own. Earlier reports made from 1990 to 2007 are available, also at the offices of Babati Town Council. These largely point to similar deficiencies within the organization regardless of the year they were created, and similar recommendations to the affected parties recur. The observations made by the author, of preventive measures and activities, show a poor performance.

The democratic aspect to manage the problem as locally as possible is very good, but when too many parties are involved, the measures and the data easily fall between seats.

The question then is how the best approach should be achieved?

A recommendation for future research would be to study development policy and its functionality. It would be relevant to investigate if it is possible to hand over earlier projects and programs to local residents, since they previously have been governed by Western organizations. It is also highly relevant to consider if it is possible to hand over an organizational model that ensures that the work is carried on or if other measures are needed to restore the knowledge and understanding of how to deal with pressures on a society.

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INTERVIEW DATA

Alfonse Joseph Nehone: town engineer in Babati (2010-02-26)

Emanuel Lukumoy: meteorologist in Babati. (2010-02-25)

Henry Mlava: fire fighter in Babati. (2010-02-24)

Igance. K. Mujawhuzi: Manyara district (2010-03-01)

Johani Kasani: regional manager in the TANROADS-MANYARA district. (2010-03-01)

Leonard Thao: Babati District (2010-03-04)

Mr Kianda: town planner in Babati. (2010-02-24) (2010-03-01)

Sebastian Joseph: Crop officer in Babati (2010-02-24)