# Challenges to Disaster Risk Reduction
*- A study of stakeholders' perspectives in Imizamo Yethu, South Africa*

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Abstract: The concept of disaster risk reduction has gained more and more attention since the end of the 20th century due to the exponential increased loss of human lives and material losses, without any evidence of increased number of hazardous events. Instead of just managing disastrous events, a greater emphasis has been put on prevention efforts; an understanding of underlying drivers and vulnerabilities, and rapid urbanisation have been identified as one of the major factors shaping nations' risks. The Disaster Management Act of South Africa offers a comprehensive framework for disaster risk reduction but the complex context of South Africa offers a range of challenges to fully implement the legislation. The rapid, and uncontrolled, community growth of Imizamo Yethu, one of many informal settlements in South Africa, has resulted in multiple risks for the residents. This report investigates the challenges to disaster risk reduction from the stakeholders' of Imizamo Yethu's perspectives. The identified challenges can be grouped into five different categories: rapid community growth, lack of land, conflicting development agendas, institutional capacity and community risk behaviour. It is suggested that even though physical measures are put in place it is essential that it be supported by education to give people a chance to manage the risks facing them.

# Summary

South Africa is a dynamic developing country in transition. Like other developing countries, South Africa is facing rapid urbanisation, posing a range of risks, particularly for people living in informal settlements. The fast, and uncontrolled community growth of Imizamo Yethu, an infamous township in the Cape Town area, has resulted in very dense living conditions on land largely unsuitable for habitation, resulting in multiple risks for the residents. The settlement was originally planned to support approximately 3000 people and today figures range somewhere between 16 000 and 36 000 people, and increasing exponentially.

The purpose of this study is to improve the understanding of the challenges to disaster risk reduction within vulnerable urban communities, such as Imizamo Yethu. The National Disaster Management Act of South Africa, act 57 of 2002, has a strong focus on prevention and highlights the benefits of holistic disaster risk reduction. Disaster risk reduction is the cornerstone of modern disaster management, with a focus on risk management, rather than response management.

The objective of this report is to explore what challenges to disaster risk reduction stakeholders in Imizamo Yethu express. Using semi-structured interviews and focus groups with the identified stakeholders, the findings are analysed by means of grounded theory. The identified challenges can be grouped into five different categories;

*Rapid community growth* – the uncontrolled growth and the overcrowding of the community is viewed as major a challenge as it causes multiple risks for the residents and increase their vulnerabilities. It was also seen as a challenge in terms of relocating people due to the history of South Africa and its previous forced removals.

*Lack of land* – the overcrowding of the area resulted in use of land largely unsuitable for habitation and the limited space combined with a rapid growth resulted in a an unplanned settlement. The lack of land of land was seen as a challenge as it limits the ability to address the identified hazards through prevention measures but also the ability to respond to rapid onset disastrous events.

*Politics, the proposed upgrade* – the upgrade process that was initiated to address the problems in the settlement was seen as another considerable challenge due to the conflicting development agendas; disagreements within the settlement, objections from outside stakeholders and political disputes.

*Institutional capacity* – housing and service deliveries, or the lack of those, were considered major challenges. The definition of disaster and the view on the ongoing disaster risk management in IY differed but the mutual point was the lack of resources to implement the objectives of the Act and also the lack of human and financial resources to address the daily needs of the residents.

*Community risk behaviour* – understanding and ownership of risk among the community residents was considered another challenge. In addition to battling over a lack of land, Imizamo Yethu also struggles with the fact that human actions and behaviour put people and the environment at risk daily.

In many ways the scenario in Imizamo Yethu illustrates how disasters are a complex mix of natural hazards and human actions, hence there is no easy solution to disaster risk reduction. Most risks facing the community are associated with issues of a developing country, and the only way to achieve disaster risk reduction is through development. Unless the underlying problems are tackled, community disaster incidents will reoccur over and over again, and at an increased cost. Planning measures to reduce physical risks are important but they need to be supported by mitigation strategies that tackle root causes of vulnerability, and give people the opportunity to be part of the risk reducing activities.

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Ann-Sofie Roth
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# Terminology

ANC – African National Congress, currently the ruling party in South Africa

*Arson:* "The willful and malicious burning of one's property or the property of another. An act of fire setting." (DiMP 2008)

*Capacity*: "A combination of all the strengths and resources available within a community, society or organisation that can reduce the level of risk, or the effects of a disaster. Capacity may include physical, institutional, social or economic means as well as skilled personal or collective attributes such as leadership and management. Capacity may also be described as capability." (UNISDR 2004)

*Backyard dwelling*: "An informally constructed or assembled dwelling – not approved by municipal authorities – that is located within the property boundaries of or adjacent to a formally approved and constructed residence and that is occupied as a home, crèche or other living space by one or more people." (DiMP 2008)

*Basic Services:* "Shared water supply and sanitation, refuse removal, stormwater management, access by emergency vehicles, together with some fire prevention/limitation measures. They are provided to an informal settlement to ensure that the health and safety of the community meet basic minimum criteria." (DiMP 2008)

*CRA – Community Risk Assessment:* "An approach that uses participatory action research methods to place communities in the lead role for the assessment, active planning, design, implementation and evaluation of activities aimed at reducing the community's risk to disaster." (DiMP 2008)

DA – Democratic Alliance, opposition party to the ANC

DiMP – The mission of the Disaster Mitigation for Sustainable Livelihoods Programme (DiMP) is to promote disaster mitigation and risk reduction as strategies for sustainable development. It encourages the integration of disaster mitigation strategies with development programmes, particularly those targeted at economically vulnerable communities" (DiMP 2002:136)

*Disaster Risk Management:* The systematic process of using administrative decisions, organisation, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters. This comprises all forms of activities, including structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards.

DRMC – Disaster Risk Management Centre

*Firebreak:* "A natural or constructed barrier utilised to stop or slow down fires that may occur, or to provide a control line from which to work." (DiMP 2008)

GDP – Gross Domestic Product

HBRA - Hout Bay Ratepayers Association

HDI – Human Development Index

*Informal settlement:* Residential areas that do not comply with local authority requirements for conventional (formal) townships. They are, typically, unauthorized and are invariably located upon land that has not been proclaimed for residential use. They exist because urbanisation has grown faster than the ability of government to provide land, infrastructure and homes.
Informal settlements tend to be characterised by:
> - Infrastructure that is inadequate
> - Environments that are unsuitable
> - Population densities that are uncontrolled and unhealthily high
> - Dwellings that are inadequate
> - Poor access to health & education facilities and employment opportunities
> - Lack of effective government and management. (DiMP 2008)

*Land-use planning:* Branch of physical and socio-economic planning that determines the means and assesses the values or limitations of various options in which land is to be utilised, with the corresponding effects on different segments of the population or interests of a community taken into account in resulting decisions. Land-use planning can help to mitigate disasters and reduce risks by discouraging high-density settlements and construction of key installations in hazard-prone areas, control of population density and expansion, and in the siting of service routes for transport, power, water, sewage and other critical facilities. (UNISDR 2004)

*Mitigation:* Ongoing structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards. (Holloway 2003)

*Preparedness:* Activities and measures to ensure effective response in an emergency and its impacts, including timely and effective early warnings and the temporary removal of people and property from a threatening location. (Holloway 2003)

*Prevention:* Activities to provide outright avoidance of the adverse impact of hazards and related environmental, technological and biological disasters. (Holloway 2003)

RAHB – Residents Association of Hout Bay

*Recovery:* Decisions and actions taken after a disaster with a view to restoring living conditions of the stricken community, while encouraging and facilitating adjustments to reduce disaster risk. (Holloway 2003)

*Relief/response:* The provision of assistance and/or intervention during or immediately after a disaster to meet the life preservation and basic subsistence needs of those affected. (Holloway 2003)

*Resilience/resilient:* The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organising itself to increase its capacity for learning from past disasters for better future protection and to improve risk reduction measures (UNISDR sited in Kelman 2007)

SANCO – South Africa National Civic Organization

The Act – The Disaster Management Act, Act 57 of 2002

UCT – University of Cape Town

UNDP – United Nations Development Program

UNISDR – United Nations International Strategy for Disaster Reduction

## Introduction

A report from the UNDP (Coppola 2007) states that urbanisation is one of two[1] factors that particularly influence the risk level of a nation and its population. According to the UN-HABITAT, Africa has the highest rate of urbanisation in the world, further stating: "most urban growth in Africa is driven by natural growth among already marginalized urban populations and in-migration of the poor and displaced. Consequently, the growth is in unplanned urban settlements where the construction is of low quality and on land, which is often unsuitable for habitation. The new urban centers of Africa are generating a multi-layered accumulation of disaster risk." (UNISDR 2009).

South Africa is a dynamic developing country in transition and the National Disaster Management Act, act 57 of 2002 has a strong focus on prevention and highlights the benefits of holistic disaster risk reduction. Disaster risk reduction is the cornerstone of modern disaster management, with a focus on risk management, rather than response management. It's been suggested that economic losses worldwide during the 1990's due to natural disasters could have been reduced by $280 billion if 'only' $40 billion had been invested in preventative measures (Chafe 2007).

In 2001 South Africa qualified as one of the world's wealthiest nations, ranked 32nd (Khandlhela & May 2006), but ended up positioned at 115 out of 175 countries on the Human Development Index (HDI).  Thus reflecting the poor social conditions of the country: the corresponding number in 2010 was 110 (UNDP 2010). In 1992 South Africa was ranked 93rd on the HDI, being one of a mere handful of countries that has experienced a decline in human development since 1995 (Khandlhela & May 2006).

Local government has a responsibility to reduce the risks in the urban environment by providing services and environmental infrastructure. Many residents in informal settlements lack access to basic services, often due to a deficit in resources on the local government level. Furthermore, numerous settlements in the city of Cape Town are not sustainable due to inadequate or indeed non-existent planning practices (DiMP 2002:46).

The gap between the rich and the poor in the Cape Metropolitan area is vast. Historical inequities, as a result of the apartheid regime, have not yet been overcome (DiMP 2002). Imizamo Yethu, an informal settlement, situated within a wealthy suburb, Hout Bay, well illustrates the complexity and struggle that is the reality in many parts of South Africa today. This community juxtaposition of wealth and poverty also grasps the fact that people are not equally able to access resources and opportunities, nor are they equally exposed to hazards (Wisner et al 2004), even though they are living next door to each other.  Imizamo Yethu was originally designed to accommodate around 3000 people: but, 20 years later, the number of occupants is unknown and figures range from 16 000 – 36

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[1] The other one being rural livelihood (Coppola 2007).

000, and the community is facing a range of hazards. At the same time, Imizamo Yethu has been earmarked for an upgrade for over a decade, which has the potential to improve the lives of its residents significantly and in many ways reduce the risks in the community.

## Research aim and goals

The purpose of this study is to improve the understanding of the challenges to disaster risk reduction within vulnerable urban communities at risk to re-occurring rapid-onset disaster events (such as flooding and fires); and also to slow onset and day-to-day hazards such as environmental health hazards. This research supports the implementation of the Act, which has the potential to improve the lives of all communities at risk to hazardous events. This report aims to give reliable and relevant information to community and multi-level decision makers.

## Research objectives

Primary research question:

- *What challenges to disaster risk reduction do stakeholders in Imizamo Yethu express?*

## Scope and limitations

The last National Census in South Africa was conducted in 2001 and it's difficult to find accurate statistic on demographics, income, unemployment rates etc., which can be considered a limiting factors for an extensive analysis. This report aimed to cover a broad perspective of the issues in Imizamo Yethu; but unfortunately at the time of fieldwork the head of community policing forum and the ward councillor of Hout Bay were unreachable. Additionally, the Residents Association of Hout Bay (RAHB) and Hout Bay Ratepayers Association (HBRA) were not willing to participate in the project. Their input would have been greatly appreciated.

South Africa is a country with high rates of crime and HIV/Aids. Although important societal issues, these two factors were not identified as challenges to disaster risk reduction but were rather discussed in the context of vulnerability in informal settlements. It seems clear that crime and HIV/Aids do greatly impact the community and use an unknown amount of resources, however, this topic is not further investigated in this report.

It should also be noted that apartheid has influenced the current context of SA but this report is mainly focusing on the current political agendas. Additionally, this report focuses on the conditions in the Western Cape; i.e. the conclusion may not comply with other provinces in South Africa since the Western Cape is among the richest provinces and therefore have more resources compared to other provinces. Lastly, the scope of this report is to give the stakeholders perspective, not to look for specific answers.

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## Ethical considerations

This thesis strives to remain objective and not to take side with any of the stakeholders. While the different stakeholders have different agendas these are presented equally and they all had equal opportunity to put forward their ideas and goals. The stakeholders were interviewed separately and asked about the same topics.

## Organisation of the thesis

Chapter one describes the methods used for the project; grounded theory, semi-structured interviews, focus groups and secondary data research. The second chapter of the thesis presents a conceptual framework, aiming to introduce the concepts of hazard, vulnerability, poverty, risk, disaster, disaster risk and disaster risk reduction. The third chapter introduces the Western Cape context, considering urban migration, the risk context in informal settlements and policy and planning frameworks for the Western Cape. The fourth chapter presents the context of Imizamo Yethu; its history and development, the population and the current development state and the hazards facing the community. It also discusses the proposed upgrade of the settlement.

The fifth chapter presents the findings from the interviews with the stakeholders. It starts with a presentation of the hazards facing Imizamo Yethu from the stakeholders' perspective, aiming to give the reader an introduction to the complex interrelations among the different hazards the community is facing. The hazard introduction is followed by an analogy to describe the challenges to disaster risk reduction from a growing community's perspective; a short core summary is used to give an introduction to the identified challenges, grouped into five main themes. These five main themes are then further explored and the same themes are used in chapter six; the analysis and discussion. The seventh and last chapter presents the conclusions from the study.

# 1 Methodology

The fieldwork for this study was conducted through a qualitative research approach with grounded theory as the working methodology. In short, the information from the field was gathered through semi-structured interviews and focus groups. In addition to the fieldwork, primary and secondary data and previous research on the settlement was reviewed. From the literature study a sound theoretical basis was established and best practices determined in terms of which the findings of the study could be evaluated and put into perspective.

## 1.1 Grounded theory

Grounded theory is a qualitative research methodology, emphasising the generating of a theory from the data collected during the research process (Charmaz 2006). The development of grounded theory started during the work of *Awareness of dying* (1967) by the two sociologists, Barney Glaser and Anselm Strauss. Glaser and Strauss aimed to formulate hypothesis based on conceptual ideas (Glaser & Strauss 1967). Charmaz (2006) stress that grounded theory should be seen as a set of principles and practices, a way to learn about the world and a method to develop theories and understand them. In short, the process consists of gathering data and ends with writing analysis and reflections.

Grounded theory may appear to work in contradiction of traditional scientific methods – collecting data as the starting point instead of developing a hypothesis. Charmaz (2006:10) points out that the researcher should "assume that neither hypothesis nor theories are discovered. We construct our grounded theories through our past and present involvement and interaction with peoples perspectives and research practices". Additionally, grounded theory should be viewed as a set of principles and practices, not as prescriptions or packages (Charmaz 2006). Focus is on data collection and analysis instead of trying to find data that fit a hypothesis. Glaser and Strauss (1967) points out that validity in its traditional sense is not an issue for grounded theory, since the produced theory rather should be judged by its fit, relevance and workability.

The first analytical step is through so called qualitative coding, a process to define what the data is about and identify the key points. Coding means, "naming segments of data with a label that simultaneously categorises and accounts for each piece of data" (Charmaz 2006:43). This initial coding can be conducted by asking the following questions:

- What is this data a study of? (Glaser 1978:57; Glaser & Strauss 1967)
- What does the data suggest? Pronounce? (Charmaz 2006:47)
- From whose point of view? (Charmaz 2006:47)
- What theoretical category does this specific datum indicate? (Glaser 1978)

The next step is to build concepts based on the codes of similar content. By analysing the data it is possible to find similarities and differences and this

process helps identify the different concepts. These concepts are then used to create categories based on their similarities. The different categories are then analysed and reflected upon and form the foundation for the theory. The procedure is illustrated in *Figure 1*

| Codes | •Gather key points of the data. |
| Concepts | •Codes of similar contents are collected and allows the data to be grouped. |
| Categories | •Groups of similar concepts generates a number of categories. |
| Theory | •The theory lays the foundation for conceptual ideas |
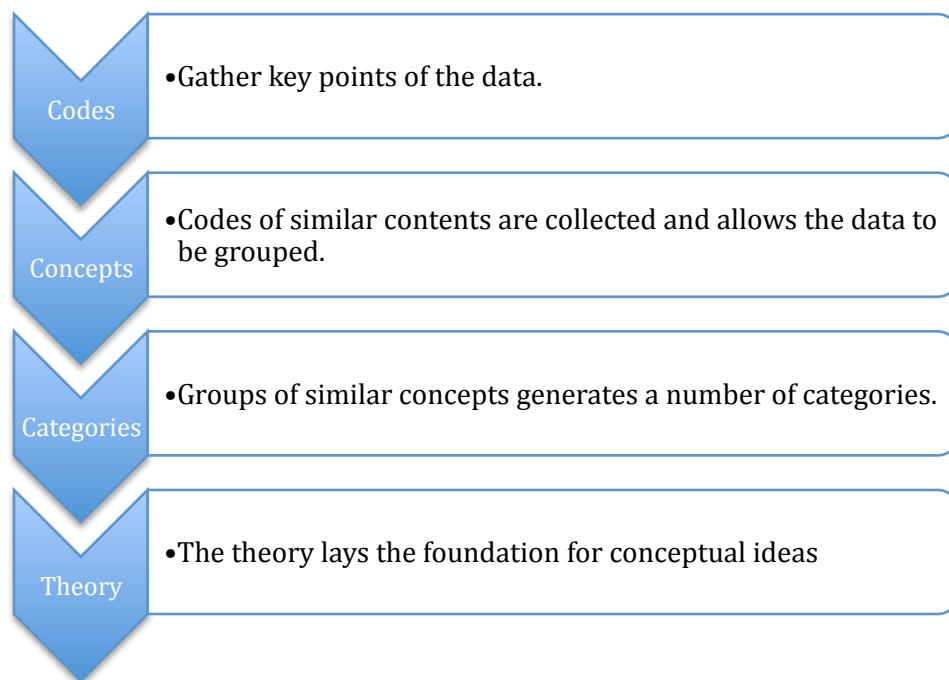
**Figure 1** *Working procedure of grounded theory (Adapted from Charmaz 2006).*

Grounded theory was chosen to explore the problems from a wide perspective and to investigate the context of disaster risk reduction in the informal settlement of Imizamo Yethu. The methodology was chosen because there was no idea what or where the challenges were. It should be noted that the coding is not a reflection of the empirical truth but the reflection of the researcher's view.

Other approaches were explored before grounded theory was decided upon. The problem with the other approaches was to try fitting the data into already existing frameworks, this was unproductive due to the complexity of the different challenges. Grounded theory has guided the categorising and analysing of the data collected for this report in accordance with the description above and is explained further on in this chapter.

## 1.2 Fieldwork

The fieldwork for the study was initially planned in Sweden in collaboration with a student from the Master of Disaster Management programme of Copenhagen University[3]. The cooperation continued throughout the fieldwork in South Africa and has been an important part during the writing process with exchange of thoughts, ideas and reflections. Even though the interviews were conducted during a specific number of days, the entire stay in Cape Town (5.5 months in

[3] Master of Disaster Management is a cooperation between the University of Copenhagen and Lund University, for more information see www.mdma.ku.dk

total) was very helpful in order to understand the culture and context of South Africa, something that wouldn't have been possible from a distance.

### Information research

The first step of the fieldwork was to gain a general understanding of the settlement in Hout Bay, Cape Town. This was done through a guided tour through the settlement and a visit to the Hout Bay library. Next step was to make contact the University of Cape Town and their programme for Disaster Mitigation for Sustainable Livelihoods Programme, DiMP. They offered access to their library and previous research conducted on the settlement. This local research proved to be very valuable.

In addition the fieldwork preparations it was important to understand the concepts of disaster risk reduction in Cape Town and South Africa. It was essential to understand the Disaster Management Act of 2002, its implementation and related disaster risk reduction policies within South Africa. Throughout this process a significant amount of literature was reviewed concerning informal settlements and urbanisation in the South African context.

A wider concept review was also undertaken to frame the focus of the research. These concepts are discussed in the Conceptual framework in chapter two. This initial literature review involved Google scholar, the Lovisa database at Lund University and DiMP's resources. Additional literature was accessed through the Disaster Management and Risk Management programme of Copenhagen and Lund University. Keywords for the literature search were disaster risk reduction, disaster risk management, vulnerability, risk, urbanisation, informal settlement and urban hazards, involving both local and international research papers. After the initial walk through a more targeted second research phase was conducted, primarily using local newspaper, city media releases, NGO reports and a review of postgraduate theses, course projects and reports from DiMP.

### Stakeholder identification

From this review key stakeholders were identified and asked to participate in the research project. A 'snowball' interview process was used, whereby additional stakeholders and key decision makers were identified as the research unfolded. Community stakeholders were chosen based on their involvement in the proposed upgrade of IY, while city officials were identified through response and disaster related relationships with the community. Unfortunately, the head of community policing forum and the ward councillor of HB were unreachable at the time of fieldwork. Additionally, the Residents Association of Hout Bay (RAHB) and Hout Bay Ratepayers Association (HBRA) were not willing to participate in the project. Their input would have been greatly appreciated.

### Semi-structured interviews

The interviews were conducted as semi-structured interviews, each with their own question guide. The interview guidelines are presented in Appendix E. In short the interviewees were grouped into four categories;

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A. External input: Envirochild (NGO) and town planner from City of Cape Town
B. Community leadership, community tour guide
C. Community: Fire Department and Health Care Centre
D. City of Cape Town Agencies: Disaster Risk Management

Some of the questions were to gain better insight into the context of IY, while others specifically tried to investigate what the challenges are to implementing disaster risk reduction within the settlement. In cases when the information differed between the different stakeholders, clarification was done to see if there was any additional information on the topic. All information gathered was triangulated.

Semi-structured interviews were used since it encourages the participants to talk more freely around the topic, using so-called 'open' questions. The objective of a semi-structured interview is to understand the respondents point rather than make generalisations (Sociology Central 2011). Open questions were used since the purpose was to investigate different challenges from the stakeholders' perspective; not to look for a specific answer.

By using semi-structured interviews the respondent gets a chance to express what he/she thinks is important and go deeper into that topic, but at the same time it is easy to get sidetracked. From a validity point it can be argued that semi-structured interviews give a broad spectrum of information. However, it is impossible to know whatever the interviewed is giving correct information or not. The 'personal' touch on the interviews can make it difficult to generalize the findings, pick out the relevant information from the interviews and the analysis can be difficult if the respondents have gone into different topics or if the questions have been (too) different (Sociology Central 2011).

### Focus groups
Instead of conducting individual interviews with the staff from the Fire Department of Hout Bay and the Disaster Risk Management team of Cape Town focus groups were used. It gave the participants a chance to discuss the questions among each other, highlight the issues the thought were the biggest challenges to disaster risk reduction and debate when needed. It created a creative space to investigate the different topics. The method was experienced to be very useful since it brought to light and identified ideas that hadn't been considered of by the research team. The questions being used were still of so-called open questions type.

### Data analysis
The collected data was categorised in line with the 'grounded theory' approach to identify the key challenges to disaster risk reduction in Imizamo Yethu. The interviews were reviewed and key points highlighted to code the data. The interview transcripts were cut into answer stripes and than filtered through the following questions to identify concepts.

1. *What are the challenges to disaster risk reduction in Imizamo Yethu?*
2. *Is this a stakeholder's perspective on challenges to DRR?*
3. *What challenge is being discussed?*

By dissecting the interviews, key points were grouped into similar concepts that answer specifically to the primary research question; *what are the challenges to disaster risk reduction expressed by the stakeholders.*

Initially 25 concepts were identified and these were than further analysed. This process consisted of writing the 25 concepts on to key cards and arranging the data to identify relationships, groups and themes. The relationship and sphere of influence that key concepts had become visible when grouping the concepts into related categories. These categories, referred to as the main themes, form the basis for the findings and the analysis.

It was challenging to reduce the 25 concepts into main themes due to the interrelationships between the concepts. E.g. the first theme *Community growth* was built up by the concepts of *unregulated rapid settlement growth, population dynamics, over crowding, immigration and migration from the Eastern Cape.* Even though these concepts are important on their own, and can be grouped in other ways, these main ideas dominated the stakeholders' discussion and were reflected in the key card analysis. The use of five main themes covered the range of stakeholders' perspectives and allowed for a clear write up of the findings.

The identified main themes are presented as headings in the findings and the analysis section. The analysis is linked to the findings, and discussed against concepts introduced in chapter 2 on disaster risk reduction. Challenges observed in the field and from a holistic review of all the stakeholders' interviews are not used in the coding but are presented in the analysis and discussion. The data collection and analysis ultimately aims to identify the key challenge to unlocking disaster risk reduction within Imizamo Yethu.

# 2 Conceptual Framework for Disaster Risk Reduction

## 2.1 Hazard

The UNISDR defines hazard as:

> *"a potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Hazards can include latent conditions that may represent future threats and can have different origins: natural (geological, hydro meteorological and biological) or induced by human processes (environmental degradation and technological hazards). Hazards can be single, sequential or combined in their origin and effects. Each hazard is characterized by its location, intensity, frequency and probability"* (UNISDR 2004).

In short, to be considered a hazard an event or set of circumstances has to be threatening something people put value on. Wisner et al (2004) uses a shorter definition of hazard, and focuses on natural hazards, but the concept is still the same; 'the natural events that may affect different places singly or in combination at different times. The hazard has a varying degree of intensity and severity' (2004:49).

Hazards can be divided into sub-categories, rapid or slow onset hazard or hazards of daily life. *Figure 2* illustrates examples of different kind of hazards in South Africa, especially in an informal settlement context.
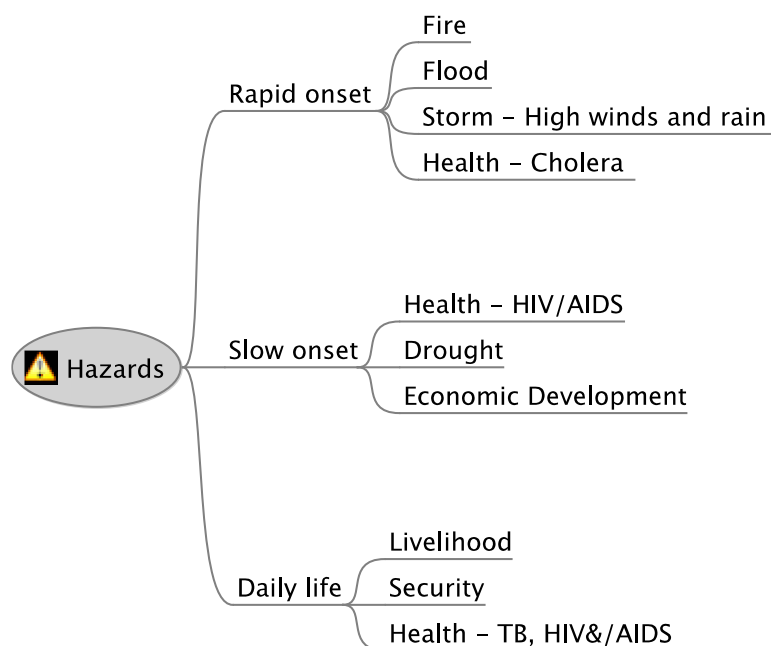


*Figure 2* *Sub-categories of hazards.*

## 2.2 Vulnerability

Two societies might be facing the same hazard but they could have different vulnerabilities to the potential damages from the hazard. The links between underlying vulnerabilities and disaster risk have been highlighted since the beginning of the 1980's (Cuny 1983; Sen 1981). To understand risk, it is important to understand why some people are affected while others are not, which factors determine their vulnerability and what impact it has on the final risk (Coburn et al 1994).

UNISDR (2004) defines vulnerability as "the conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards". Coburn (1994) puts a greater emphasis on loss and defines vulnerability as "the degree of loss to a given element at risk (or set of elements) resulting from a given hazard at a given severity level" (p. 41).

Klein and Nicholls (1999:184) take a different approach and describe vulnerability as a function of:
- Resistance, the ability to withstand change due to a hazard
- Resilience, the ability to return to the original state following a hazardous event
- And susceptibility, the current physical state, without taking into account temporal changes.

Wisner et al 2004 states that day-to-day activities comprise physical hazards, individual choices and social relations that all become integrated as a pattern of vulnerability. Vulnerability influences individuals, groups, communities, and even a countries' capacity to anticipate, cope with, resist and recover from the impact of a natural hazard.

To summarise the definitions above, it should be stressed that peoples' vulnerability is never dependent on a single element: hence, to reduce disaster risk there is a need for a cross cutting approach to address these underlying drivers. Reducing vulnerability is not only a tool to deal with poverty, but also a step to address disaster preparedness and in the long run, development itself. It has been suggested that the number of natural hazard events (e.g. earthquakes, floods or cyclones) has not increased in the past decades, but the human vulnerability has increased, explaining the rising numbers of disasters in terms of victims and losses (Wisner et al 2004).


## 2.3 Poverty

Those who suffer the most and are the first casualties in a disaster are the poor: the link between poverty and natural disasters is well established (Dayton-Johnson 2004; Wisner et al 2004; Coppola 2007). Poverty often equals lack of land; or the fact that people are forced to live on marginal land or in dwellings of poor quality, therefore more likely to suffer damages from natural hazards.

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Furthermore, financial liquidity constraints limit their access to savings or insurance from the risk they are facing (Dayton-Johnson 2004;Yomandi 2001).

There is a consensus that small and large-scale disasters contribute to both the stability and in increased poverty levels. At the same time poverty is seen as a contributing factor to disaster risk conditions; e.g. occupation of unsafe sites and poor building construction (Lavell 2008). In informal settlements many risks are strongly correlated with social and economic vulnerability, but also unstable employment or livelihood options (DiMP 2008).

Poverty can be measured not only by income but also by indicators such as health and education status, access to housing and basic services, and occurrences of crime. Moser (1996) suggests that vulnerability is a better measurement of peoples' well-being since it captures the multi-dimensional aspects of socio-economic changes. By using vulnerability, it is possible to take into account the strategies used by individuals to cope with gains as well as losses but also how they cope with socio-economic adversity (Moser 1996). A number of factors determine poor peoples' vulnerability: location, age, gender, ethnicity, community structure, community decision-making processes and political issues (Yodmani 2001; Wisner et al 2004). Vulnerability and poverty are often closely related (DiMP 2002) but 'poverty measures are generally fixed in time' (Moser 1996:23). By focusing on vulnerability it is possible to go beyond the status of a particular moment and instead recognise the ongoing process to construct well-being.


## 2.4 Risk

Where we live, what we live in, and what we do, are all factors that determine the risks to which we are exposed. By understanding what makes a community or an individual more vulnerable than others, it is possible to take the proper measures to reduce their risks (Coburn et al 1994). Simplistically, a risk analysis consists of three basic questions (Kaplan & Garrick, 1981):

1. What can happen?
2. What is the probability it will happen?
3. In case it does happen, what are the consequences?

By answering these questions it is possible to determine the level of risk facing an individual, a community, a city or a nation. However, various disciplines define risk in different ways and what is considered a risk depends on the observer (Van Niekerk 2005; Renn 1998). Slovic (2001) states that social scientists view risk as something socially constructed in order to deal with hazards in the society. Engineers on the other hand acknowledge the fact that risks are associated with certain activities and approach this by quantifying the probability for different scenarios and the consequences they might cause.

One of the most common definitions of risk in social science is [risk = hazards * vulnerability] (Coppola 2007; DiMP 2002; DiMP 2008; Van Niekerk, 2005; Wisner et al. 2004). 'It is the product of the possible damage caused by a hazard

due to the vulnerability within a community' (Von Kotze, 1999:35). By going beyond [probability * consequences] it is possible to define risk within the hazard's social context (Slovic 2001). Wisner et al (2004) argues that the 'risk of disaster is a compound function of the natural hazard and the number of people, characterised by their varying degrees of vulnerability to that specific hazard, who occupy the space and time of exposure to the hazardous event.' (p. 49). The UNDP (Coburn et al 1994) break the level of risk down to three elements:

- The hazards occurrence probability
- The elements at risk
- The vulnerability of the elements at risk

Furthermore it should be noted that access to resources such as economic, social, political and physical has a significant impact on people's vulnerability and normally put poorer communities more at risk and also make them less resilient (Van Niekerk 2005).

The term loss should also be mentioned, since depending on how the expected loss is defined, whether it's the number of deaths, number of injuries or loss of property, the absolute risk could differ significantly. One specific risk in the urban environment could result in a range of outcomes in relation to peoples' day-to-day lives (DiMP 2002). A hazardous event can be expected to cause two deaths, but could on the other hand also result in thousands of people losing their livelihood. Depending on how losses are defined, the same risk can be viewed completely differently, and loss must therefore be defined from the social context of the disaster and the values of the community at risk (Kunreuther & Useem, 2009).

It is also quite recently that losses have been seen from both a long-term and a short-term perspective. Traditionally the loss has been associated with loss of life and property, limited to the instant phase of a disaster. However, new risk assessment models tend to take in to account a more diverse view, such as disruption in commercial flow in the long run, but also post-traumatic stress disorders. By adding the long-term perspective of loss, the term risk becomes even more complex than it has been previously (Kunreuther & Useem, 2009).

## 2.5 Disaster
The term disaster could be defined in a number of ways and is largely a subjective matter – the experience of an individual, community, municipality or country in a particular situation. On an individual level, the daily life of poor and vulnerable people might be considered a 'disaster' to an outsider but is part of the individual's normal life (Wisner et al 2004).

Pelling (2001) distinguishes between "catastrophic" disasters, linked to a specific event, and "chronic" disasters, which still overwhelm a community's capacity to cope yet are a part of daily life. Chronic disasters can for example be: insufficient waste management, inadequate sewerage, financial situation, and population

density. Kelman (2007) suggests that these processes should be viewed as "disaster conditions" in contrast to "disaster events".

Kelman (2007) defines disaster as "a situation where a community's ability to cope with an event is surpassed, whether that event is environmental or non-environmental and whether that event is extreme or not" (p. 1). Dayton-Johnson (2004) discuss that a disaster is an interaction between a hazard and a social system, and it will be declared a disaster if the society is vulnerable to the hazardous event. Chafe (2007) discusses how disaster is a "product of an ever-changing relationship between natural events (hazards), social and physical conditions (vulnerabilities) and the risk management systems that exist" (p. 114) Von Kotze (1999) is of the same opinion and stresses that "disasters are seen not so much as disruptions of an otherwise functioning world, but as the result of fundamentally unsustainable social, economic, political and environmental conditions and practices" (p. 2). The authors of *At Risk* (Wisner et al 2004) also point out the interaction between vulnerability and hazard; "a disaster occurs when a significant number of vulnerable people experience a hazard and suffer severe damage and/or disruption of their livelihood system in such a way that recovery is unlikely without external aid" (p. 50)

Furthermore, Wisner et al (2004) stresses that there is a danger in treating disasters as something peculiar with their own special focus. By separating 'natural' disasters from the social context, vs. the influence of how the hazard affects people, there is a risk that too much emphasis is placed on the hazard itself and not enough on the social environment.


### *Rapid vs. slow on-set disasters*
Disasters can be split into two categories: rapid and slow-onset. Rapid-onset, or acute risk events, could be earthquakes, fires or industrial accidents, not necessarily long-lasting events, but often resulting in hardship or long-lasting consequences. Normally these kinds of events receive more attention compared to slow onset disasters, both from media but also in the form of funds allocated to manage the situation. Financial resources are generally made available once the disaster is a fact and not for prevention thereof (DiMP 2002).

Slow-onset disasters can instead be described as chronic risk processes. The event could be of smaller scale but still result in longer-term consequences: for example, the effects of poor drainage system on informal communities or impact of air pollution on community health (DiMP 2002). Chronic risks can also be described as day-to-day risks that urban residents are exposed to, struggles that challenge peoples' attempt to improve their quality of life. Long-term risk events are generally not attractive to the media, and usually there are no funds set aside unless, 'there is enough money available to upgrade environmental services and infrastructure, or to implement the policy and legislation necessary to reduce risks' (DiMP 2002:33).

## 2.6 Disaster risk

The UNISDR (2004) defines disaster risk as 'the probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human-induced hazards and vulnerable conditions.'

DiMP (2008) defines disaster risk, in an informal settlement context, as 'the chance of hardship or loss resulting from the interaction between natural or other hazards and the vulnerable households and communities that are exposed to them' (2008:17). People in informal settlements are faced with every-day chronic risk such as fire, flooding and health risk. These risks have the potential to turn into emergencies as well as disasters, causing widespread loss of property and prolonged hardship (DiMP 2008).

As stated above, R = H*V, but in terms of disaster risk, risk is often defined as R = H*(V/C) (Wisner et al 2004), C being the capacity of the community to cope with the hazard. Yodmani (2001:4) describes it as 'in one way or another, in any community, risks are always present. The possibility that a disaster might or might not occur will depend on whether those risks are adequately managed or not.'

GZT (2004) stresses that coping strategies are part of reducing vulnerability and describes disaster risk as in *Figure 3*.
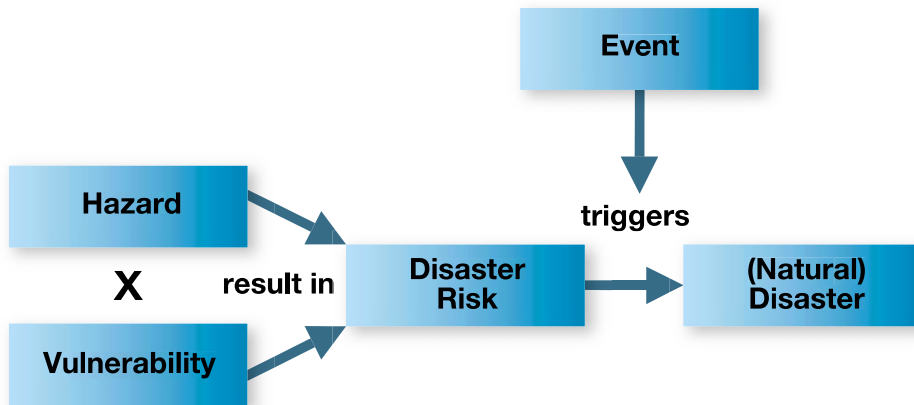


*Figure 3* *Disaster risk as a product of hazard and vulnerability (Source: GZT 2004).*

Risk is cross-cutting, a product of hazard and vulnerability. Disaster is the result of interaction of both; theoretically, there can't be a disaster unless both exist (Wisner at al 2004). Wisner et al (2004) uses the term risk of disaster to equal vulnerability * disaster, defined as a 'number of people characterized by their varying degree of vulnerability to that specific hazard' (2004:49).

## 2.7 Disaster risk reduction

The importance of the socio-economic role has been acknowledged in disaster management during the past few decades and contingency planning has improved the efficiency among relief agencies. But unless the underlying causes are tackled, the problems will continue to occur again and again, possibly in different forms and at a higher cost (Wisner et al 2004; Yodmani 2001). The US Federal Emergency Management Agency has calculated that every dollar spent on mitigations saves $2 in coping (World Bank 2001 sited in Dayton-Johnson 2004). During the Humanitarian & Disaster Response Technologies Conference 2010 in Cape Town, Dr. Cosmas[4] suggested that $1 on mitigation saves $15 on response phase.

During the end of the 20th century the loss of human lives and material losses increased exponentially, without any evidence of increased number of hazardous events. This indicated a clear connection between the consequences of disasters and the rise of people's vulnerability, and highlighted the need to address risk drivers instead of just managing the disastrous event (Coburn et al 1994;Holloway 2003; Lavell 2008; Vermaak & van Niekerk 2004; Wisner et al 2004; Yodmani 2001). Yodmani (2001) describes it as: "Disasters are no longer viewed as extreme events created entirely by natural forces but as unresolved problems of development" (p. 2). Vermaak and van Niekerk (2004) state that disaster risk reduction "has a clear focus on hazards; their characteristics and impact; vulnerability in terms of social, political, economic and environmental factors; and risk as the product of hazards interacting with conditions of vulnerability" (p. 558).

The UNDP (Coburn et al 1994) define long term risk reduction as "measures to reduce the scale and/or the duration eventual adverse effects on unavoidable or unpreventable disaster hazards on a society which is at risk, by reducing the vulnerability of its people, structures, services and economic activities to the impact of known disaster hazards" (p. 69). The UNISDR (2002:25) defines DRR as 'the systematic development of and application of policies, strategies and practices to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) adverse impact of hazards, within the broad context of sustainable development'. Additionally, it is widely accepted that in order to succeed with DRR it needs to be applied upwards from community level (Vermaak & van Niekerk 2004).

Holloway (2003) stresses that a separation between relief operations and underlying drivers of vulnerability can result in misjudging of creeping "co-disasters" such as HIV/AIDS epidemics, which further compromises people's vulnerabilities and mitigation capacities. By applying a holistic view 'disaster risk reduction compromises a series of management actions that require the

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[4] Head of the Least Developed Countries, Small Island Developing States and Emergency Telecommunication Division of the Telecommunication Development Bureau, Geneva, Switzerland.

involvement of communities and various stakeholders and partners' (AfDB et al 2004:1)

DiMP (2008) stresses that disaster risk reduction is a cross-disciplinary concept and needs to be applied on municipal as well as provincial levels. They furthermore state that disaster risk reduction involves both structural and non-structural interventions, ranging from improvement of physical infrastructure to social vulnerability reduction measures.

# 3 Western Cape Context

The Western Cape is the second richest province, both in total income and per capita, in South Africa. However, the province is marred by high poverty rates, inequalities in distribution of income and unemployment, but not to the same degree as other parts of South Africa (Elsenburg 2005).

Compared to the other provinces in South Africa, the Western Cape is outstanding in service deliveries. In a monitoring project during 2001-2007 by the national Department of Co-operative Governance and Traditional Affairs (CoGTA) the Western Cape was said to be best in the country to deliver basic services[5] to its inhabitants. 88% had universal access to water, sanitation, refuse collection and electricity (91% for the city of Cape Town). The city of Cape Town was the only one among 52 districts and metropolitan municipalities with a performance above 90%. These figures can be compared with the Eastern Cape where 33% have universal access to basic services; in the Limpopo province the corresponding figure was 15%. The overall worse performing local authority can be found in the Eastern Cape; the Alfred Nzo district council, with 68% of the households are below the poverty line and only 2% have universal access to basic services (Yeld 2010)

Unemployment is a widespread challenge across South Africa. Unemployment among Black South Africans in Cape Town sky rocketed to 49.7% in 2001, but had decreased to 39.7% by 2007. This can be compared to the unemployment rate among the white population, which has been on a steady 4-5% since 1996. The overall unemployment rate in South Africa was 24.5% in 2007 (Small 2008). Of South Africa's 12.4 million households (43.37 million individuals), 40% is said to be below the poverty line, which is claimed to be R5350 per capita per year. The corresponding figures for the Western Cape is 24% (Yeld 2010).

## 3.1 Urban migration

Rapid urbanisation is a problem in many developing countries, putting increased number of people at risk (DiMP 2002; DiMP 2008; Wisner et al 2004). In general, people move to the urban areas in hope of better opportunities and to improve and/or secure their livelihoods, it can be seen as a response to opportunities and uncertainties created by a broader economic process (Wisner et al 2004). However, many urban areas do not have the capacity to accommodate and facilitate the basic services for the constantly growing number of residents. Lack of and/or access to land often forces people to settle in hazardous locations and high-density informal areas, often with limited service deliveries, such as waste removal, and access to basic utilities (DiMP 2002; Vermaak& van Niekerk 2004; Wisner et al 2004). Pelling (2007) describes today's cities as hotspots of disaster

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[5] Basic service levels (Yeld 2010):
Water supply – piped water inside yard/piped water within 200 m
Sanitation supply – flush toilet with septic tank/pit latrine with ventilation
Refuse removal – communal skip
Electricity supply – connection to the grid

risk and Wisner et al (2004) states that urbanisation is a major factor in the growth of vulnerability, especially for low-income families that live in squatter settlements. Overcrowded settlements in hazardous locations do not only put people at risk for natural hazards but also pose health risks (Wisner et al 2004).

The city of Cape Town has attracted a large number of migrants and immigrants over the past 15 years, the majority arriving from the Eastern Cape (DiMP 2008; Small 2008) and combined with a natural growth the number of informal settlements has increased; 28 300 in 1993 and 108 899 in 2007 (Cape Town 2010). Another aspect of urbanisation is that urban populations are not a homogenous group, making it a challenge to identify needs and priorities, or to strengthen community level organisations (DiMP 2002). DiMP (2008) defines community as a "group of people who live in a particular cluster of households, settlement, suburb, village or neighbourhood" (p. 13). Thus, in the era of urbanisation a community is not necessarily characterised by a shared history, culture, language or values but rather by its power dynamic, political agendas and hierarchies.

## 3.2 Risk context in informal settlements

The Western Cape is known for wildfires, stormy weather and many types of floods (DiMP 2010). Between 1995 and 2005 more than 8554 informal dwelling incidents occurred in Cape Town. Estimation suggests that 40 558 households, approximately 160 000 people, were affected. Destruction of property, injuries and loss of documents meant a serious setback on those households affected (DiMP 2008). Fires are a problem in many of the informal settlements, accounting for 97% of disaster related events in Cape Town, of which the majority take place in informal settlements (McGregor 2006)

Informal and congested urban settlements often lack resources to protect themselves against hazards such as flooding, heavy rains, house fires and health risks. Not only are they at greater risk due to their physical constructions but also due to their location on former rubble dumps, wetlands or mountain slopes (Cape Town 2010). At the same time, they are often exposed to an increased risk of income and property loss and/or risk of illness, injury or death. A disaster may not only worsen existing conditions (vulnerabilities) but it can also be a serious setback on development gains and investments. Each shock places increased pressure on people's capacity to recover and rebuild their existing standards of living (DiMP 2002). Risk reduction in informal settlements is often characterised by awareness and education programmes. Informal settlements may also pose a risk to the surrounding environment, due to waste-water and burning of fossil fuels. In addition, residents in informal settlements are more vulnerable to diseases and epidemics (Cape Town 2010).

## 3.3 Policy and planning frameworks

Legislations and policies are a cornerstone when it comes to reducing risks. They can both be an important tool to reduce the effects of disasters and mitigate hazards and at the same time improve living conditions and opportunities (Wisner et al 2004).

In the Western Cape there are four policy and planning documents to guide disaster risk reduction:

- South Africa Disaster Management Act (No. 57 of 2002)
- The National Disaster Management Framework
- Isidima: The Western Cape Sustainable Human Settlements Strategy
- The City of Cape Town Informal Settlements Master Plan

### South Africa Disaster Management Act (No. 57 of 2002)

Back in 1994 the Cape Flats suffered from the damages caused by severe floods, and brought to attention the urgency for a reform in the disaster risk management field. The result is the Disaster Management Act, (Act No. 57 of 2002), referred to as the Act, which was empowered January 15 in 2003. Compared to previous policies and strategies, which often focused on relief and post-disaster recovery, the Act focuses on proactive risk management, including a continuous strategy with both proactive and reactive measures (Viljoen & Boysen 2006). The Act is responsible for both disaster risk and vulnerability reduction and disaster recovery and rehabilitation (Vermaak & van Niekerk 2004).

The policy of the Act aims to reduce the risk of and severity of disasters, and requires all government role players to increase their efforts to reduce risks. Section 47 states the expectation for municipal disaster management centres:

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***Section 47***

(1) A municipal disaster management centre, to the extent that it has the capacity, must give guidance to organs of state, the private sector, non-governmental organisations, communities and individuals in the municipal area to assess and prevent or reduce the risk of disasters, including:

- *(a)* ways and means of:
  - (i) determining levels of risk;
  - (ii) assessing the vulnerability of communities and households to disasters that may occur;
  - (iii) increasing the capacity of communities and households to minimize the risk an impact of disasters that may occur and;
  - (iv) monitoring the likelihood of, and the state of alertness to disasters that may occur;
- *(b)* the development and implementation of appropriate prevention and mitigation methodologies;
- (c) the integration of prevention and mitigation methodologies with development plans, programmes and initiatives; and
- *(d)* the management of high-risk developments.

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> (2) A municipal disaster management centre must promote formal and informal initiatives that encourage risk-avoidance behavior by organs of state, the private sector, non-governmental organisations, communities, households and individuals in the municipal area.

The Act does not limit the definition of disaster to large-scale catastrophic events, but acknowledges that disasters can occur on many different scales. It recognizes that in poor communities, small re-occurring disasters can undermine development, both for the community as well as for the individual (DiMP 2008). According to the Act there should be a special focus on the populations that are most vulnerable due to poverty and lack of resources (Viljoen & Boysen 2006). Furthermore, the Act recognizes that all levels of the society, government, as well as the private sector, can create opportunities, and through joined efforts contribute to reduce disaster losses in South Africa. However, it also recognizes the essential of uniformity needed to accomplish such a difficult task where many different stakeholders and role players involved.

### *The National Disaster Management Framework*
The National Disaster Management Framework (NDMF) guides the implementation of the Act. The NDMF emphasises 'measures that reduce the vulnerability of disaster-prone areas, communities and households'. Furthermore, the NDMF stresses the importance of community participation, which is explained in Section 1.3.2.2:

> "All disaster risk reduction planning, the development of projects and programmes add the allocation if responsibilities must be founded on the needs and priorities of communities. Disaster risk reduction is a community-driven process. Municipalities must involve local communities in the development of disaster risk profiles; facilitate understanding of the concepts and values of disaster risk reduction in communities; prioritise projects aimed at risk reduction in their IDP's (Integrated Development Plans); and facilitate community participation in training, preparedness planning and awareness programs."

### *Isidima: The Western Cape Sustainable Human Settlements Strategy*
Isidima means 'enabling dignified communities' and was launched in 2007 and is a long-term strategy to better integrate poor people within the city not leaving them on the periphery of urban centres, far from employment opportunities and dependant on costly transportation. The policy highlights 'the shift from housing construction to sustainable human settlements; the shift to sustainable resource use; and the shift to real empowerment' (DiMP 2008).

### *The City of Cape Town Informal Settlements Master Plan*
The Informal Settlements Master Plan was also approved in 2007 and is focusing on providing essential services and the progressive upgrade of the more than 220 informal settlements in Cape Town. It is also addressing the possible

relocation of residents from high risk sites, due to the sites being unsuitable for developing, or unsafe, and acquisition of additional land for housing (DiMP 2008).

# 4 Context of Imizamo Yethu

## 4.1 Location

The informal settlement of Imizamo Yethu is situated within the Western Province of South Africa, in the coastal suburb of Hout Bay. Imizamo Yethu is located north east of the harbour, parallel to a section of Main Road (M63), the principle route from Hout Bay to the next suburb of Constantia. The location is unique within the South African context, as the settlement is located in the heart of a wealthy suburb and was zoned for 'whites-only' during the apartheid era. *Figure 4* shows Imizamo Yethu's location within Hout Bay and South Africa.
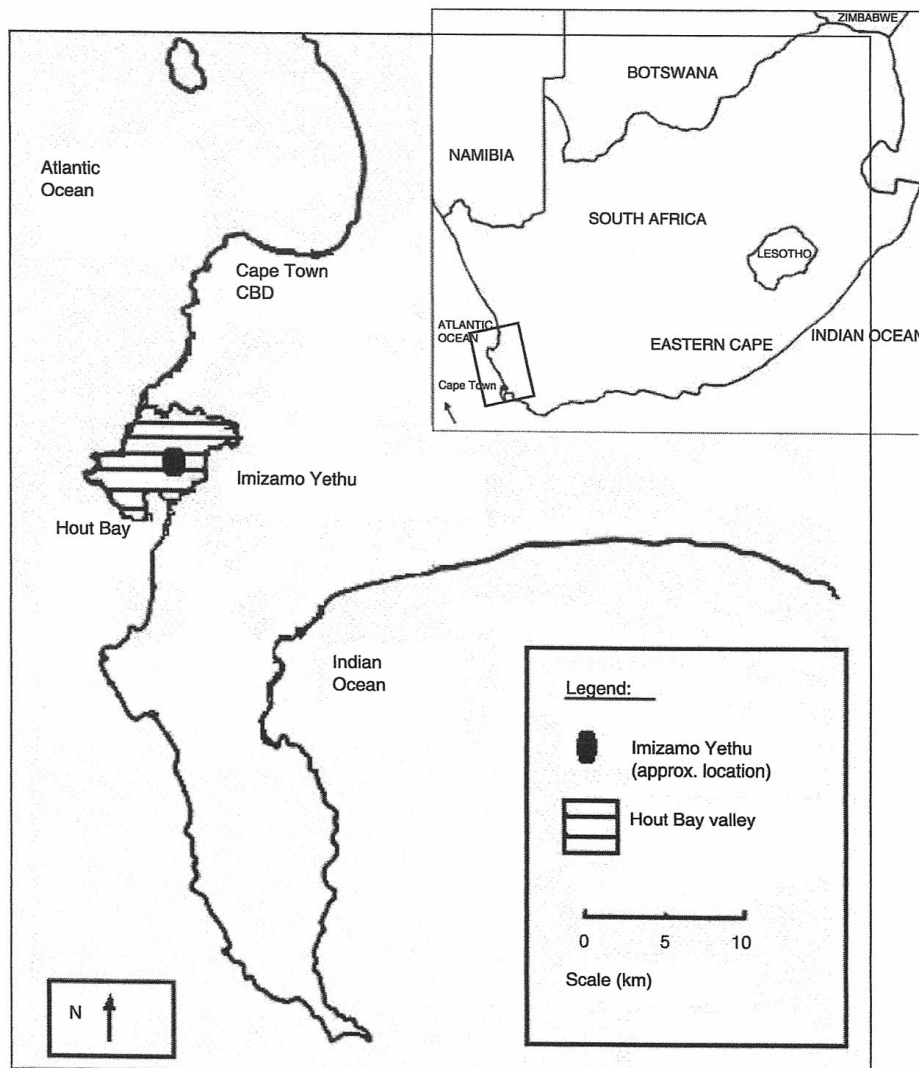


**Figure 4** *Imizamo Yethu's location in Hout Bay and South Africa (Harte et al 2009).*

On either side of the settlement there is a "natural buffer" or zone of "integration" between the settlement and the high-income residential areas of Penzance (east side) and Hughondon (west side). The local police and fire stations are positioned at the entrance to Imizamo Yethu on the traffic roundabout or 'circle'. Appendix A provides a detailed map of the settlement and its surroundings and Appendix B offers an overview of the community growth

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from 1994 - 2010. Visible from the aerial photograph the settlement is split between 4 distinct land use types. The Formal (planned housing) areas, the informal (unplanned housing) area, the green "buffer" zones and the protected area reserved for future development.


## 4.2 History and development

Hout Bay became a very popular residential area among the white population in the 1960's and at the same time the demand for black labour increased. The apartheid policies were in conflict with the demand for labour in Hout Bay (Kapopo et al 2008), and since the lack of accommodation limited the ability to work in the area, and no permission of formal housing was giving the result was squatting. Black and coloured communities started to develop around the harbour, one of these being Princess Bush, a Black African settlement (Smith 2004). As the residential side of Hout Bay grew the demand for black labour increased and the migration from the Eastern Cape picked up. Due to the change in the political climate in South Africa in the 1980's the influx control was not as strict as previously[6], and Black African could enter the Hout Bay area without much resistance from the government (Jager et al 2004).

With the government not knowing what to do with the increasing influx in the area there was no strategy developed to handle the population growth. The squatters made use of the change of politics and put pressure on the government to find them land in the area. At the same time the formal residents of Hout Bay put pressure on the local authorities to move the squatters from their area, and find them land outside of Hout Bay. In 1990 Princess Bush suffered from a severe fire and due to the history of fires, floods and lack of infrastructure in the area the local authorities were forced to take action (Smith 2004).

After decades of illegal squatting, a group of informal settlers was promised a piece of land for residential purpose. This was the establishment of Imizamo Yethu, translating into 'through our collective struggle'. This was in the beginning of 1991 and a new era had begun in South Africa, optimists saw this as an opportunity for different communities to live side by side, instead of segregation as in apartheid times, although many white Hout Bay residents opposed the decision (Monaco 2008). The Western Cape Regional Services Council designated 18 ha of land, by the Hout Bay Forestry Station, available for residential use and an additional 16 ha for community facilities (Kapopo et al 2008). Originally the plan was to service 594 sites[7], each site estimated to house around 5 people. Imizamo Yethu was initially founded as a planned settlement, with roads, water, sanitation, and waste management system. The development was divided into 4 parts and all roads were supposed to be tarred and each site would be equipped with a flush toilet (Kapopo et al 2008). From the establishment of Imizamo Yethu the settlement grew rapidly, mostly by immigrants from the Eastern Cape (Harte et al 2009) but also from other parts of

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[6] Removal of home less had become a highly sensitive issue at the time, leading to a relaxation of influx. Pass laws limited movement by the black and coloured people during the apartheid regime (Wilson 2009).

[7] See Appendix C for planned layout of the 594 sites.

the African continent. The large influx of people into Imizamo Yethu put pressure on the limited infrastructure and resources of the local municipality. The squatter population had already grown beyond the capacity of the allocated land in May 1992 (Munnik 2008). The rapid growth did not only result in an unplanned settlement but also prevented services and amenities from being established (Harte et al 2009). It also caused a rising tension with the local government leaders and the neighbouring residents of Hout Bay.

## 4.3 Housing and infrastructure

The majority of the residents live in self-constructed dwellings; built out of wood, steel sheets and plastic. Water and sanitation facilities is shared in certain parts of the settlement and certain areas look more like a UN refugee camp than part of a long-term urban housing situation. Housing size and shape varies but there is a clear distinction between the formal housing and the "informal dwellings". This difference is clearly reflected in the building materials used, density and the infrastructure surrounding the shelter. No legal building codes are applied to the construction of a temporary dwelling and long-term investment in these structures is seen as insecure. The majority of the formal houses are the result of the Niall Mellon Townships Initiative, which built around 600 houses between 2002 and 2005. These houses have legal title deeds, and are linked up to the waste and water management system.

The density of the settlement is determined by the need for space. The majority of the new residents have been forced to settle on the steep upper slopes with limited access and services available. This growth is highly problematic, and has put immense pressure on the existing community's attempt to engage in a development upgrade process. The tarred road network within the settlement is restricted to the formal housing sector. Access to the informal housing on the steep slope is largely restricted, with no tarred roads creating difficult vehicle access and resulting in limited accessibility for local residents other than by foot.

## 4.4 Population and culture

The majority of Imizamo Yethu's residents are Xhosa from the Eastern Cape, but Imizamo Yethu is also home to immigrants from Zimbabwe, Angola, Nigeria, Zaire, Zambia, Malawi and Somalia. Imizamo Yethu was home to approximately 5000 people in 1997 (Munnik et al 2008) and according to the National Census 8062 people in 2001 (Smith 2004). In 2002 the City of Cape Town estimated that around 13 000 people was living in the area (City of Cape Town 2002) and in 2007 the corresponding figure was 18 000 people. In 2008 civic groups estimated that Imizamo Yethu accommodated around 30 000 people (Kapopo et al 2008).

Like in many other parts of South Africa Imizamo Yethu is facing a high unemployment rate. According to the National Census of 2001 about 44% of the working age population is unemployed. The National Census of 2001 also stated that a vast majority of the residents of Imizamo Yethu had a monthly income of R1 600 or less, sometimes supporting five to six people. Pensioner, child and

disability grants from the government are usually R200 – R250 per week (Cape Gateway 2010), and are often an important source of income for many households (Munnik et al 2008, Jager et al 2008). Many residents also rely on their family, next of kin and social network to support their livelihood. As previously, urbanisation has become a household strategy for many of the poor from rural areas, and a number of the residents in Imizamo Yethu, especially from the Eastern Cape, have settled in the community on a temporary base.

The social network in Imizamo Yethu is complex. The Xhosa culture is very strong in the community and is believed to be one the reasons why and how people have coped in previous fire disasters (Harte et al 2009; Smith 2004). In Xhosa culture you're expected to help family members in need, no matter of financial or material limitations. This is strongly related to the cultural belief that one's ancestors will be angered if you do not support your family and next of kin in hardship (Harte et al 2009).

## 4.5 Hazards

Imizamo Yethu is facing a range of hazards. During the CRA's conducted in 2008 (Jager et al 2008; Kapopo et al 2008; Munnik et al 2008), the residents named a range of hazards they thought were threatening to them. The hazards extended from fires, floods, health, and sanitation to crime, traffic, unemployment and drinking problems. Lack of service deliveries was a topic mentioned over and over again. Water and sanitation are key health indicators and the condition of the environment surrounding the houses feature high levels of pollution and uncontrolled waste, which filters into the local water system. Extremely high levels of e-coli has been reported from the adjacent Disa River and the city of Cape Town stated that it poses a potential threat to human and animal health (City of Cape Town 2009).

In 20 years of its existence, the settlement has become infamous for its fires[8]. One of the worst fires took place in February 2004, leaving approximately 5 000 people homeless. The fire of 2004 brought focus back to Imizamo Yethu and in May 2004 the provincial government of Western Cape addressed the need for upgrading of informal housing (Monaco, 2008). In a press release in May 2004 the previous mayor, Nomaindia Mfeketo stated following (City of Cape Town 2004):

> *"In the end, the whole of Hout Bay will benefit from the upgrading of Imizamo Yethu. On a micro scale this is the basic lesson the people of Hout Bay must learn that for as long as the people of Imizamo Yethu are homeless and hurting there will be no peace and stability in that area. The same applies to the whole of South Africa that as long as the poor are homeless and hurting the country will experience no peace and stability."*

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[8] Appendix D lists the reported fire events since 2002.

## 4.6 Proposed upgrade

The steps to address the over crowding in Imizamo Yethu have been an ongoing process and a number of planning options have being evaluated by the city of Cape Town. However, numerous court orders have delayed the upgrade of the area and the development of the remaining 16 ha of land (City of Cape Town 2006). The city of Cape Town started to plan an upgrade of the area in 2001, and the ANC Executive Committee recognized the public health risks associated with overcrowding back in 2002. In 2002 the City of Cape Town put together a group of engineers and urban planning experts in order to prepare a devolvement proposal, creating a 'best fit', for the area.

One of the challenges for the proposed upgrade has been the limited amount of land available. The former mayor of Cape Town, Helen Zille, stated back in 2007 that Imizamo Yethu can only accommodate between 1300 and absolutely a maximum of 2000 units of housing[9]. At the same time, she estimated that around 18 000 people lived in the settlement and that the demand for housing was approximately 6 000 units, meaning alternative sites for 4 000 units would have to be found (Zille 2007). A further obstacle to the upgrade of the area has been the conflicting agendas between the residents of Imizamo Yethu, and between the community and the Residents Association of Hout Bay (RAHB) and Hout Bay Ratepayers Association (HBRA) (Kapopo et al 2008).

Imizamo Yethu has also been a political conflict between the DA and the ANC. The previous mayor of Cape Town, Helen Zille (DA), has cited that the ANC should have acted earlier and that the ANC has made promises to the people of Imizamo Yethu that has not been realistic and therefore causing a lot of frustration and distrust of the government's intentions (Kapopo et al 2008). The ANC came in to power in 1994 and in 1996 the new constitution of South Africa, Act 108 of 1996, was adopted. Besides giving all the citizens of South Africa equal rights it also states in Section 26:1-2 that "everyone has the right to have access to adequate housing. The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realization of this right." On a national level the backlog of housing has gone up from 1.5 million in 1994 to 2.1 million houses in 2010. 2.3 million houses have been built since 1994 but still a quarter of the population is lacking adequate shelter (The Africa Report 2010). The backlog in the Western Cape is 300 000 – 400 000[10] houses (City of Cape Town 2008)

The beginning of 2010 was a crucial time for Imizamo Yethu and even though all the involved parties acknowledged the urgent need for an upgrade the plans nearly derailed. One of the councilors said that the saying 'marry in haste, repent at leisure' should be kept in mind during the often 'heated exchanges' trying to incorporate recommendations and objections. One of the changes in the final

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[9] This is based on South Africa's standard for low-cost housing model, 40 units per hectare (Zille 2007).

[10] 300 000 people are registered on the housing list but an additional 100 000 is expected to not have registered (City of Cape Town 2008).

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recommendations was to not build a wall to the adjacent Hughenden Estate and the Penzance Estate (Smook 2010).

In the end of 2010, after numerous court orders and revisions, the city of Cape Town propositioned a plan for Imizamo Yethu that was agreed upon by most of the stakeholders, but it still requires a final approval to be put into action.

# 5 Challenges to Disaster Risk Reduction in Imizamo Yethu

## 5.1 Introduction
This chapter presents the findings from the interviews conducted in September and October 2010 with the involved stakeholders; the chairman of SANCO, the community development worker, the community tour guide, the health centre of IY, the fire department of Hout Bay, the NGO Envirochild, the DRMC of the City of Cape Town and one of the town planners of the city of Cape Town. The stakeholders and the organisations they represent are presented more thoroughly in Appendix F.

To introduce the stakeholders perspective an analogy is used to introduce the key concepts needed to contextualise the current situation. Thereafter the hazards and the challenges to disaster risk reduction from the stakeholders' perspective are presented.

## 5.2 Analogy
The challenges to risk reduction in Imizamo Yethu are complex, so to ensure clarity, this introduction aims to give a brief description of the situation and how it came to be. It is important to know that the headings used to write up the findings were developed through the analysis of the interview data. In this way, the findings section is clearly linked to the analysis and discussion chapter, through grounded theory coding. These codes were introduces and explained in the methodology section (see pp 16-20). The headings were adopted from the analysis as a more manageable way to present the findings.

As an analogy, *Figure 5* illustrates how the growing community hits wall (challenges) after wall in attempts to address its situation and eventually becomes boxed in and unable to reduce its risk due to; i) lack of land for development, ii) politics in terms of conflicting agendas iii) institutional capacity and lack of resources to achieve set goals, and last but not least, iv) community (risk) behaviour. This analogy sets the main themes for the findings from the interviews and the following analysis and discussion.
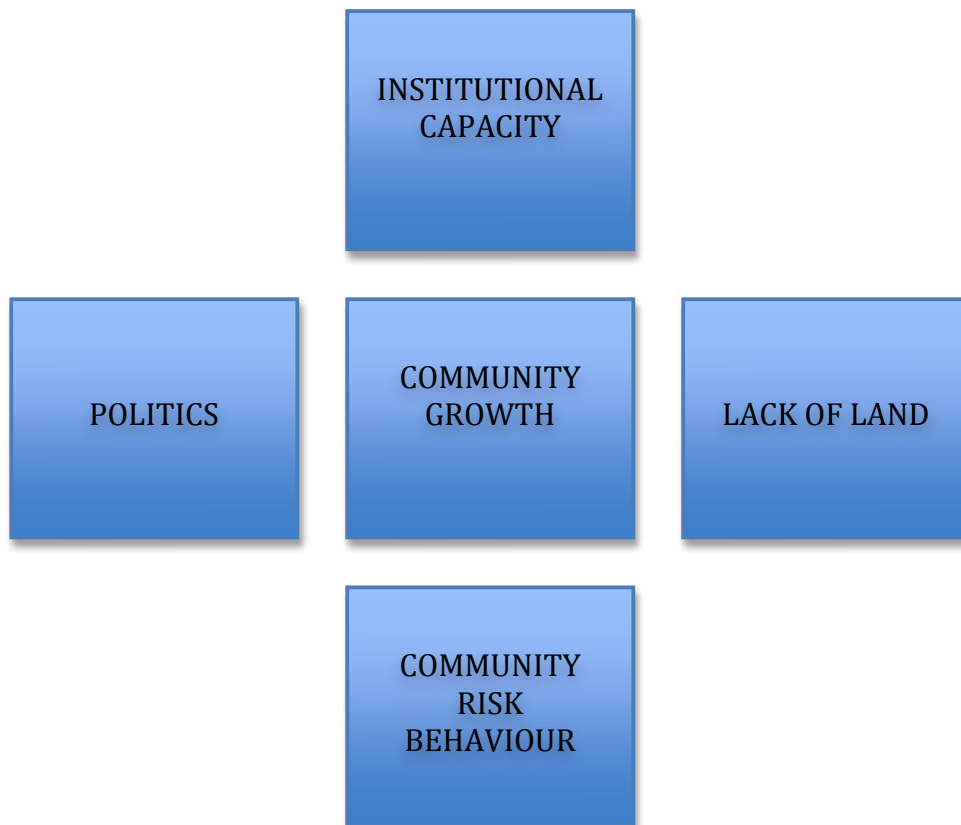
*Figure 5* *Description of the challenges defining the risk context in Imizamo Yethu.*

After the establishment of the settlement it didn't take long until the population growth reached the site's capacity. What was initially a planned settlement soon became a settlement with no structure or organisation put in place. During the 1990's there was a number of objections (Sentinel News 1990; Sentinel News 1992; Sentinel News 1993) from the neighbours concerning the settlement but there was no political initiatives put in place to address the rapid growth of the population and its needs. The site's limit was already reached in 1992 but it was not until in the beginning of the new millennium that the issue was properly addressed through a proposed upgrade of the area[11]. Conflicting agendas within the community, objections from civic organisations in Hout Bay and conflicts between the ANC-led province and DA-led municipality resulted in what can only be described as an inert or stagnant situation.

Process or no process, the lack of land in the settlement relative to the needs of a constantly growing population and the lack of alternative solutions is still one of the biggest challenges. The NGO Envirochild worked with the City of Cape Town during 2007 in an attempt to develop an eco-village on the 16 ha of land initially earmarked for community facilities, but which had since been prevented from any development through a court order. In the same process, the NGO proposed a number of different sites around the city, owned by the city, as possible development sites for those people that could not be accommodated in Imizamo

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[11] However, it should be noted that South Africa went through a lot of changes through the transition into democracy in 1994, which involved a number of challenges and tasks to be addressed.

Yethu. However, according to the NGO, all of these suggestions were turned down without any further explanation[12].

Meeting the needs of a growing population is also a question about institutional capacity. In terms of disaster risk reduction, the ambitious legislation and policy frameworks of South Africa create a solid foundation but implementation requires resources, in both financial and human capital. The Act emphasises that risk reduction initiatives shall be encouraged by the municipal disaster management to be carried out through the different departments of the state as well as private actors, NGO's, communities, households and individuals. In terms of resources, service deliveries and provision of houses are viewed as the major challenges to meet the needs of a growing population.

Disaster risk reduction is not only about authorities carrying out their mandates. Without an understanding and acceptance from the residents, risk reduction initiatives can easily be undermined. In addition to battling over a lack of land, Imizamo Yethu also struggles with the fact that human actions and behaviour put people and the environment at risk daily. Previous research (de Jager et al 2008; Kapopo et al 2008; Munnik et al 2008; Smith 2004) has shown that there is a lack of ownership of responsibility among the residents over the risks facing both individuals and the community as a whole. This can both be a result of natural ignorance and a lack of responsibility in learning how to deal with the risks.

### 5.3 Hazards from the stakeholders' perspectives

In order to grasp the complexity of the situation it is important to understand that the different hazards cannot be seen as separate, they may overlap each other or be interlinked, and they may cause knock on effects. The different hazards can be viewed as a game of Jenga – it is difficult (if not impossible) to pick out one piece without considering or affecting the other pieces. The hazards are often associated with the identified challenges to disaster risk reduction and will be discussed more thoroughly in the following chapters. This is an introduction to some of the hazards from the stakeholder's perspectives to give the reader an understanding of the conditions in Imizamo Yethu and how risks can spread over a number of different disciplines. It also aims to illustrate how one hazard and its consequences can increase the vulnerability of an individual or the community through different knock on effects.

*Figure 6* is an attempt to illustrate how the different hazards can be interrelated and how they might be exacerbated by outside conditions. The figure is based on the input from the different stakeholders during the interviews.

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[12] Interview with the founder of Envirochild, Dr. Johnny Anderton 2010-09-22
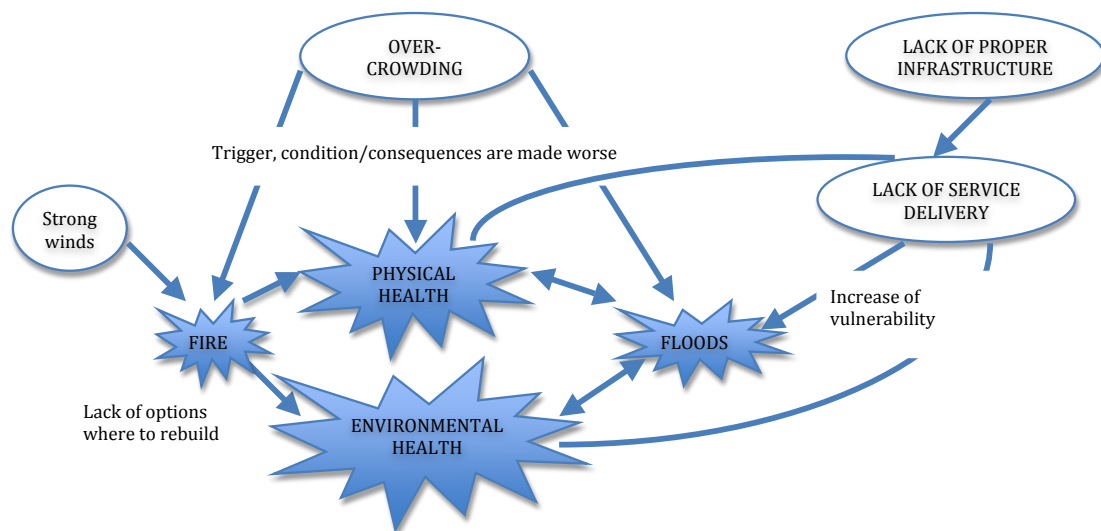
***Figure 6*** *Interrelations between hazards and how outside conditions can be triggers, increasing vulnerability or making consequences worse.*

All the stakeholders considered the overcrowding in IY as a core problem and a contributing factor to the different hazards in IY. The chairman of SANCO viewed the fires and health problems as the major hazards, both exacerbated by the density. He also discussed the community's struggle with crimes and high unemployment and concluded that the lack of services made it difficult to improve the situation. One of his major concerns was the lack of toilets in the area. The town planner also concluded that the density combined with lack of service deliveries laid the foundation for the hazardous conditions in IY.

The DRMC saw health as the major hazard in IY, such as diseases (TB, pneumonia and HIV) slaughter of animals and the high levels of e-coli, associated in their opinion with toilets not being used. They also added that the situation was made worse by the lack of service deliveries and the limited accessibility within the community. The fire department also considered health as the major problem, triggered by the density, lack of toilets and limited accessibility for service deliveries. However, both the DRMC and the fire department considered fires and their consequences, aggravated by the limited access for emergency vehicles, as significant hazards but health was the major concern from their perspectives.

The health centre though, considered fires and their consequences as the prime risk. However, the over crowding was also considered to be a major problem and seasonal diseases such as TB, flu and pneumonia were said to be reoccurring problems. Even though the community's health status had improved over the years according to the health centre, it was still considered a hazard due to the limited access to toilets, the disposal of the existing toilets and the waste management in IY. The spread of pollutions as a result of floods was also mentioned as a hazard for the community.

From the community guide's perspective, fires and diseases, such as TB and HIV, were the major hazards and he considered the lack of land and the rapid community growth combined with limited service deliveries as the major problems. The community development worker discussed the problems with the

density, and the impacts of fires due to the density. Health issues, and especially TB, were another of his concerns. From his perspective the service deliveries had improved over the years but accessibility and overcrowding were still major problems and he saw a big need of upgrade and improvements of the roads in the community.

The NGO Envirochild viewed the reoccurring fires as the biggest problem, but was also very concerned about the risks for a cholera outbreak due to the poor waste management and the open sewerage system in the community. Additionally, the rapid urbanisation of the Cape Town metropolitan was discussed and how the overcrowding combined with poor service deliveries posed multiple risks for the residents. The NGO also viewed xenophobia in the community as a considerable hazard.

A consensus of all stakeholders interviewed clearly points to health and fire hazards being the major problems facing the community. Health hazards are wide-ranging, from environmental to physical health hazards. The problem with overcrowding in Imizamo Yethu is well known and all the stakeholders stated that this is one of the main challenges for the community. Overcrowding is a hazard in itself but can also trigger fires, increased health hazards due to cramped living conditions, and can limit the availability of proper sewerage systems, thereby enhancing the consequences of flooding. Most of the stakeholders also discussed that the local weather, including regular, strong winds make the consequences of a fire drastically worse. Fires in combination with overcrowding were especially discussed among the community residents, and how the density could work as a trigger but that the result of a fire may also put extra pressure on the health conditions. Even though people had started to settle along the hillside before the significant 2004 fire, the situation got worse after the event. An additional number of people living in an area with limited access to service deliveries, especially toilets, due to the inaccessibility of the area, put an extra pressure on the environmental health conditions in the community. Imizamo Yethu is unique from a risk perspective due to its location on the mountain slope, and in the fire department's opinion, the people of Imizamo Yethu are facing a higher risk compared to any other informal settlements they have been in contact with. They also added that the water pressure is very low in the community, adding an other dimension to the risk picture.

The overcrowding combined with a lack of infrastructure limits the possibilities to carry out service deliveries in the community, and thereby enhancing the hazardous conditions. The health centre pointed out that it's not only about providing but also maintaining. From their experiences it has been a lack of coordination between the city, private actors and the community, in terms of disposing toilets and collecting waste. Rats have been a major problem previously but the situation has improved according to the health centre, which is not treating as many rat bites as before. Lack of waste collecting is also causing blocked drainage during heavy rains and floods.

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Other hazards being discussed from a health perspective was TB, pneumonia, HIV and the high levels of e-coli in the adjacent Disa River. Even though some of the stakeholders mentioned the risk of cholera due to the grey water and inadequate sewerage system, this was not a major concern to the health centre since water samples are being conducted weekly. However, the health centre, as well as other stakeholders, was concerned about the pollution of the Disa River and the storm water, especially after heavy rains or floods. The community residents were concerned about diarrhoea among children, a situation that has improved over the years according to the health centre due to awareness campaigns to bring in children as soon as possible in case of illness.

The chairman of SANCO discussed how floods, or heavy rains for that matter, could result in a number of different outcomes, illustrated in *Figure 7*.
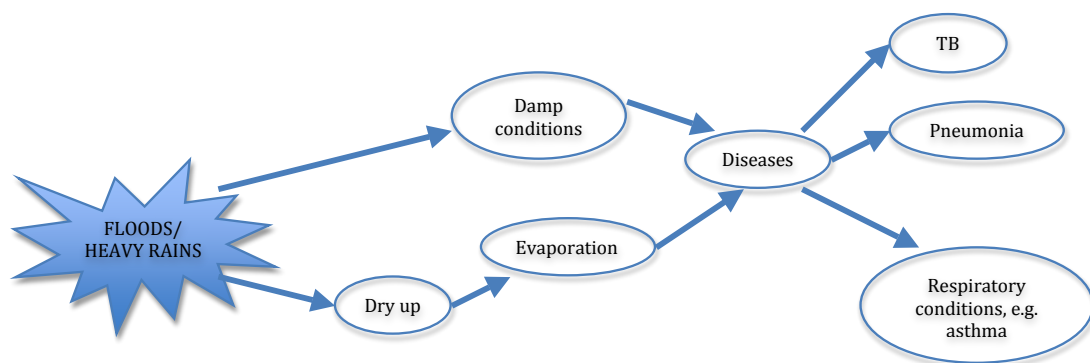


**Figure 7** *Potential outcomes from a flood*

Damp conditions can be a cause to TB or pneumonia but the density can enhance the spread to other people. Diseases such as TB, hepatitis and pneumonia are common as well as seasonal flu according to the health centre and these diseases are not only health hazard but can be a death sentence for a HIV positive. The community residents and the health centre discussed that the rate of HIV is relatively high, 30% of all the pregnant women are HIV positive and 70% of the TB patients are HIV positive, according to the health centre.

In short, the chairman of SANCO described the situation in IY as 'sitting on a time bomb'.

## 5.4 Community growth

There are no official numbers on how many people actually live in Imizamo Yethu (IY). The last census, which was conducted in 2001, stated IY was home to 8 062 people, a number that was rejected by all the stakeholders. According to the Human Settlement Service Department, it was estimated that around 16 -18 000 people live in IY. This number was based on the fact that that around 500 houses were built under the Niall Mellon initiative but around 3 000 families were still lacking a house in 2007. Those 3 500 families are expected to have grown to around 4 000 families today, with an average of 4 family members. The community development worker, Kenny Tokwae, was of the same opinion, believing Imizamo Yethu consist of around 3 800 households. The chairman of SANCO said he honestly don't know how many might live in Imizamo Yethu but

the vice-chairman estimated it to be around 35 000 people. The fire department and the health centre estimated the population to be around 36 000. The health centre uses 36 000 people for their budgeting and the number was based on the fact that around 5 000 people visit the clinic each month and around 1 000 ARV patients are medicated each month. Additionally, the clinic's personnel meet around 500 families each month for family planning.

### Over crowding

All the stakeholders agreed that the over crowding of the settlement causes a wide range of problems and risks, putting an extra pressure on the available resources, but as the chairman of SANCO pointed out, it is also due to a lack of resources. The DRMC considered health as the major hazard in Imizamo Yethu, owing to both rural culture and the lack of space.

Not only is there a challenge in terms of housing overcrowding, but also schools and crèches. According to Envirochild, the school in Imizamo Yethu is designed for 400 pupils but today accommodates 1000+ students. The lack of space for children was something the community residents highlighted, as well as the fire department and the health centre. The interviewed IY residents expressed the need for a children centre, 'where kids can spend time after school'. The limited space often force the kids to play on the streets[13], amongst dumped waste or close to polluted water. The health centre added that children are most at risk due to lifestyle and overcrowding. Sexual abuse, often by a family or extended family member, is common among children between the ages of 5-8 years old; 1-2 cases are reported weekly.

The overcrowding also creates vulnerability in terms of location in the settlement, the stakeholders agreed that the dwellings are of poorer quality farther up the hill compared to the formal part of the area, thus those residents are more vulnerable due to limited accessibility – lack of water, roads, sanitation and lighting.

### Migration and immigration

A majority of the residents in Imizamo Yethu have their roots in the Eastern Cape. All the stakeholders were of the opinion that people migrate to Cape Town for better employment opportunities, education and service delivery. The health centre also added that it is relatively common that people come for medical reasons, e.g. treatment of TB or pregnancy. Additionally, there are not a lot of elderly in Imizamo Yethu, most return to the Eastern Cape, and children that are born in IY are often sent back to the Eastern Cape until it is time for them to start school, according to the health centre. According to the fire department, people also move to IY just to get on the housing list, and then move back to the Eastern Cape whilst waiting in the queue for a house.

Without official statistics it is impossible to know to what extent, but there are also significant numbers of immigrants from Malawi, Zimbabwe, Namibia,

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[13] Death accidents have been reported according to the chairman of SANCO.

Angola and Somalia. The health centre discussed how the illegal immigrants are often marginalized; they tend to lack financial resources themselves and are not eligible for financial help from the government. It is also difficult to help them from a medical perspective since treatment requires a valid ID. According to the health centre, the rate of HIV is high among the illegal immigrants. The chairman of SANCO also talked about how the government, in his opinion, doesn't provide any services for foreign nationals. He added that, in general, people accept to live side by side, but the lack of land creates tension and fights over land and jobs. The fire department had also noted friction between the residents, stating some fires were a result of the tension. From the fire department's reflections, Zimbabweans were often subject to violence[14] and Somalians got their businesses damaged. In the fire departments' experience, the language barrier was often an obstacle in terms of prevention measures. Envirochild also pointed out the hazards associated with violence and xenophobia.

The chairman of SANCO was of the opinion that South Africa should work together with their neighbouring countries in order to address the problems that makes people immigrate; 'South Africa could manage the chaos that was the result of apartheid, we should be able to be a role model for other African countries. Now, South Africa is supporting what's going on in Zimbabwe[15]'. He also added that he thought development and job creation in the Eastern Cape was important, to take pressure of cities like Cape Town and Johannesburg.

### Population dynamics

The uncontrolled population growth poses a distinct challenge for risk reduction. The community development worker pointed out that influx control is difficult and described how there previously was no control on where people built their 'shacks'; it was 'chaos'. But now, according to the community development worker, the community work together with the city of Cape Town, and it has agreed that no more structures can be built, and the community supports the demolision of any new constructions. The chairman of SANCO also stated that influx control was a difficult issue, and said, "if we had influx control, who's gonna control it? SANCO doesn't have the authority to do it". But he was of a different opinion when it came to the construction of new dwellings. He said that reports on new shacks are sent into the city but that nothing happens, and in his opinion, an immediate response from the city is required to remove people in order to control the influx. He added that if shacks are being built and people

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[14] In 2008 South Africa was gripped by xenophobic attacks, starting in Johannesburg and spreading along the country. Foreigners were accused of steeling jobs from South Africans, and especially Zimbabweans especially, were victims in these attacks, resulting in 68 casualties. For more reading please see http://www.gcro.ac.za/news/xenophobia-reports-released

[15] This opinion has been expressed by Helen Zille (Cape Times 2011-01-20) and in Peter Godwin's recently published *The Fear: the Last Days of Robert Mugabe.* In an interview in *The Big Issue* (issue 174 no. 1 2011) Godwin expressed that South Africa could be a part of the solution if the political will was there. The core problem is that ANC has expressed that they will continue to support their fellow liberation fighters in southern Africa, Angola, Mozambique, Zimbabwe, Namibia and that's what causing the stagnation of negotiations between Robert Mugabe's party and the opposition according to the critiques.

move in over the weekend nothing can be done by the authorities[16]. For example, families construct the shacks on a Friday afternoon and move in by Saturday and thereby bypass the 24-hour legislation since there is no response from the city over the weekend according to the chairman.

Influx control was discussed among most of the stakeholders and it was widely mentioned that influx control and removal of people is an incredibly sensitive subject due to South Africa's history of pass laws and forced removal during the apartheid regime[17].

## 5.5 Lack of land

There was a consensus among all stakeholders that lack of land is one of the main challenges, both in term of risk reduction and in terms of the proposed upgrade. The chairman of SANCO also added that people in general don't have money to buy land, and are therefore restricted in how they can alter their situation. He pointed out that the 2004 fire changed the settlement dramatically. The city couldn't find alternative sites[18] for the affected people, the frustration grew; they felt they were being ignored by the city, by not getting land or services. The community leaders felt that they couldn't communicate with the people either, and as a result the affected people re-located up the hill, which became Dontseyake (meaning un-ruled area).

### *Lack of land use planning*

Another mutual agreement among the stakeholders was the challenges associated with the lack of proper infrastructure and the accessibility within the community. The DRMC pointed out that the site is not properly planned, or the initially *planned* settlement turned out to be completely *unplanned*, and the lack of services combined with the high influx pose multiple risks. The community residents discussed the problems of accessibility due to the density and the lack of infrastructures. Both the fire department and the DRMC pointed out that not only is the lack of roads, difficult terrain and the mountain slope a challenge, but also the fact that roads gets narrowed down or blocked due to constructions of new dwellings. The fire department expressed that they find the conditions especially challenging at night due to a lack of lighting. Combined with this, the limited accessibility caused by the density, often forces them to carry heavy equipment long distances through narrow alleyways. Even though they're located next to the settlement, it can take up to 30 minutes until they can arrive at the top of the settlement; as one of the fire fighters put it: 'doesn't matter how much we practice, access is still the biggest challenge'. The access roads to Hout

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[16] Due to the high cost and due process involved in removing illegal occupants of and the Department of Housing has strives to stop construction before occupation of the dwelling has occurred. Once the dwelling has been occupied its occupant cannot be removed without a court trial. It's a complicated legal situation and the city tries to avoid any policies associated with the apartheid regime. For more information on this matter see "Unlawful occupation of land" (Cape Gateway 2003).

[17] For more information and an overview of South Africa's history see
http://www.info.gov.za/aboutsa/history.htm

[18] Which is still and ongoing process according to the chairman of SANCO

Bay are along single-lane, windy roads and back up is expected to take approximately a further 20 minutes.

Another serious prohibitive challenge for the Fire Department is the so-called 'spaghetti wires': illegal electrical connections, channelled to the dwellings from the main pylons, which also block access. Horrifyingly the fire fighters are literally stuck between a rock and a hard place; one of the fire fighters explained, 'we get stoned if we tear down the spaghetti wires to reach a fire, but we also get stoned if we don't reach a fire on time'. Electricity is a lucrative market according to the DRMC, and in their and the fire department's experience, it is difficult to manage the issue of illegal connections.

The DRMC pointed out that the area needs a development plan – again, create structure out of the unstructured settlement. A first step was to provide a number of sites with legal electricity, and a second step would be to improve the piping and maintenance of the existing infrastructure. They also added that providing infrastructure for the whole community is crucial to reduce risks. However, the DRMC also added that these additional steps would require people to move, and would most likely create a conflict situation.

From the community residents' perspective development is the key to solving the issues, but they insist, land is needed to accomplish it, 'land is the main thing – we need proper development, we need space for housing, facilities and public space'. The community development worker of Imizamo Yethu, Kenny Tokwae, stated that the roads needs to be fixed, and even though streetlights have been provided there was, still a need for 'more'. He was also of the opinion that the 16 ha should be used as a temporary site while parts of the settlement were being upgraded, adding that 150 families were temporarily re-located when a road was being constructed in the western part of IY.

## 5.6 Politics – the proposed upgrade

The upgrade of Imizamo Yethu has been 'on-going' for over a decade. This programme is supposed to be the state's comprehensive solution to the IY 'problem'. However, in reality, the process exemplifies the stagnation of the entire situation. Conflicting agendas, bureaucracy, disagreements and lack of accountability have meant little has been accomplished.

The planning officer from the city of Cape Town discussed how an upgrade plan require public acceptance, as well as acceptance from all the stakeholders to succeed. He explained how the community had been a vital part in the design of the current upgrade plan and how the city had been conducting a number of meetings in Imizamo Yethu to discuss the plan with the community members. When the interview with the planning officer was conducted, the proposed upgrade plan had gained approval from two ministers but it would still have to go to the High Court for a final 'go ahead' to clarify any objections.

From the planning officers' perspective, it had been a long journey; change in city government, public participation processes, environmental impact study and

disagreements on the final plan by stakeholders, have all had significant impact. The community residents are divided, as some residents want all the land to be used for housing, while others want mixed-use development to include community facilities such as school, community centres and taxi rank. Additionally, there have been objections from neighbours, conservation groups and disagreement between community leaders. According to the planning officer the community needs to negotiate and agree internally on space for housing, facilities and also consider space for natural growth and expansion to improve their situation.

The chairman of SANCO stated that development couldn't be done without working *with* the community, adding that the city has been carrying out projects without considering the community's concerns and this project hasn't been a success. He also said that an upgrade must include community facilities, adding that poor people are struggling to afford transportation, e.g. for their kids to go to school, and Imizamo Yethu must therefore be able to offer those facilities needed for a community its size. Today the community hall is the only public facility and it's not enough according to the chairman.

The community development worker supported focus on houses for the upgrade. During the interview he said the community lacks a unified leadership structure that could negotiate and officially represent all the people. In the past there's been, in his opinion, a problem with "weak leadership" representing the community's needs. Currently, the community decision-making process involves a leadership forum including two members from the nine civic structures and committees within Imizamo Yethu; the forum includes representatives from political organisations to sports and church forums.

The DRMC agreed with the planning officer on the complex situation of IY and stated that "there are so many role players with different agendas" and the founder of Envirochild was on the same page and added: "based on my experience nothing will change because of political issues. The community needs a unified leadership with ONE agenda". When possibilities and scenarios for the future were discussed, the founder of Envirochild said having both the city and the province lead by the DA creates, in his opinion, a strong political context, making it easier to move forward and accomplish changes in settlements like Imizamo Yethu. He also added the fact that service delivery is happening in the Western Cape to a greater extent compared to other provinces, is not only a reason for people to migrate but also creates a platform for improvements in the future; "I'm hoping for development to happen as it is the only way to resolve the current situation".

The planning officer was of the same opinion and believed the proposed upgrade would address historical and locational disaster risks, through the adherence to municipal safety guidelines for design and layout. He furthermore believed that the development would result in risk reduction for the community due to the improved facilities, basic services, densities and improved water and sanitation.

## 5.7 Institutional capacity

In this report, institutional capacity refers to the capacity to implement, monitor and evaluate the process of policy formulations.

### Implementation of the Act

The DRMC discussed that various city and municipal service departments' mandates dictate their disaster risk reduction role; responsibilities, prevention and response activities. They also added that the DRMC of Cape Town is the only disaster management centre in the country that have added the term 'risk' to their name, and has thereby officially recognized and started, in their words, 'the paradigm shift from response to prevention, enhanced by the focus on risk reduction'. The DRMC expressed that they have support from the politicians; 'they understand the need to allocate resources to the DRMC' (last years budget was R 60 million), adding that Cape Town is fortunate to be provided with the adequate funding and equipment. There has been continuity increase in staff over the years and especially in 2010, much thanks to FIFA 2010.

The planning officer stated that risk reduction is the government's responsibility in terms of the municipal and national laws, and political commitments to provide housing and basic services. He added that the DRMC is mostly seen as a responsive agency and not necessarily a department working with development planning. In his opinion, development is viewed as a long-term strategic process that would work with other departments on implementing safety standards into the design process, e.g. road width for fire trucks.

One of the challenges that the DRMC had identified in the implementation of the Act is that many of the people within the DRM-team have a background in civic protection, and are therefore used to respond, and not necessarily to work with prevention. However, in their opinion, the institutional capacity has improved since the introduction of the Act, but it has had both pros and cons. Previous the disaster management teams were divided between seven municipalities but since the adoption of the Act these have all been unified as one centre, the DRMC. On the upside it meant more resources and capacities. On the downside, the DRMC discussed how a city of 3.5 million residents is a big challenge in itself and even though the resources are there, there's a challenge on how to utilize them in the best way. They also talked about how the Act influenced the position of the DRMC amongst the city officials[19]. Previously, civic protection had a direct link to the city manager, which made it easier to carry out orders. Now, decisions have to go through a number of different levels, hence a more unwieldy organisation. The DRMC explained that their department had an opportunity to be part of the city office, but since the Act requires the person running the centre to be an expert on disaster management, this did not happen. Instead the DRMC became a branch of the Emergency Service department.

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[19] See Appendix G for a layout of the different levels within the city office.

The DRMC added that ideally, the working procedure should be as per Section 52[20] in the Act – a municipal plan and a joint risk reduction committee working within nodal points within all departments. They added that political officers support is needed to implement the Act, the funding for facilities and staff to achieve it. Furthermore it was stated that the Act is a 'westernized' act and, in their opinion, risk reduction can only be done to a certain extent in informal settlements due to the level of development. When the fire department was asked about the Act they said that they were not familiar with it; "(they) don't know about it".

### *Definition of disaster*

During the interviews with the different stakeholders it became clear that they all defined a disaster in different ways. The health centre said: "fires and the result of them". The community tour guide said "I should ask you guys what is a disaster. The reservoir flooded 60 houses because of vandalism of the copper valves but that wasn't defined as a disaster by DRMC when I called in". He also stated that a disaster is something "uncontrollable that requires help. Just depends on how large, you can always get assistance from the neighbourhood".

The fire department stated "disasters are about effect not capacity", from their point of view "it's a disaster before we even get there, once the call comes in it's a disaster. Every incident is a disaster – people in IY lose everything they have, it's all in their shacks". They also added that if the DRMC would define the fires in Imizamo Yethu as disasters instead of incidents, more resources would probably be made available.

From the DRMC's point of view; "to be considered a disaster there must be a certain level of magnitude. For instance, if the municipality can't cope, then it's a disaster. What's happening in the townships can more be seen as emergency incidents. People normally bounce back within a few days and life is back to normal within a week". The DRMC said that they use the definitions from the Act and the supporting frameworks, adding that some interpretations are made but that the DRMC is striving to standardise and communicate terms of reference internally and to partner agencies.

### *Disaster management from the DRMC's perspective*

Disaster management was previous carried out from a macro perspective in Cape Town. But the focus has shifted to a micro level through an official risk assessment process. 60 hazards have been identified for the city of Cape Town and future focus will be on these hazards and their disaster potential. So-called hot spots have been identified and are used for planning. For each hazard, a task team will be setup with the relevant departments and service providers to explore and define a strategy for risk reduction and response management. Presently there is a flood task team and the next one planned is a fire task team.

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[20] Presented in Appendix H.

Various city officials have different responsibilities when it comes to disaster risk reduction, but in the case of disasters, the DRMC is responsible for coordination for the response phase. The DRMC is responsible for prevention but pointed out that it is difficult to coordinate prevention efforts and re-occurring incidents are a setback, but the DRMC emphasised that "it is better to prevent than cure" and are striving to improve prevention efforts. Weekly risk assessments are carried out, and if needed, an officer from the DRMC reports to the concerned city line function, and a coordination of all services is being completed every second week.

Different techniques are being used to implement risk-reducing initiatives; public awareness campaigns, pamphlets and dramatisations. Service deliveries are viewed as important proactive measures, and a year ago the DRMC did an awareness campaign regarding paraffin stoves. The DRMC said that they are trying to invite the media when they do prevention campaigns, showing that they put an emphasis on prevention measures. The DRMC does not always go through the community leadership when risk assessments are being done, since it, according to them, can be seen as choosing sides if there's a conflict within the community. Normally the sites are visited in private vehicles since the DRMC feel community residents tend to raise issues that are not part of the DRMC's job. The lack of branding and the fact that the DRMC visits sites during normal business hours, when people are either working or looking for work, are seen as explanations as to why the community might feel that the DRMC are only there in case of disasters.

The DRMC pointed out that Imizamo Yethu is one of 226 informal settlements; hence there just isn't enough funding to address all the issues associated with informal settlements. Additionally, they added there is large number of sites to visit and that proactive actions cannot be compared with response actions, and the response phase is often much more visible. The DRMC also discussed how the anti-land invasion unit[21] is understaffed and unable to enforce the law, and carry out their mandate. Fires in informal settlements are often associated with alcohol and the DRMC is working with the social development department in this case. The DRMC also said that there have been meetings with the fire department on how to address challenges in the community and how to create a quicker response, stating this was an on-going process.

### Disaster management from Hout Bay's perspective

From the chairman of SANCO in Imizamo Yethu and the provincial development worker's experience, the DRMC only responds to disasters; "they don't assess risks or teach us", "they [DRMC] only respond when there's a problem". They added that there has been some training programmes; the province ran a training programme on fire fighting, first aid, crime awareness and domestic violence and the city provided paraffin stoves and fuel for 4 months to 350

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[21] "The Anti Land Invasion Operation Units is a Division within Specialised Services, within the Cape Town Metropolitan which is tasked with the day to day policing of open spaces, parks and vacant land within the Cape Town Metropolitan Area preventing land invasion and the unauthorized occupation thereof" Anti-Land Invasion Business Plan 2010/11 p. 2, (City of Cape Town 2010b).

households without electricity and educated them on safety issues around paraffin stoves. The health department has been conducting workshops on how to handle meat and how to keep it clean.

The Department of Safety and Security conducted metro training on how to tackle crime and how to setup neighbourhood watch initiatives. Crimes have been escalating and SANCO has been working with the development of a neighbourhood watch to monitor sheebens, somalian shops (not closing on time), drug dealing and prostitution, but also to make sure that people can safely come home from work late at night; especially women working in restaurants. However, the organisation has been lacking the required equipment to gain respect from the community. The chairman of SANCO also added that Imizamo Yethu consist of ten street committees, which reports to SANCO in case of an incident. SANCO then reports to either the ward councillor or the city officials. The leadership of SANCO has also worked with raising peoples' awareness around fire risks when using paraffin stoves.

Outside Imizamo Yethu's own initiatives, training programmes have been run by NGO's or through UCT. The Red Cross provided training for a few people over the past 2 years, and UCT construction students built a water platform for washing and toilets, for example. The fire department has been teaching school children what to do in case of fires. They also do 'walk-throughs' once a week, something that is not required from the city, but is done on the platoon's own initiative. During walk throughs, they have illustrated the dangers of live wires for both residents and fire fighters, and how it limits the access for fire trucks but their experience is that it hasn't helped. However the situation has improved since a number of houses were provided with legal electrical connections. It has furthermore reduced the fire risks related to cooking and lightning of dwellings. However the fire department expressed that there is a lack of training and education programs for the community residents, adding that they don't have the personnel to spare during the shifts nor the funds to finance it, "we have the knowledge and ability to educate the community but we don't have the capacity to deliver the education". Currently, there is no community involvement since it requires the City Fire Chief's permission.

The fire department expressed that there's a lack of communication between them and the DRMC and they mentioned that there was a disaster management/continuity plan for FIFA 2010 but the fire department did not know what it was or what their role might have been. The fire department expressed that there was no formal partnership between them and the DRMC, 'no information on what operations they're running in the area or sharing of risk assessments information'. The fire department reports monthly to upper management on the stations' activity and adhoc issues relating to fire risks, e.g. roads, lightning or waste removal are reported to the city department concerned. The fire department added that it would be helpful to be informed on the DRMC's findings in the community. From the fire department's perspective they have the knowledge and skills but lack the capacity when it comes to equipment and manpower; 'the organisation [the fire department within the city] is not properly structured, (...) it's all political issues'. They expressed that Hout Bay residents

have unrealistic expectations on the fire services, stating, "we don't have the proper resources and infrastructure to provide the services that are needed for the area and population size (...) The municipality and city service deliveries affect our ability to respond".

The health centre explained that they work closely with the health department and they feel that they receive good support and resources from the department in terms of reports, response and out-break management. The health centre monitors pneumonia, gastric conditions, HIV, TB and polio and monthly reports are submitted both to the municipality and the province. The clinic started with a prevention programme in 2009, providing children with immunisations and they have already seen an improvement. Through an early notification programme it is possible to vaccinate potentially exposed children within 48-72 hours in case of an outbreak at a local crèche. HIV has become more openly discussed since there has been an increase in education & awareness, and the start of handing out ARV's. According to the clinic, it has drastically changed how people talk about it and people no longer take offense to being tested.

### Housing

All the stakeholders viewed the lack of land as one of the main problems, and housing was seen as the solution to reduce most risks facing the community residents. But at the same time it was acknowledged that the situation is complex and providing housing for all the residents poses a major challenge. There is no formal system in IY concerning who's entitled to a house, an issue discussed by most stakeholders, and as the chairman of SANCO pointed out "we need housing, but we can't house everyone". He added that no houses will get built until there is an approved list on who has the right to move in and the community leadership has to agree upon a new contractor to run the project. The order of any list should be made on a "first come first served basis" i.e. from when they arrived in the settlement, however with people arriving every day there is no way of establishing any such list. The city started to build houses through the People Houses Process (PHP), but according to the chairman of SANCO, people did not get served on a first come first served basis and therefore the project came to a halt. On the day of the interview, SANCO had a meeting with the ward councillor concerning where to move people and the need to provide services and housing in those areas. The community guide, an 'original' resident, expressed that the housing debate is filled with political tension, the original settlers have become the minority, while, according to him, they are the ones that should be helped first. But he also added "it is very difficult to decide who should be removed".

The DRMC expressed that housing probably would solve a lot of problems but added that there is a risk that backyards will keep on filling up with backyard dwellings, 'in order to reduce risks in informal settlements they need to be fully formalized'. There have been cases when people, whom have been entitled to a house, have used their home as an income strategy and rented it out and gone back to live in a shack again. The chairman of SANCO pointed out that it's not only been a challenge to know who is entitled to a house but also to know if the

people living in a house should be there or not. Envirochild also expressed that a secure housing strategy, including a list of who's entitled to a house, could be a solution to a lot of the problems facing Imizamo Yethu, but also added that the community, in his opinion, needs financial support and connections outside of the community to be able to improve their situation.

The fire department discussed that proper houses would not only be an improvement for the community but would also reduce their risks during the response phase, explaining how shacks easily could collapse and how 'everything is bunched together, propane tanks with furniture and clothes'.


### *Lack of Service Delivery*

Increased level of service deliveries was viewed as a solution from all the stakeholders to improve the current conditions. Service delivery does not only cover access to water, electricity, waste removal and sanitation supply but also the ability for the city's different departments to carry out their services. At the same time, many officials are depending on the basic service deliveries in order to do their job. According to the DRMC, the city of Cape Town provides a higher level of services compared to Port Elizabeth and Johannesburg, which was seen as one of the reasons why Cape Town attracts people. However, in the case of Imizamo Yethu, the lack of proper roads and the gradient of the slope make service deliveries a big challenge.

From the community perspective, services were not being delivered; the chairman of SANCO expressed "that you have to 'stand up' to get anything done". From their perspective, city officials were not taking responsibility. He believed the city officials 'don't know what to do or what is expected from them', 'it is easier to put the phone down than to respond to the person calling', which he explained was because of a lack of skills and/or education among the officials. He added that a working partnership on responsibilities and good management is crucial to improve the situation. One of SANCO's major concerns was the lack of toilets for the growing population, "there has been an improvement but it's not enough". The DRMC handed out cartridge toilets but they were not being used inside the often cramped, one room dwellings according to the DRMC.

The community development worker also asked for better service delivery, giving example of drains often being blocked and he added that this could both cause floods and be a danger for children. He added that streetlights and roads have been improved but there was still a need for further improvements. However, service deliveries have improved over the years according to the community development worker. The highest area has been provided with 'some toilets', and now 30-40 families share one tap of water and four flush toilets. The toilets were provided by the city but the community's responsibility to keep them clean.

From SANCO's perspective the location of the police and fire department 'next door' have had a positive impact on the community, stating that there has been times when 'there's been a lot of criminal activities and it's been helpful to have

the police right by'. Clifford Nogwavu, the chairman of SANCO, also said that the fire department was well organised and played an important role in terms of after-hours emergency response, e.g. 'if people have been stabbed or are sick'.


## 5.8 Community risk behaviour

Community risk behaviour can both be a result of natural ignorance and a lack of responsibility in learning how to deal with the risks as well as a feeling that there is no other option than to put yourself, your family and neighbours at risk.


### *Lack of space*

One of the challenges all stakeholders expressed was the lack of understanding among the community residents that there is no space left for housing. The fire department stated, "new people move in every single day". Recommendations such as, shacks should be a distance of 3 meters apart, are simply being ignored. The health centre explained it as; "people choose to put themselves at risk, without any mitigation strategies".

Due to the cramped lower part of the settlement (the more 'formal' part), new settlers have been forced to settle farther and farther up the hill. The community development worker believed people settle in this hazardous area since it is the only land available. The fire department was of a different opinion, believing some people purposefully put themselves in high-risk areas in order to advance on the housing list more quickly. The health centre, the DRMC and the fire department all discussed the fact that people don't even keep a certain distance from fire hydrants, but instead build their shacks on top of them. One of the officials from the DRMC said that she'd visited shacks with fire hydrants inside.

Another aspect of peoples' behaviour that was discussed was that as soon as one area opens up, e.g. to provide services, it got filled with new shacks instantly. The DRMC stated that in order to be able to provide pipes, for instance, for dwellings, some shacks would have to be moved. But it is not only on fire hydrants that constructions are being built. The water reservoir for all of Hout Bay is located on the top of the settlement and there are a number of constructions on the water pipe leading from the reservoir, making it impossible to monitor and do repairs on the pipe. Both the DRMC and the chairman of SANCO discussed that there was an eviction order stating that these people should be removed, but nothing has happened, and as the chairman put it "there would be a disaster if the pipe would burst".

The community tour guide discussed how the lack of space had created the different problems facing the community. From his perspective, there was a need for a monitor programme on how people were building – 'there needs to be space between the houses'. At the same time he asked; 'why is the government afraid to enforce the law?'

The health centre pointed out "rules are there but rules are broken". The chairman of SANCO talked about that he had a big respect for Helen Zille and her respect for the law, "the law is for everyone, no matter of the colour of your skin.

You can't build on a firebreak, there's one law for everyone". He added that unfortunately Imizamo Yethu often gets mixed up with the issues in Hangberg[22], which according to him "is something completely different" and he was also critical to the fact that the ANC had declared their support to the residents of Hangberg saying, "the people have no other option". When it comes to law enforcement in Imizamo Yethu the chairman talked about how shacks multiply in the community, adding that it is "political sensitive to remove people", and, "the transformation of South Africa is not simplistic, it's a lot about politics."

*Fires*

As mentioned in the introduction to Imizamo Yethu, the community has become infamous for its fires. The community tour guide discussed how fires often were accidents, or caused by carelessness, e.g. leaving open flames, heating of houses or cooking. The fire department added though, that some fires were the result of revenge and in some cases arson. All the stakeholders talked about drinking being a problem in the community[23] and how fires were caused by drunken people falling asleep while trying to cook food. There have also been cases of candles being toppled over by children left unattended. Furthermore, it was also suspected that some people have set fire to their own houses for strategic reasons, since they'll receive support from the city; food for 3 days, start kit for a shack and approximately R750. The fire department based this theory on the fact they have seen burnt down shacks that have clearly been emptied of furniture; 'when the Niall Mellon houses were built, people burnt down their shacks so that they would "deserve" to move into one of the houses'.

According to the fire department, the community often respond to incidents as an uncontrolled 'mob'. As they described it, "often acting in panic". The fire fighters described how they had been attacked from community residents and how people sometimes try to take the equipment from the fire fighters and put out the fires themselves. It was explained how the residents, worried and desperate to protect their belongings and dwellings, drag their stuff out and dump them on the road, thereby blocking emergency vehicles; "they want to help but don't know how". The density of shacks; badly parked cars; and electrical wires limiting the access or causing shocks, also obstruct the response. According to the fire department, the residents often hinder the operations instead of 'helping out', due to lack of understanding of the process and the fire fighters' needs. The community tour guide also discussed how people put value on their family and how the most important thing was to have a shelter for them.

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[22] Hangberg is a coloured settlement in Hout Bay and in September 2010 there was violent protest against the city's decision to demolish newly erected shacks, constructed on the fire break to the Table Mountain National Park. Officials from the city came to demolish the shacks and were met with wild protest from the residents. The city had previously promised to upgrade the community on the condition that no more shacks would be put up, a promise that hadn't been kept from the community's side. The protest resulted in no fatalities but a number of people were injured, of which some vision impared "some people lost and eye from rubber bullets" (Sapa October 4th 2010).
[23] The correlation between drinking problems and unemployment rate was also discussed and the community residents saw a clear connection between the high unemployment rate and the drinking problem in the community.

First thing after a fire, as soon as the area is cleaned up, was to put up a new structure according to the community tour guide.

The fire department was not only responding to fires in the community but also to medical incidents as soon as the clinic and day hospital is closed. The fire department said it is because their service is free, and involves no queue - the patient will be transported in ambulance to a major hospital without having to wait. Additionally, the fire department doesn't require a valid ID to assist, which is the case at the health centre and the day hospital. Thereby, the fire department often is the medical solution for illegal immigrants. The chairman said the fire department was a valuable resource to the community; well organised and not only responding to fires but also helps out in medical emergencies.

The chairman of SANCO said that he had proposed that the fire department should train two people from each block (street committee) on what to do in case of fire, but also how to prevent it. The fire department explained that in Stellenbosch, Paarl and Wooster community members have been trained to assess fires, making sure that shacks are kept apart and that roads are kept clean. Fire extinguishers are also spread throughout the communities.

### *Sanitation*

As previously mentioned, behaviour among the residents creates a range of risks, especially the lack of sanitation facilities; the hillside is used as a public toilet. Purpose built toilets have been subject of vandalism, unmaintained overflowing, and some people even used them as a source of income by attaching padlocks and charging R1 for a visit[24]. The fire department and the DRMC talked about how the hillside had become a 'public toilet' and thereby not only a hazard to the people living there but also the community and Hout Bay as one through the pollution of the storm water. The fire department talked about how it was not only a major health hazard for the people living there but also for they, themselves; especially at night due to the lack of street lighting, "there are human faeces all over the place".

The lack of sanitation facilities was a hazard considered by all the stakeholders, and especially the lack of toilets, but also the collection of solid waste. The service delivery problems are closely related to the lack of proper infrastructure, and exacerbated by illegal electricity connections and informal dwellings constructed without consideration to the accessibility of emergency vehicles. Waste dumped in front of dwellings was also discussed to be a hazard, both in terms of limited access but mostly in terms of health.

### *Education and responsibility*

The community tour guide Patrick stated, "the residents need to be educated on how to look after the environment and their homes, becoming more aware of

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[24] R1 (≈ 1SEK) might not seem as a large sum but if one or more children/family members are sick with diarrhea the required number of toilet visits could require a great share of the family's daily income.

risks and be more cautious". He said that people are spending their time working or looking for work, not improving or building up the community. He also added that a large part of the population is from rural areas and, what he called "non-permanent residents", i.e. they see Imizamo Yethu as a temporary location even though they live there 11 months of the year. As a result, he believed that they're not willing to invest in their dwellings and don't specifically care about the environment and the wider community. Kenny Tokwae, the community development worker, discussed how "some people wish to support themselves, others are being "spoiled" and wish for the government to help them, expecting handouts."

The fire department also discussed the need of education among the community resident on how to minimize their risk. Their suggestion was that in order to enhance peoples' capacity and reduce risks, training programmes and capacity development should be carried out externally. The fire department explained that there was a plan to meet with the community members and discuss what to do in case of fire and how to prevent it, but it fell flat. Money was available for training but nothing happened. One of the fire fighters said: "the City of Cape Town probably argue that less investment – less loss". The fire department also discussed how risk reduction requires political will, residents willing to learn and take responsibility for their own actions and proper leadership that has an interest in reducing risks.

# 6 Analysis and Discussion

The findings are varied and diverse, offering a wide range of information and opinion. An attempt to draw any analysis from the findings will again involve a closer look at the building blocks analogy illustrated earlier in *Figure 5*; community growth as the core problem, 'boxed-in' by lack of land, politics, institutional capacity and community behaviour.

## 6.1 Community growth

A report from the UNDP (Coppola 2007) states that urbanisation is one of two[25] factors that particularly influence the risk level of a nation and its population. The rapid, and uncontrolled, community growth of Imizamo Yethu has resulted in very dense living conditions on land largely unsuitable for habitation, resulting in multiple risks for the residents. The on-going migration and exchange between the Eastern and Western Cape adds an extra layer to an already complex and multidimensional risk context. On top of that, no one seems to know how many people actually live in Imizamo Yethu, making it difficult to determine the amount of resources that are required to accomplish risk reduction in the community. But considering that the site was designed for approximately 3 000 residents, and today it is assumed to be home to 16 – 36 000 people, there is unquestionably a major challenge in terms of risk reduction, whether those risks have disaster potential or not.

Marjanovic and Nimpuno (2003) discuss how risks and the effects of disasters multiply when population growth is not met with proper land-use planning and appropriate institutional and legislative arrangements. In IY's case the Act forms a solid legal framework but the challenge is to fully implement it, and to address the challenges with a growing population on a limited amount of space. The density increase, the overall exposure to vulnerabilities and the (poor) environmental conditions increase the vulnerability to hazards facing the community, but rapid growth is not only a challenge in terms of cramped living conditions. It is also a challenge in terms of access to education and other community facilities. From a long-term perspective, access to education can play a crucial role in order to improve peoples' living conditions. If people are struggling to afford transportation and the community can't offer the required facilities, their access to education might be limited. Imizamo Yethu can, in many ways, illustrate how an unplanned settlement results not only in poor living conditions, but also continues to marginalize its residents.

The rapid urbanisation -in this case 'uncontrolled' growth of a community, clearly shows that integration of disaster risk reduction in the planning and management of human settlements is essential. Holloway (2003) discusses how mitigation is mainly a development activity, aiming to minimize the likelihood of a disastrous occurrence, either by reducing the intensity of external threats or by reducing the vulnerability of those at risk.

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[25] The other one being rural livelihood (Coppola 2007).

## 6.2 Lack of land and land-use planning

Pelling (2007) states that risk accumulation often can be traced to unplanned housing, housing densification, unregulated livelihood activities and a disregard of disaster risk accumulation in urban planning. All these factors can be seen as contributing to today's situation of IY, and even though the need for an upgrade has been recognised for a significant time, the lack of new land strongly limits the possibilities to address the situation. This lack of land goes hand-in-hand with the rapidly growing community: creating a 'pressure-cooker' effect, or more powerfully, according to the Chairman of SANCO, a 'time-bomb' scenario.

Space is a crucial part of risk reduction, and especially in terms of the proposed upgrade. The lack of land in IY can be traced to both the culture of squatting, weak leadership in the past, and ignorance of recommendations in terms of distance and suitable living areas. But it's also a result of frustration among residents due to the authorities inability to address the situation earlier, and during previous disasters. How the situation in IY came to be, and who to blame could be discussed ad nauseam, but it clearly shows the importance of land-use planning as a structural measure to reduce risks. Lack of land combined with peoples' behaviour (discussed later) has created an environment posing major risks, not only for the people living there but also for the surrounding area and for the people working in the area (i.e. the fire-fighters). The 'uncontrolled' growth also resulted in no proper infrastructure being put in place and the current conditions make it very difficult to carry out service deliveries, especially to the part of the settlement located on the hillside. Rapid response in case of fires is strongly limited by the lack of proper infrastructure and illegal electrical wiring, combined with human actions. All those factors need to be addressed in order to reduce the disaster risk potential in IY.

Development of the area may seem the most obvious solution to address the situation, but it requires more land and it will additionally require people to move, and considering South Africa's history, this is a very difficult and sensitive issue. Risk reduction by simply addressing the most vulnerable, in terms of their location in the settlement, would most likely create tension and anger among the residents due to that fact many of the upper hill-side settlers are the most recent people to move in. The community leader clearly declared that in order for the community to cooperate with the city on the upgrade of the settlement it shall be done on 'first come first served' basis. The fact that there is no official waiting list agreed upon poses a major challenge, a challenge that probably will have to be solved before any constructions in the upgrade can start. However, in order to avoid clashes like the ones in Hangberg in 2010, there needs to be an alternative to offer those people who could be displaced.

## 6.3 Politics – the proposed upgrade

Coburn et al (1994) point out that risk reduction strategy is a political matter and will require a decision-making process which involve all parts of the affected community, but it may also be political tensions within the community that make

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it complicated to achieve set goals. This point fits IY in all aspects and is a major factor in why the development of the community has gone towards a more hazardous area instead of the opposite. Pelling (2007) discusses how the contributing factors to risks are aggravated by weaknesses in the urban governance and the absence of mechanisms to enforce disaster risk reduction. On a local level, the lack of unity among the community leadership has held up the upgrade process and probably also limited their possibilities to negotiate with city officials and other stakeholders. On a provincial level, conflict between the DA and the ANC has contributed to a hold up in the process. The court order to remove 103 shacks from the water reservoir pipe was turned into a political 'hot potato' by the ANC, claiming the decision was filled with "xenophobic tendencies, racism and forced removals". "It is now clear that Helen Zille's DA is ridding Hout Bay of the people they do not want there," said the ANC's Randy Pieterse (Mtyala 2010). However, the chairman of SANCO and the community guide both agreed that regulations should be respected and the law enforcement are inevitable in order to achieve any kind of development or to address the challenges of the community. The chairman of SANCO discussed how he found it difficult to get city officials to carry out their mandates, and even though reports were sent in, 'nothing happens'.

The upgrade of IY has clearly been a political challenge. Political will is crucial in order to achieve change and to address the identified challenges. But it is not only about politicians' commitment, it is essential that the community is united and that there is a sense if unity. The conflicts within the community have been an obstacle previously, and are still a challenge. It would be idealistic to believe that 100% unity within a community is possible to achieve when it comes to decisions concerning a community's future. But through discussions, democratic processes and community education, the reached agreement among the residents would gain legitimacy and give the community a stronger negotiating position in discussions with other stakeholders and partners. Strong leadership is crucial in order to implement and achieve changes, and especially changes with a major impact on the effected people. Community leadership in IY is an unpaid position and might therefore limit the opportunities to unite the community residents and make it a stronger voice to negotiate with stakeholders and decision makers outside of the community.

Additionally, it should not be forgotten that IY is filled with a range of different cultural backgrounds, and does not necessarily fit the definition of a 'community', and accomplishing unity has proven to be a major challenge. The planning officer explained that the public participation process had been filled with challenges and different requirements from both community residents and from the neighbours. As previously stated, discussing the reasons why and how IY came to be what it is today could go on ad finitum. However, it is most likely that if the political will/capacity had been there from the beginning in combination with a strong community leadership, that made sure that the plan for the settlement was followed, the situation of today might never have arisen, or at least not to the degree that is today's reality. What was initially planned to be an opportunity for the original settlers to move into IY, instead turned into a highly hazardous living situation. There was a unity among the interviewed

stakeholders that people will have to move and it is probably going to be the biggest challenge to accomplish. As noted previously, moving people is politically highly sensitive due to history, but also in terms of the huge backlog of housing and lack of alternative solutions for the affected people.

Even though root causes to hazards can be easily understood, the treatment of them might be highly polemical, or as Wisner et al (2004) stated 'they are always political' (2004:61). In IY's case, hazards and risk drivers are easily understood but challenges to disaster risk reduction are clearly influenced by politics.

## 6.4 Institutional capacity

Urban challenges do not only consist of population density, limited basic infrastructure, and resource constrains, but also limits in institutional capacity. Urban governance is important and crucial for both individuals and communities to negotiate around interests and issues that affect their lives and livelihoods. By developing effective urban governance processes, it is possible to decrease some of the factors affecting urban vulnerability (DiMP 2002). Vermaak and van Niekerk (2004) point out that one of the challenges for disaster risk management is to find 'effective means, a comprehensive and multi-sectoral approach, to reduce risk through professional disciplines as well as public participation' and they conclude that this requires both political and public commitment as well as an understanding on local community level.

It could be argued that the strength of disaster risk management - the combination of different disciplines and the knowledge it brings, could also be its weak point.  Disaster risk reduction in informal settlements requires cooperation between a number of city departments; housing, IDP, solid waste, social development, economic and human development, and health amongst others. Unless all involved stakeholders are working towards the same goal, within an organised, co-ordinated framework, and are aware of their role, improvements will be difficult to achieve, and conflicting agendas and lack of resources could easily hold up development work. Additionally, conflicting agendas among the different stakeholders and lack of communication clearly limit the possibilities for disaster risk reduction measures to be put in place. Furthermore, a functioning cooperation also requires the involved parties to share the same definitions.

### The DRMC: solution or problem?

The DRMC stated that to be considered a disaster there has to be a certain magnitude and that the incidents in the townships, in their eyes, are rather described as 'emergency incidents', not a disaster. The fire department was of the opposite opinion, and considered most of the incidents in IY a disaster because of the results of them. The Act states that an occurrence is a disaster if it "is of a magnitude that exceeds the ability of those affected by the disaster to cope with its effects using only their own resources". The Act states that it is the municipal disaster management teams' responsibility to prevent, reduce and mitigate risks. The Act also declares that disaster mitigation is a "multi-sectoral, multi-disciplinary process of planning and implementation"; hence it will require

resources from other departments as well as from the disaster risk management department, but the municipal disaster management team should be the overall co-ordinator. However, it must be considered that the DRMC's position within the city hierarchy could be seen as a challenge in itself, if it limits the efficiency to carry out their mandate. The experiences from the community residents were that city officials were often unable to help out and deliver what should, in their opinion, be expected of them. Whether this is due to lack of knowledge, resources or skills, it could be argued that inefficient city offices pose as much of a challenge to risk reduction as any structural challenges. Another challenge in terms of capacity is that the DRMC doesn't have any law enforcement mandate; hence they are dependent on other departments' capacity to carry out their objectives. It clearly shows the importance of well-functioning co-operation and information sharing between the involved parties to accomplish sustainable risk reduction.

Considering the fact that the fire department had never heard of the Act it could be argued that there is not enough communication between policy makers and their so-called 'partners'. Even though the fire fighters might not be part of the decision-making process concerning risk-reducing activities itself, they are without a doubt a fundamental part of any disaster risk activities in IY.

Disaster risk reduction involves vulnerability and risk assessment as well as institutional capacities and operational abilities (Vermaak & van Niekerk 2004). In other words, it requires a lot from the DRMC, so it is crucial that they are able to delegate tasks to the relevant department. Capacity in terms of mitigation and prevention strategies in the society are part of the DRMC responsibilities, and DiMP (2008) stresses that a closer co-operation between settlements residents and local authority representatives has the potential to strengthen both the local responsibility for re-occurring risks as well as the municipal's ability to deliver services effectively. One key strategy to enhance the community's resilience could be to work with the community leadership structure to encourage the residents to take ownership of their risks and educate them on how they can reduce the risks facing them.

### Effective disaster risk management

Van Niekerk and Visser (2010) argue that decentralisation of disaster risk management is necessary in order to achieve the ideals of the Act and the emphasis that is put on community risk reduction. The DRMC thought they had a functioning co-operation with the fire department but the fire department did not share the same view. The responsibilities of the DRMC are city wide, not just IY and the other 225 informal settlements in the region. It could perhaps be unreasonable to expect the DRMC to be fully up to date with the conditions in every single one all the time. Incorporating and allocating local resources, in this case making better use of the local fire department, could address the challenges in terms of having the adequate information needed for risk assessments.

Optimising resources is not done through having two different city departments conducting the same work. Van Niekerk and Visser (2010) conclude that

'decentralised structures for disaster risk management are an absolute necessity' (2010:13). The health department has a well-functioning co-operation with the health department and it has succeeded in reducing the number of cases, for instance, of pneumonia. The challenge for the DRMC would however be to co-ordinate all the different departments/stakeholders required to reduce the overall risk picture, and make sure that everyone is aiming for the same goal. The health centre discussed how the HIV situation has improved since the start of the ARV programme, and it is an important part of the long-term solution, since it will affect peoples' ability to cope with both day-to-day hazards as well as major impacts such as floods and fires. It is unquestionable that the informal settlements require development, and even though their situation can be defined as a disaster, it's not necessarily the job of the DRMC to improve the situation. Again definition and interpretation of the Act is the stumbling block here. It is unclear whether the DRMC are responsible or not depending on one's interpretation, but it is clear that they do have the ability to direct what's needed in order to create a safer community.

Yodmani (2001) states that "policy makers in the development and poverty reduction sector need to recognise so that disasters are not just 'setbacks' and 'roadblocks' to development, but result from the paths that development is pursuing. Thus by changing our planning processes, and incorporating disaster risk assessment in the planning of all new development projects, we can make sure that the future natural hazards will encounter resilient communities that are capable of withstanding their impact and therefore remain mere emergencies rather than disasters" (p. 10).

Succeeding with community based disaster management requires a supportive and enabling institutional framework (Yodmani 2001). Poverty and risks are not only generated through processes on a local level, hence the requirement to collaborate with external actors. The community can obviously play a significant role in risk reduction but will most likely need regional support right up to an international level of policies and actions (Lavell 2008). IY has leadership with a focus on risk reduction, SA has a solid framework focusing on prevention measures, but it requires efforts from a range of departments and stakeholders to achieve the objectives that are set up. Advanced legislations show a will to achieve a certain standard but it needs to be followed with education and skill training to achieve the set goals and to fully implement the aims and goals.

The Act is a very advanced piece of legislation and, as the DRMC pointed out it could be described as a 'westernized' act. South Africa's context is very complex in the sense that it comprises issues associated with so-called 'first world' countries, as well as 'third world' countries. Martin (2002) discusses that prevention efforts, the 'Prepared Community', has been enough of a challenge to implement in developed countries such as Australia, so implementation in developing countries, with a larger proportion of its population vulnerable to disaster, would therefore be very difficult.

In addition to the Disaster Management Act, Section 41(1)(b) of the Constitution of the Republic of South Africa states that all levels of the government shall

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"secure the well-being of the people of the Republic". Viljoen and Boysen (2006) state that this includes "the right to life, equality, human dignity, environment, property, health care, food, water and social security" (2006:86). Furthermore Viljoen and Boysen state that in order to achieve the objectives of the Act, it is necessary with a shared awareness and shared responsibility between communities, household, work places and society in general. However, this might be too ambitious to achieve before a simpler system securing the basic needs of daily living is put in place. When a community is struggling with day-to-day issues, the concept of a prepared community becomes a relatively less important issue (Martin 2002). Many developed countries have successfully adopted 'internationally accepted' concepts[26] of disaster management and these concepts are relevant for developing countries as well. However, Martin (2002) stresses that poverty alleviation must be considered when interpreting theses concepts. He concludes that poverty alleviation always should be the top priority and that disaster management can be an effective tool to reduce the extra burden caused by disasters. He also discuss that the concept of using volunteers is a challenge in undeveloped countries since people simply cannot volunteer for free and at the same time be able to support their families.

Disasters are in many ways a development issue. Disasters often strike the poor worst, they dampen growth by destroying capital and resources for relief and reconstruction. Lastly, disasters depress social welfare as peoples' assets and/or homes are destroyed (Dayton-Johnson 2004). Whether fires and other events are defined as disasters or not, it grasps the development issue of informal settlements. As the fire department points out, a fire in an informal settlement is a disaster because people literally lose everything they have. It might not be considered a disaster in the eyes of the DRMC, since people have the ability to bounce back relatively quickly, but it is a setback in the sense that it keeps people in a vulnerable status until the next event strike. It is not only a continuous setback but it also causes a stagnant situation with limited chances to develop or opportunities to rebuild stronger.


*Housing*
Housing is viewed as a key to address disaster risks. The major challenge considering housing in IY is probably the waiting list, or the lack of an approved waiting list. The upgrading process has already been held up due to lack of unity around this topic and it's a crucial part to resolve. Additionally, the unknown number of families in IY poses another challenge; the city of Cape Town is planning to provide housing for 16-18 000 people –their top estimate of the population, but the number may in reality, (according to the health centre), be closer to 36 000. Additionally, the limited amount of space also poses a significant challenge to address the issue.

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[26] These concepts were developed during the United Nations International Decade for Natural Disaster Reduction (1990-2000). They consist of the all Hazard Approach, the Comprehensive Approach (prevention, preparedness, response and recovery), the All Agencies Approach and the Prepared Community (Martin 2002).

The community development worker pointed out, some people wish to support themselves while others expect the government to care for them.

Kgalema Mtlanthe, deputy president of South Africa, stated in an interview with the Sunday Times (Malefane & Ngalwa 2011) that he's concerned about the growing trend where the 'citizens rely too much on the government'. "People want houses, they want this and they want that. For free, for free! Where have you ever heard of such a thing?" He discussed that it is the responsibility of the government to provide shelter for the poor but added that it was 'unacceptable for those with the means to expect hand-outs from the state' adding that "you can't have a situation in which half the population just simply says: 'Here we are, it is your responsibility to give us houses; it is your responsibility to furnish those houses ... to feed us ... and to ensure that our children get their education free..." He stated that a new campaign "to inspire people to be their own masters and change agents" was needed.

Unfortunately some peoples' attempts to improve their situation is done illegally, -in terms of land invasion, often on land earmarked for housing projects, and people have built houses illegally as a response to the government's "empty promises" (Samodien 2011).  It could be argued that the demolition of illegal constructions shows that it is useless to try to improve one's own situation and that people have to rely on the government. But the illegal construction could also be seen as attempts by these people to be their own 'master and change agents' but that they lack the knowledge on how to comply with the regulations or are unwilling to comply with those regulations. Even though illegal construction are met with law enforcement, the question of alternative solutions stills stands, as does the challenge to provide all the citizens with houses in accordance with the constitution.

Housing provision would probably be able to address a number of the structural factors influencing the risk picture of informal settlements, but it does not provide people with the knowledge and skills to address other factors affecting the risks to the community. Nor does it provide 'ownership of risks' that has previously been identified as a challenge. The DRMC expressed a concern that backyard dwellings would 'pop up' once the houses were built. 'people rent out the houses they received to gain an income, and go back to living in the informal settlements themselves'. President Zuma has addressed this issue on a national level, and he has urged the ANC branches to assist, stating that, "this irresponsible practice has to stop" (Malefane & Ngalwa 2011).

It should be noted though that the 'housing promise' applies to South African citizens. Even though all citizens of SA would be provided with housing there is still an unknown yet significant number of illegal immigrants that still lack the funds to change their situation and might therefore not have any other option than to continue to live under informal settlement's conditions. The Department of Housing (2004) stated the main obstacles and constraints to sustainable development implementation consist of: no incentives or fund for sustainable upgrades, implementation gap in terms of progressive legislations due to lack of financial resources and technical skills, land acquisition and management, limits

in capacity building at local level for integrated and participatory planning and lack of communication at all three tiers of government.

*Service deliveries*

Alongside housing, service delivery is viewed as the second key solution to disaster risk reduction, however it also poses a major challenge since it is dependent on proper infrastructure and space, all factors that will be difficult to address before the upgrade process can come into action. Disturbingly, the upper area of the hillside -the most informal of all, does not meet the minimum standards of a refugee camp, which suggests a maximum of 20 people per toilet (The Sphere Project 2004). In these informal areas of IY there are 30-40 families (on average of 4 people per family) sharing a total of 4 toilets; that is up to 40 people per toilet. The Sphere Project 2004 also determines that toilets shouldn't be located more than 50 meters from a dwelling; this standard is also not met. Effectively, the people are living in conditions worse than that of a refugee camp.

The health centre added that even though there are sufficient toilets in place in the more formalised sections, disposal of them is not always done in a safe way, and could pose an additional threat to the already hazardous health situation in IY. Sanitation facilities are essential in order to reduce health hazards. This challenge goes back to the problem of lack of land; there is no space to provide the settlement with more toilets. Without the upgrade this ticking health bomb will likely explode in the near future. The Disa River throughout Hout Bay is already heavily polluted with e-coli bacteria and pollution, largely due to the settlement. The objections made from conservation groups and residents associations regarding concerns about the environment have had the opposite effect, since the delay of the upgrading process have now extended over a decade, and the situation becomes more acute as each day goes by.

It should not be forgotten that the Western Cape is the best service provider in South Africa, and migration to the area is greatly due to the lack of service delivery in other parts of the country in the first place. Hence, this is partly the reason why extra pressure is put on the resources in IY. It clearly shows how national politics and capacity influence local conditions.

## 6.5 Community risk behaviour

Human behaviour is playing an essential part in the risk shaping of the community. However, it is difficult to fully understand whether peoples' behaviour is due to lack of education, lack of consideration or lack of options. There have been very different theories as to why people put themselves in hazardous positions, from desperation to strategic motivations. If a community is struggling with day-to-day challenges, disaster risks are unlikely to be considered important and long-term perspectives are not necessarily a part of any decision-making. Risks that are considered acceptable are not necessarily reflecting the actual risk level, but the subjective determination (Coburn et al 1994).

Fires have been a huge problem in IY, and human behaviour has influenced the causes and consequences of the fires. For example, the consequences of fires would probably not be as devastating if dwellings were built with a certain distance apart and if roads were kept clear. The fire department pointed out that there was a lack of education on how people could reduce the risks facing them. However, space resource limits the residents' opportunities to improve their situation. Basic infrastructure and land use planning are crucial to address risks, but risk reduction efforts also need to have an educational focus so that people are able to take responsibility for their own situation. Unfulfilled promises create false hope, leaving people in a state that could be described as paralysed -lack of resources and an expectation and/or hope that the government will do what it has promised. It could be argued that informal settlers remain substantially outside of the new democracy of South Africa since they, in many respects, continue to receive only limited concrete benefits from government programmes and policies.

Disasters can offer an opportunity to 'build back better', but this requires that opportunities are recognised and seized. It also requires an understanding and willingness among the community members, but also a solid structure and a strong community leadership that can facilitate and manage the recovery/rehabilitation phase. The 2004 fire and the establishment of Dontseyake (the informal hillside or 'unruled', section) showed how a disaster is not only a devastating event but how it can also exacerbate the situation from a long-term perspective. The city's inability to address the situation compounded with a community leadership that wasn't able to direct peoples' actions, resulted in worsened living conditions for some of IY's residents, but it is still influencing the rest of the settlement and neighbouring residents in term of health hazards.

The lack of sanitation facilities and peoples' habit of using the hillside as a public toilet is posing a severe health hazard. The community was given the responsibility to keep the city-provided toilets clean, but failed to do so. Either because of poor sanitation management themselves, inadequate service from waste agencies or the 'padlocking-for-profit behaviour' which limits peoples' ability to use the toilets. It is important to involve the community and make use of the existing resources, but it must be done in a sustainable way; offering people the ability to change their behaviour and comply with regulations, e.g. employ people for service deliveries within the communities. Without this kind of action it is difficult to accomplish long-term changes.

The chairman of SANCO discussed how he thought that the street committees could be trained by the fire department and this could possibly create a sense of ownership. However, convincing people to work on a voluntary basis when they don't have a secured livelihood might not be possible to justify. Education and training of community members on how to mitigate the risks facing them is crucial as part of long-term disaster risk reduction, as is changing peoples' mind-sets; teaching them to think longer-term in their approach to problem solving life's challenges.

Some risk behaviour by the community can also be seen as a vain attempt to address the challenges themselves, where they view the authorities haven't delivered. Without giving people alternative solutions or the tools to improve the situation in a way that complies with the rules of a society, people are forced to sit and wait for the different spheres of government to address the problems. As discussed before, people tend to rather focus on day-to-day challenges - livelihood issues, instead of risk reduction regarding a particular set of hazards. The challenge for disaster risk management is then to show how these issues might be linked to each other and how they can be addressed in both a short and long-term perspective.

DiMP (2002) discuss how "disaster management tends to adopt an approach where civil responses to risk events are not integrated into the mitigation of impacts of the event" (p. 47). They conclude that it is necessary to make local people an active part of the development and programmes for risk management to achieve a sustainable and safer city. At the same time, mitigation and prevention should be every citizen's responsibility. But in order to achieve personal responsibility it is crucial to enhance and support social capital and coping mechanisms for those exposed to risk, in order to reduce the possible impacts of hazardous events (DiMP 2002).

Yodmani (2001) considers that "disaster mitigation using government and institutional intervention alone is insufficient because they pay little attention to addressing the community dynamics, perception or priorities" (p. 4). The interviews visibly showed that the risk picture was clearly influenced by the behaviour among the residents, hence unless people are willing to change there behaviour (but also given the opportunity to change their behaviour), risk reduction in Imizamo Yethu and other similar settlements are likely to be nothing but rhetorical in terms of well-formulated policies and reports. "Just as every individual, family, organisation, business, and public service within a community will be affected by a disaster; each has a role to play in managing disaster. [...] The multitude of actions that must be taken to implement an effective disaster management program requires the participation of the entire community" (Yodmani 2001:4). "In many cases, we learn that with proper training and information, the communities are able to safeguard and minimize the disaster risks. It is essential that local capacities be strengthened to assess risk and develop mitigation strategies that are based on the communities' human, financial, information and material resources" (Yodmani 2001:4-5).

Building motivation among community members is not an easy task. In general, community members lack the enthusiasm to participate in meetings and urbane governance. There are some different explanations to this phenomenon; people feel that their involvement doesn't matter, that it will have no real impact, they lack the required skills, they don't have time, or the appropriate format or method is not being used (Sida 2005). Managing risk require ownership from not only the officials but also people living within the community. It has shown to be essential to provide those at risk with some control over the situation. If people feel that they have little control over the situation it often results in

undermining their attempts to reduce the risks impacting on their day-to-day life (DiMP 2002).

According to the UNISDR (2009) South Africa is acknowledging the need to involve local stakeholders in disaster risk reduction efforts but South Africa is not among those countries that have reported on successful experiences of utilisation or promotion of community involvement[27]. However, the report also states that although decentralised structures make use of participants from local to national level it does not guarantee the active involvement of the communities. The involved countries reported that lack of financial resources and gap in human resourcing are the main obstacle in terms of conducting training workshops and community sensitisation campaigns. However, if people see their current home as a temporary solution, as the community guide pointed out they often do, long-term changes might be difficult to achieve for those reasons as well. And as the Act states; it spans from national level down to individual level. But unless citizens are informed of what could be expected of them, how are they then going to be able to change their actions?

Ultimately, it must be remembered that South Africa is a new democracy, and it might be difficult for citizens to accept that change takes time and, although outside the scope of this report, it could be discussed what a reasonable timeline to achieve set goals would be. However, a democracy involves both rights and obligations. It's fully understandable that unfulfilled promises create frustrations or false-hope and entitlement attitudes, but a nation's citizens build up a democracy, hence responsibility has to be each and everyone's. For people to be able to take responsibility and ownership education is a cornerstone; yet just because people obtain knowledge, it does not automatically translate into a change of behaviour. There has to be a will, and motivation; an understood *benefit* that comes out of changing the behaviour -a sense of pay-off. Marginalised people often feel a sense of being outside of the society; it is difficult to motivate someone to change when they might feel it's not going to improve their own situation.

Maybe the actual challenge is to educate people on what it means to be part of a democracy? Both the community guide and the chairman of SANCO discussed the problems of a 'lawless culture' and how it, in their opinion was more or less accepted, thus hindering development. Disaster risk reduction requires both structural and non-structural measures in order to achieve its objectives.  A first step could be a clear and well-functioning leadership structure to promote long-term thinking, and then monitor and guide the residents on how to accomplish a sustainable change of their situation.

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[27] Cape Verde, Ghana, Madagascar, Malawi and Mozambique reported successful experiences from community participation, promoted through local DRR committees and assemblies. In Madagascar for example, 177 vulnerable communities had completed a disaster risk reduction plan, and efforts were being made to involve more community leaders (UNISDR 2009)

# 7 Conclusion

In many ways the scenario in Imizamo Yethu illustrates how disasters are a complex mix of hazards and human actions; hence there are no easy solution to disaster risk reduction. Most risks facing the community are associated with issues of a developing country; hence the only way to achieve risk reduction is through development. The conducted interviews have showed different approaches and the challenges to disaster risk reduction expressed by the stakeholders in IY can be categorised into five main themes;

*Rapid community growth* – the uncontrolled growth and the overcrowding of the community is viewed as major a challenge as it causes multiple risks for the residents and increase their vulnerabilities. It was also seen as a challenge in terms of relocating people due to the history of South Africa and its previous forced removals.

*Lack of land* – the overcrowding of the area resulted in use of land largely unsuitable for habitation and the limited space combined with a rapid growth resulted in a an unplanned settlement. The lack of land of land was seen as a challenge as it limits the ability to address the identified hazards through prevention measures but also the ability to respond to rapid onset disastrous events.

*Politics, the proposed upgrade* – the upgrade process that, initiated to address the problems in the settlement, was seen as another considerable challenge due to the conflicting development agendas; disagreements within the settlement, objections from outside stakeholders and political disputes.

*Institutional capacity* – housing and service deliveries, or the lack of those, were considered major challenges. The definition of disaster and the view on the ongoing disaster risk management in IY differed but the mutual point was the lack of resources to implement the objectives of the Act and also the lack of human and financial resources to address the daily needs of the residents.

*Community risk behaviour* – understanding and ownership of risk among the community residents was considered another challenge. In addition to battling over a lack of land, Imizamo Yethu also struggles with the fact that human actions and behaviour put people and the environment at risk daily.

The input from the different stakeholders in IY has shown that in order to address the development challenges the following crucial elements need to be addressed: organisational structures need to be improved, co-operation and unity amongst stakeholders, will-power to change, education and resources to implement programmes and policies. The Act constitutes a sophisticated policy framework but its implementation is difficult in a situation where the context includes many issues of a developing country. There is value to an advanced and ambitious frameworks –it declares a vision and way to move forward, but their objectives become secondary when basic needs are not yet fulfilled among a

country's residents –*you cannot run before you can walk*. Unless development issues are addressed, South Africa will continue to be placed outside the 100-ranking on the HDI, even though the national GDP qualifies it among the top 30 richest countries in the world.

It is important to understand that the risks explored and explained in this report largely relate to the present-case scenario. But to fully understand why this situation is a crisis, these present risks cannot be seen in isolation. The very crux of the problem in IY is a rapidly increasing population explosion, flowing year on year into a static and fixed space; like water into a bag – eventually the pressure will become too great and, Chairman of SANCO, Clifford Nogwavu's 'time-bomb' scenario will occur. Although no clear idea of the yearly population increase is even possible, estimates suggest upwards of 8 000 people arrived between 2001 and 2007 taking the population to 16 000. Yet by 2010 the health centre estimate closer to 36 000. At such a rate the 'worst-case' scenario cannot be too far away.

IY shows how hazards need to be addressed in relation to the surrounding vulnerabilities and their risk drivers. Unless the underlying problems are tackled, community disaster incidents will reoccur over and over again, and at an increased cost. Planning measures to reduce physical risks are important but they need to be supported by mitigation strategies that tackle root causes of vulnerability, and give people the opportunity to be part of the risk reducing activities.

Although IY was initially chosen as a case study because of it's unique or acute set of problems, it is clear that the complex set of challenges facing IY can in fact be seen as something of a microcosm of the wider challenge facing South Africa in becoming a newly democratised nation.

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## Legislations

Constitution of the Republic of South Africa, Act 108 of 1996

The National Disaster Management Act, act 57 of 2002

## Interviews

Clifford Nogwavu, elected community leader and chairman of SANCO in Imizamo Yethu, Redemption café Hout Bay, October 14th 2010

Dr. Johnny Anderton, founder of the NGO Envirochild, office of Eternal Solar Hout Bay, September 22nd 2010

City of Cape Town Disaster Risk Management team: Greg Pillay, Chris Konings, Dorothy Mann, Mark Pluke, Angelo Forbes, Jemma Wheatley, Roger Carney. Disaster Risk Management Centre of Cape Town, Head office Goodwood, October 15th 2010

Esther Corolus, sister in charge at the community health care centre "Coolamon House", Hout Bay Main Road, Imizamo Yethu, October 11th 2010

Kenny Tokwae, community development worker, Redemption café Hout Bay, October 13th 2010

Patrick, community guide Imizamo Yethu, outside Niall Mellon centre Imizamo Yethu, September 29th 2010

Planning officer (wished to be anonymous), town planner in the city of Cape Town, September 29th 2010

Platoon 3 of the fire department of Hout bay, Hout Bay Fire Station, 20th October 2010

## Presentations

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## Appendix A – Detailed map of IY



This photo, sourced from Google Earth, shows the different development zones and locations based on field research
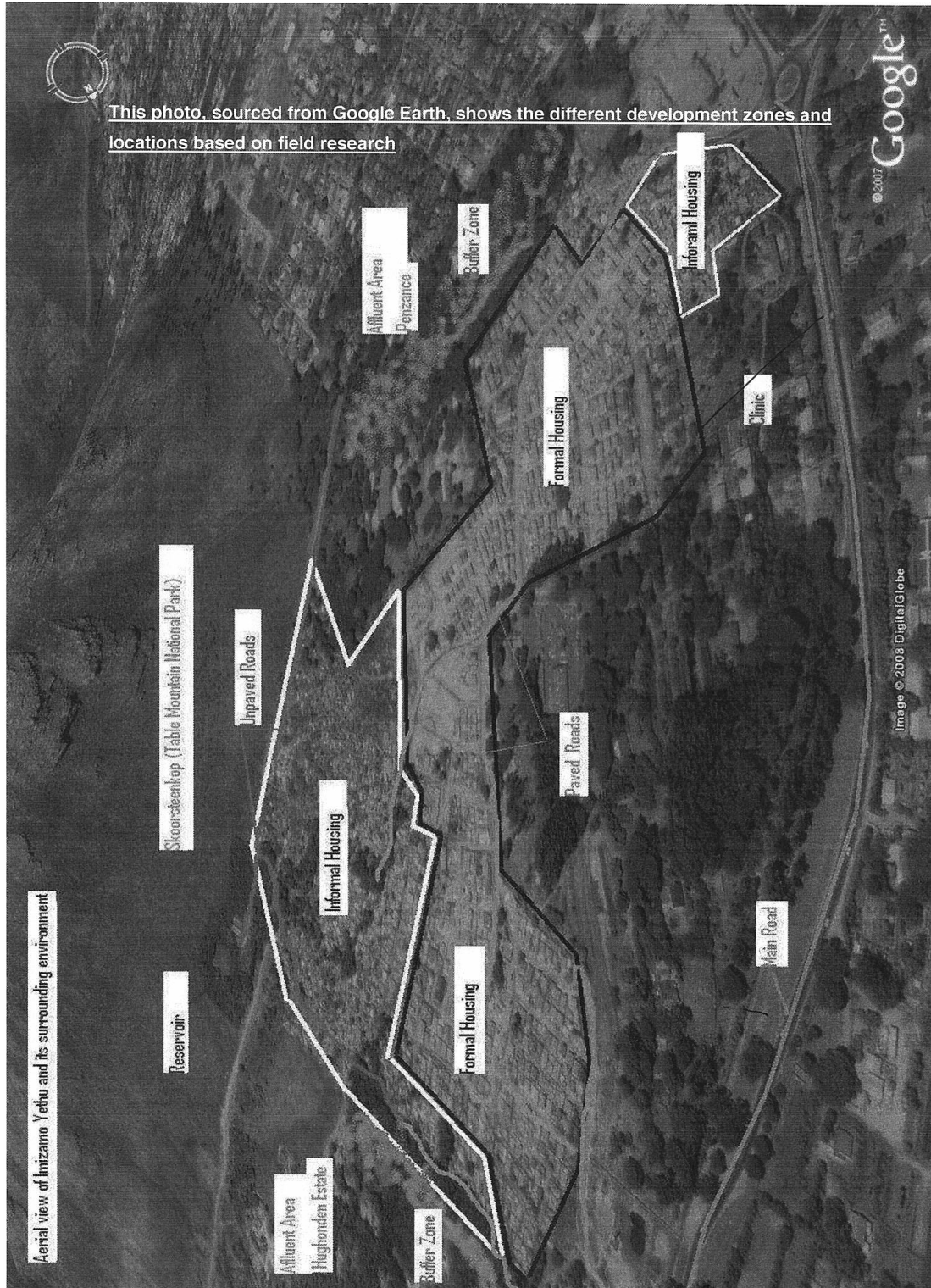
*Source:* Munnik et al (2008)

## Appendix B – Growth of IY

**1993**



*Source:* GEOM (1997)

**1994**



*Source:* GEOM (1997)
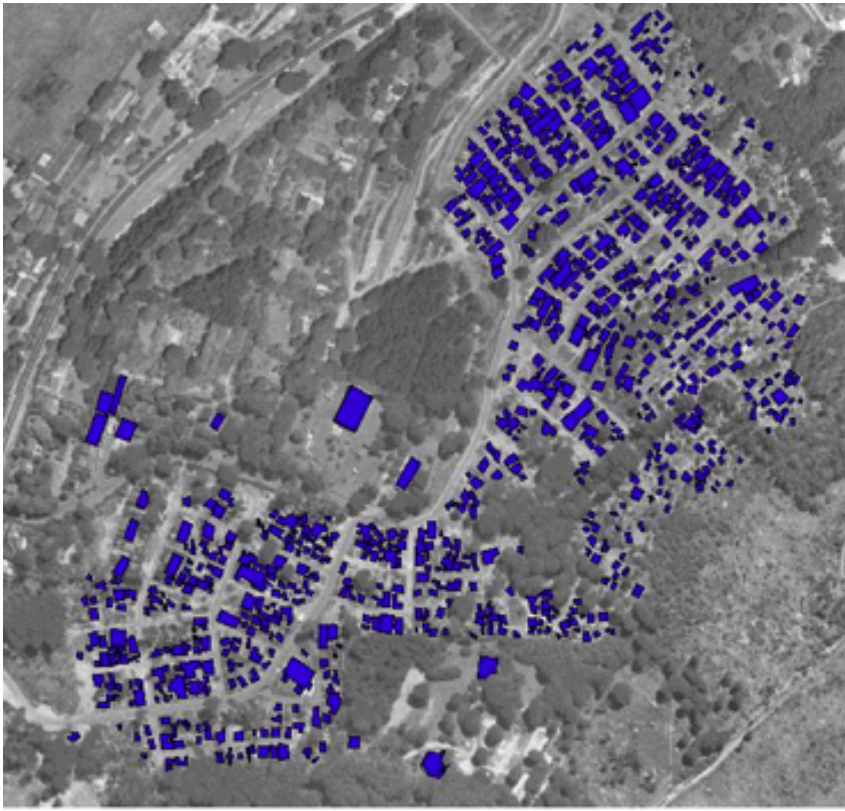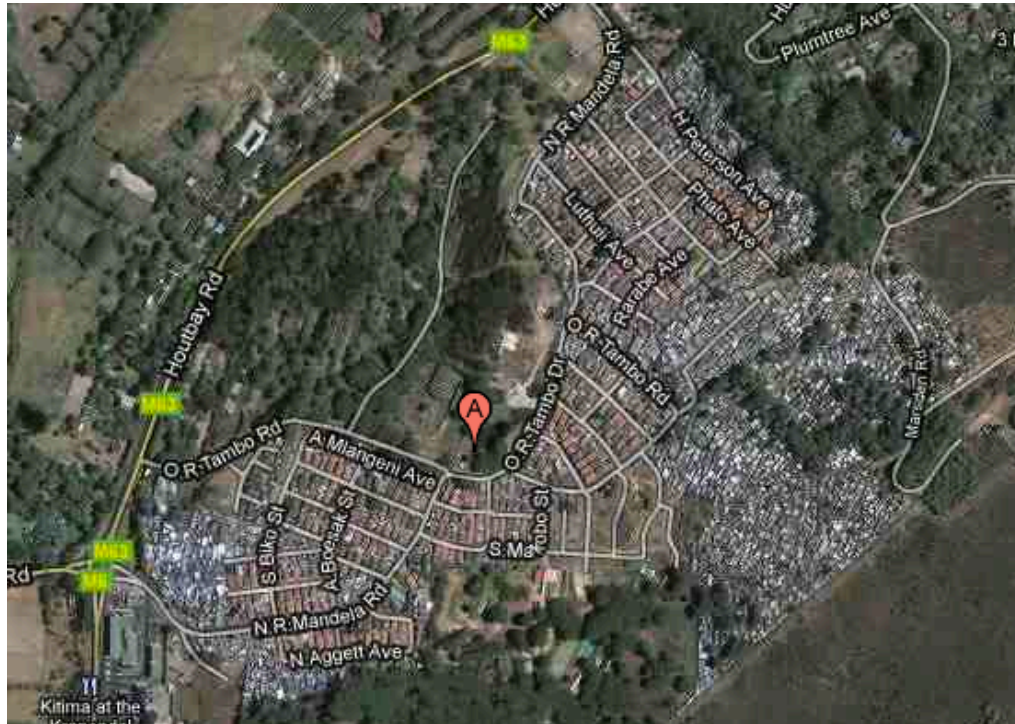
**1996**



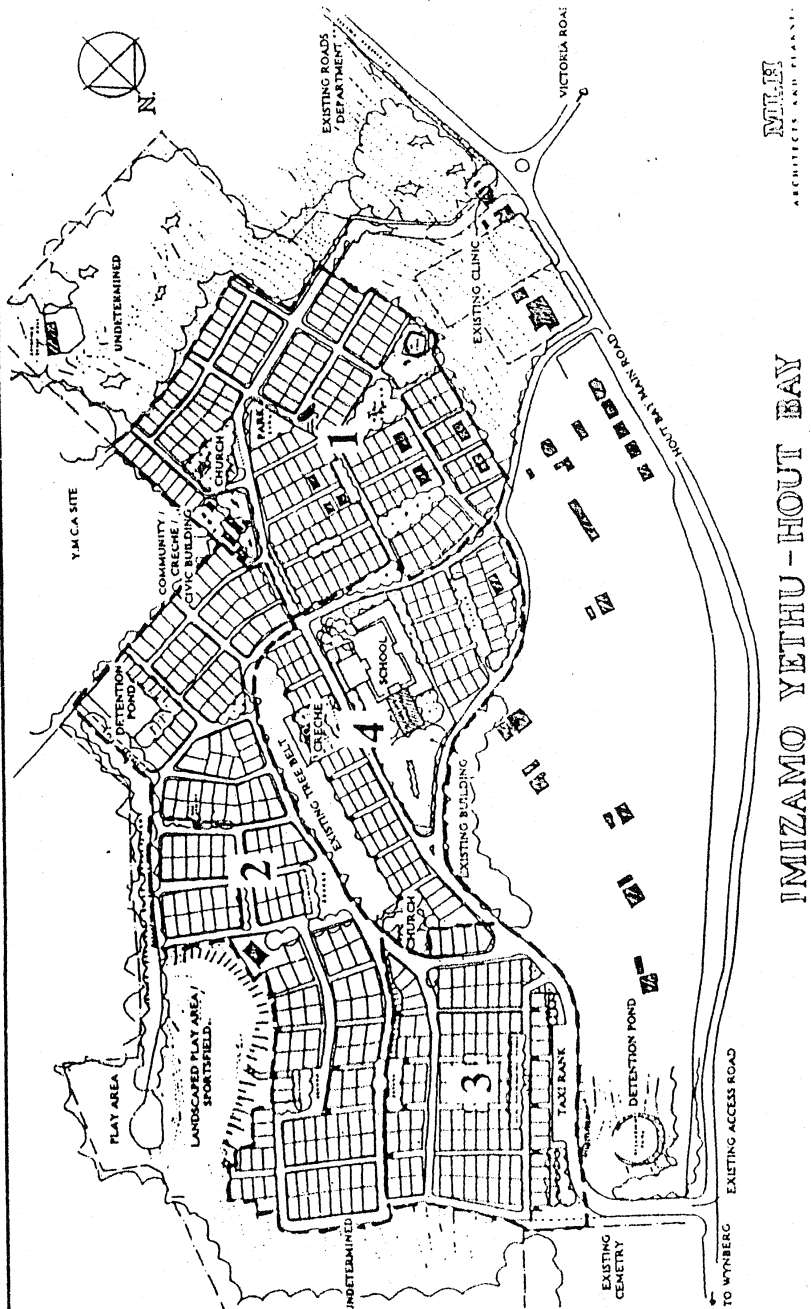*Source:* GEOM (1997)

**1997**



*Source:* GEOM (1997)

**2010**



*Source:* Google maps (2010)

## Appendix C – Initial plan of IY

A plan of the Imizamo Yethu village showing location of sites, church, parks, creche and community buildings.



IMIZAMO YETHU – HOUT BAY

*Source:* Sentinel News (1993)

## Appendix D – Reported fire events in IY since 2002

| Date of fire | Location | Houses destroyed | Deaths/ injuries | Estimated homeless |
|---|---|---|---|---|
| February* | Imizamo Yethu | 120 | None | 570 |
| June 2010** | Imizamo Yethu | 60 | None | 250 |
| November 2008 | Imizamo Yethu | 200 | n/a | 1000 |
| May 2007 | Imizamo Yethu | 30 | 1 dead | 100 |
| November 2006 | Imizamo Yethu | 100 | n/a | 500 |
| August 2006 | Imizamo Yethu | 4 | n/a | 15 |
| June 2006 | Imizamo Yethu | 5 | 3 dead | 25 |
| February 2006 | Imizamo Yethu | 52 | 1 serious injury | 'dozens' |
| February 2006 | Above Imizamo Yethu on mountain slope | n/a | n/a | n/a |
| April 2005 | Imizamo Yethu | 100 | None | 300 |
| January 2005 | Imizamo Yethu | 3 | n/a | n/a |
| February 2004 | Imizamo Yethu | 1200 | n/a | 5000 |
| September 2003 | Imizamo Yethu | 82 | None | 'hundreds' |
| Christmas/New Year 2002/2003 | Imizamo Yethu | 53 | n/a | 300 |

*Source:* Harte et al (2009)
**Source:* Sapa (2011)
***Source:* City of Cape Town (2010a)

# Appendix E – Questions for the stakeholders

*Semi Structured interview outlines*
   E. External input: Envirochild and City of Cape Town town planner
   F. Community Leadership, local tour guide
   G. Community: Fire Department and Health Care Centre
   H. City of Cape Town Agencies: Disaster Risk Management

Some of the questions were to gain better insight into the context of IY, while others specifically tried to investigate what the challenges are to implementing DRR within the settlement.

### A. External input: Envirochild and City of Cape Town urban planner
***From your perspective…***
   1. What is your connection to Imizamo Yethu?
   2. What do you think are the hazards and risks within IY?
   3. Why is the community at risk to disaster incidents?
   4. What do you think are the challenges that need to be address to reduce disaster risks in the community?
   5. Do you feel that planning has a role to play in community risk reduction?
   6. From your perspective, what needs to be protected or be targeted to reduce risk within this community?
   7. What is the process and current stage of the proposed development plan, informal settlement upgrade?
   8. Do you think land ownership is a challenge for disaster risk reduction in the context of Imizamo Yethu?
   9. Do you think the development plan will result in risk reduction for the community? If yes, How?
   10. Many other urban informal settlements will under go upgrades in the future, what key lessons or processes do you feel should be included to reduce community vulnerability and risks?
   11. What are the challenges for development for Imizamo Yethu?
   12. What are the resources and opportunities that can be build on to make this community safer?

1. Name:
2. Title/ Job:
3. Area of responsibilities:
4. What is your mandate?
5. What is your priority within IY?
6. Population estimate of IY?
7. Defining: Hazards, disasters, risk, who's vulnerable?
8. Why does the community experience disaster incidents?
9. What is creating risk and disasters within IY?
    a. What resources are available?
    b. Who's responsible?
    c. What has improved?
    d. What is needed?
10. Do you know of any risk reduction programs within IY, describe?
11. Is community data collected?
    a. By whom?
    b. Are risk assessments carried out?
    c. What is it used for?
12. What are the challenges you face in working in this community?
13. Do you think the proposed development make the settlement safer?
14. What are the challenges to creating a "safer" environment within IY?
15. What are the resources and opportunities that can be build on to make this community safer?

1. Name:
2. Position:
3. Unit Name:
4. Can you give us a short background on the structure and operations of Hout Bay fire/ health care services?
5. What is your mandate and how is the City fire/ Health services involved in IY?
6. What are your operations strategy within this settlement?
7. Defining: Hazards, disasters, risk, who's vulnerable?
8. From your perspective, did the disaster management act of 2002 influence your operations in Imizamo Yethu?
9. Estimated population of IY?
10. What are the hazards impacting this community?
11. What are the risk drivers?
12. Are there any vulnerable groups? Who is most at risk to rapid onset disasters within IY?
13. How has the Fire / Health Services responded to the risks facing the community?
    a. What tools do you use to track, manage and reduce risk?
    b. Is IY seen as separate to Hout Bay in terms of planning and resources allocation?
14. Many community disaster incidents are the result of re-occurring hazards, Have you seen any changes in IY over the past years?
15. How is risk reduced for the residents of IY?
    a. Are you currently running any risk reduction projects within IY?
    b. What needs to be protected or developed?
16. What do you think is needed to make this community safer?
17. What are the challenges for risk reduction within IY?
18. Do you see a connection between
    a. Population density and vulnerability?
    b. Housing type and vulnerability?
    c. Access to water & sanitation and vulnerability?
    d. Municipal service delivery and risk?
19. What are the challenges you face in working in this community?
20. What are the resources and opportunities that can be build on to make this community safer?

### *D. Focus group discussion (2hrs) - Disaster Risk Management.*

1. What is your working definition of Risk, Disaster?
2. Can you give us a short background on the structure and operations of DRMC?
3. What is your mandate and how is the City DRMC involved in IY?
4. Who is responsible from the city to engage and manage IY?
5. What is the risk profile of the community?
    1.1. What are the key drivers?
    1.2. Have you identified any vulnerable groups?
    1.3. Who is most at risk to rapid onset disasters within IY? Why?
    1.4. What are the hazards impacting this community?
    1.5. What is the priority hazard within IY? ...Why?
2. How has disaster risk management responded to the risks facing the community?
3. What tools do you use to track, manage and reduce hazards?
4. Is IY seen as separate to Hout Bay in terms of disaster management planning and resources?
5. Local residents say that they only see disaster management in response to rapid onset high impact disasters – any comments on this?
6. Do you see a connection between
    6.1. Population density and vulnerability?
    6.2. Housing type and vulnerability?
    6.3. Access to water & sanitation and vulnerability?
    6.4. Municipal service delivery and risk reduction?
7. What do you think is needed to make this community safer?
8. What are the challenges you face in working in this community?
9. What are the challenges to reducing risk within IY?
10. What are the resources and opportunities that can be build on to make this community safer?
11. Are there any reports available on IY that we could access?

# Appendix F – Further presentation of the stakeholders

**Chairman of SANCO – Clifford Nogwavu**
Imizamo Yethu resident
*Title:* Chairman of the local branch of the SA National Civic Organization
(SANCO). Political organisational links to ANC (ruling party), SACP (communist
party) and COSATU (trade union)
*Community position:* elected community leader, unpaid position
During the interview joined by the vice chairman of SANCO.

*Objectives of SANCO:*
- to represent and negotiate on behalf of its members
- to lobby authorities to propose favourable legislation
- to establish and promote community projects and co-operatives;
- to promote and advance effective empowerment and capacity-building

*Aims of SANCO:*
- improvement of the living conditions of all the residents of South Africa;
- eradication of poverty, homelessness and insecurity; building of a united
  community and a united South Africa; promotion of socio-economic and
  political justice for all; creation of empowerment structures.
Source: SANCO 2007

**Community Development Worker - Kenny Tokwae**
Imizamo Yethu resident
*Title:* Community Development Worker (CDW), Imizamo Yethu
*Employer:* Western Cape Provincial Government
Regarded as an informal community leader.
*Roles and Responsibility:*
- identify service delivery problems
- partnership between the community and government departments
- stimulating local economy development. Encouraging small business, as
  one way of handling the unemployment
- establish ward committees, encourage public participation
- public participation as a part of IDP

**Community Guide – Patrick**
Imizamo Yethu resident
*Occupation:* Imizamo Yethu tour guide
One of the original residents of Imizamo Yethu, long term knowledge of the
history and context of the community. Connected to all the different community
leadership but not involved in politics.

**Envirochild – Dr. Johnny Anderton**
Hout Bay resident
Environmental technologies consultant
*Community involvement:* Founder of Envirochild . An NGO developed in response
to the worsening state of IY, advocated a sustainable community development
plan for the proposed housing upgrade.

*Objectives of Envirochild:*
To engage the community with an environmentally and community orientated
development plan.

*Aims of Envirochild:*
Working with the community towards a sustainable future. To create a more
equitable, healthy, beautiful and united community through an innovative
approach to development.

**Community Health Care Centre "Coolamon House" – Sister Esther Corolus**
*Location:* Hout Bay Main Road Clinic, situated on the boundary of Imizamo Yethu
*Position:* Sister in Charge
Day clinic servicing Imizamo Yethu and the surrounding residents, with an
average of 5000 patients per month. This clinic operates as part of the south
peninsula district health services.
*Contact number:* 021 790 1720

**Hout Bay Fire Department**
Platoon 3 under captain Prince's command interviewed
*Community involvement:* Fire services including an after hours emergency
medical facility.
*Contact number:* 021 790 5140

**City of Cape Town Disaster Risk Management Centre**
The DRMC is a branch of the City Emergency Services Department, which is in
turn part of the City's Safety & Security Directorate

*Panel list:*

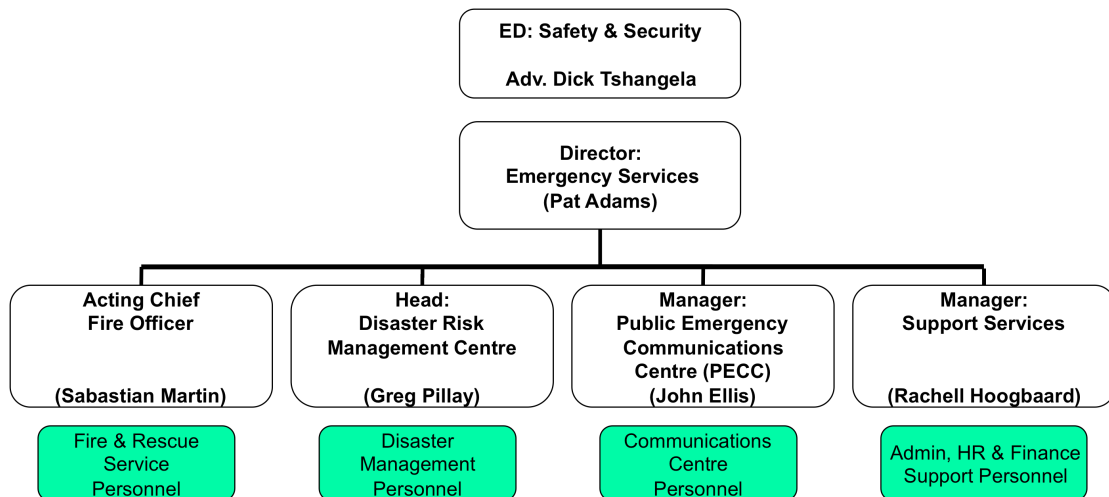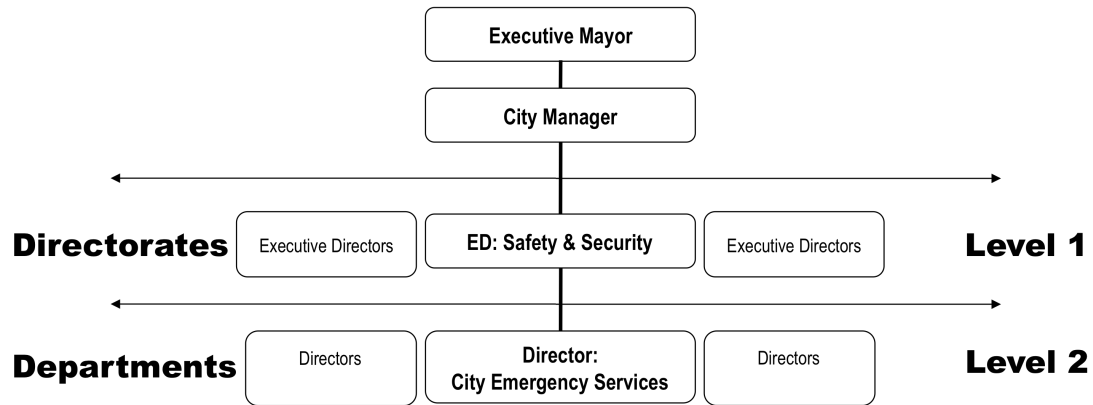| | |
|---|---|
| Greg Pillay – | Head of Disaster Risk Management Centre (DRMC) |
| Chris Konings – | Manager of Corporate Planning & Integrated Development Planning (IDP) |
| Dorothy Mann – | Manager of Training & Capacity Building |
| Mark Pluke – | Manager of Service Delivery Area West, including Imizamo Yethu, Hout Bay. |
| Angelo Forbes – | DRMC practitioner, Area West |
| Jemma Wheatley – | DRMC practitioner, Area West |
| Roger Carney – | Senior officer, human settlements services, City of Cape Town |

*Aim of DRMC:*
"To identify, prevent or reduce the occurrence of disasters, and to soften the
impact of those that cannot be prevented." (City of Cape Town 2010)

**Planning officer**
Wished to be anonymous.
Town planner in the city of Cape Town, knowledgeable on planning within Hout Bay and policy related to informal settlements upgrading.

## Appendix G – DRMC's position within the city of Cape Town

```
                          ┌──────────────────────┐
                          │   Executive Mayor    │
                          └──────────────────────┘
                          ┌──────────────────────┐
                          │    City Manager      │
                          └──────────────────────┘
```

**Directorates** | Executive Directors | **ED: Safety & Security** | Executive Directors | **Level 1**

**Departments** | Directors | **Director: City Emergency Services** | Directors | **Level 2**

```
                    ┌──────────────────────────┐
                    │  ED: Safety & Security    │
                    │  Adv. Dick Tshangela      │
                    └──────────────────────────┘
                    ┌──────────────────────────┐
                    │       Director:           │
                    │   Emergency Services      │
                    │      (Pat Adams)          │
                    └──────────────────────────┘
```

| Acting Chief Fire Officer (Sabastian Martin) | Head: Disaster Risk Management Centre (Greg Pillay) | Manager: Public Emergency Communications Centre (PECC) (John Ellis) | Manager: Support Services (Rachell Hoogbaard) |
|---|---|---|---|
| Fire & Rescue Service Personnel | Disaster Management Personnel | Communications Centre Personnel | Admin, HR & Finance Support Personnel |

*Source:* City of Cape Town (2006a)

# Appendix H – Section 52 of the Disaster Management Act

**Preparation of disaster management plans by municipal entities**

**52.** (1) Each municipal entity indicated in the national or the relevant provincial or municipal disaster management framework must—

    *(a)* prepare a disaster management plan setting out—

        (i) the way in which the concept and principles of disaster management are   5
to be applied in its functional area;

        (ii) its role and responsibilities in terms of the national. provincial or
municipal disaster management frameworks;

        (iii) its role and responsibilities regarding emergency response and post-
disaster recovery and rehabilitation;   10

        (iv) its capacity to fulfil its role and responsibilities;

        (v) particulars of its disaster management strategies; and

        (vi) contingency strategies and emergency procedures in the event of a
disaster, including measures to finance these strategies;

    *(b)* co-ordinate and align the implementation of its plan with those of other organs   15
of state and institutional role-players; and

    *(c)* regularly review and update its plan.

(2) *(a)* A municipal entity referred to in subsection (1) must submit a copy of its disaster management plan, and of any amendment to the plan, to the National Centre and the relevant provincial and municipal disaster management centres.   20

*(b)* If a municipal entity fails to submit a copy of its disaster management plan or of any amendment to the plan in terms of paragraph *(a)*, the National Centre or relevant provincial or municipal disaster management centre must report the failure to the executive mayor or mayor, as the case may be, of the municipality concerned, who must take such steps as may be necessary to secure compliance with that paragraph, including   25
reporting the failure to the municipal council.