This report is the product of a short course conducted by the Disaster Mitigation for Sustainable Livelihoods Programme at the University of Stellenbosch in July 2012 entitled ‘Community Risk Assessment: Focus on Informal Settlements’
Executive Summary

The South African Disaster Management Act and National Disaster Management Framework call for increased efforts to reduce risks developmentally. Disaster risk refers to the chance of hardship or loss resulting from the interaction between natural or other hazards and vulnerable households exposed to them. Disaster risk reduction refers to all policies, actions and initiatives that minimise vulnerabilities and disaster risks, including prevention, mitigation and preparedness. The South African National Disaster Management Framework explicitly states that “Disaster risk assessment efforts must actively include the participation of vulnerable communities and households” (RSA, 2005: 31).

As a developmental approach to disaster risk management/reduction, a community risk assessment is a fundamental step to inform development measures grounded on local risk dynamics with a view to ensuring sustainable development and service delivery programmes. Participatory risk assessment is a methodology that has been developed to engage communities developmentally, using highly participatory approaches in a bottom-up fashion. It provides insights into how risks are generated and can be reduced. In employing participatory methods a community risk assessment (CRA) has as its key tenet a concern to put local communities at the forefront of the risk and vulnerability identification process, thereby allowing ownership and control of the assessment by local residents themselves. In this way a CRA helps to create a framework for a reciprocal exchange of information and strategies between local authorities, key role players and local community members. Anderson and Woodrow suggest that by assessing its own capacities, a community can actually build community cohesion through joint action (1998: 14).

The Mandela City community was initially identified as an at-risk community by Cape Winelands District Disaster Management officials. Following discussions with Mandela City community leaders and the Ward Councillor for the area, Ms Sophie Louw, it was decided to commission a CRA as a project for participants attending Community Risk Assessment: Focus on Informal Settlements, a short course and training exercise offered bi-annually by the Disaster Mitigation for Sustainable Livelihoods Programme (DiMP) from the Department of Geography and Environmental Studies at Stellenbosch University.

A preliminary scoping exercise of the area was undertaken early in 2012 by a Stellenbosch University Disaster Risk Studies coordinator. The assessment process followed in July 2012, beginning with classroom-based lectures and training at the University and culminating in the field trip to Mandela City from 16 to 17 July, facilitated by DiMP.

The purpose of the assessment was essentially three-fold:

- To empower the Mandela City informal settlement dwellers by involving them in a risk assessment of their own living environment
- To provide a risk assessment report to Stellenbosch Municipality and local community leaders to be shared with service delivery and government stakeholders with a view to ensuring effective disaster risk management/disaster risk reduction
- To enhance the field research capacity and community engagement skills of the short course participants.

The field assessment was initiated with preliminary meetings held between the short course facilitator and the municipal Disaster Manager, community leaders as well as the Ward
Councillor. This provided background information regarding local developmental issues and historical concerns to inform a better understanding of the community and strategic insights into the area before commencing the assessment, while also ensuring acceptance of the proposed risk assessment process by the community and municipal authorities.

This report is derived from the reports submitted by the trainees, together with additional information supplied by various stakeholders, notes and observations made by the DiMP facilitators. It includes detailed information on the hazards identified by the Mandela City residents, their perceptions of the root causes of these hazards, temporal trends and historical changes, including disaster events, significant demographic changes, developmental interventions and even changing physical attributes of the area. The trainees provided recommendations for the reduction of risk based on their research findings. It is hoped that these may inform future risk reduction initiatives in the area.
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We are also indebted to several key role-players interviewed prior to and after the assessment who provided valuable additional information about the Mandela City community and the local area issues.

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  - Mr Ronald Frans – Klapmuts Primary School
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  - Mr William Fortuin – CWDM, Municipal Health Service
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  - Ms E. Fredericks – Community Development Worker, Stellenbosch
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To all those who provided background information and deeper insights into the Mandela City community prior to the assessment we extend our thanks.

This report has been made available to the Mandela City community, Stellenbosch Municipality, the Cape Winelands Disaster Management, all those who attended the discussion session or who were part of the research process and other interested role players. For a copy of this report please contact Patricia Zweig of the Disaster Mitigation for Sustainable Livelihoods Programme at Stellenbosch University on 021-808-9282 or email patriciazweig@sun.ac.za.
1. Introduction

The South African Disaster Management Act (2003) and the National Disaster Management Framework (2005) call for increased efforts to reduce risks developmentally. Disaster risk refers to the chance of hardship or loss resulting from the interaction between natural or other hazards and vulnerable households exposed to them. Disaster risk reduction refers to all policies, actions and initiatives that minimise vulnerabilities and disaster risks, including prevention, mitigation and preparedness. These may typically involve urban planning, education, health and other social vulnerability reduction measures. Closer cooperation and confidence-building between at-risk communities and local authority representatives can improve municipal service delivery as well as strengthen local responsibility for recurrent risks. Many risks are strongly rooted in social and economic vulnerability along with unstable sources of livelihood.

As a developmental approach to disaster risk management/reduction, a community risk assessment is a fundamental step for informing development measures that are grounded on local risk dynamics with a view to ensuring sustainable development and service delivery programmes. The key tenet of a community risk assessment is a concern to put local communities at the forefront of risk and vulnerability identification, thereby allowing ownership and control of the continued risk assessment process by the local people themselves. In this way a CRA creates a framework for a reciprocal exchange of information and strategies between key service providers, development practitioners and local community members.

The Mandela City community was initially identified as an at-risk community by Cape Winelands District Disaster Management officials. Following discussions with Mandela City community leaders and the Ward Councillor for the area, Ms Sophie Louw, it was decided to commission a CRA as a project for participants attending Community Risk Assessment: Focus on Informal Settlements a short course and training exercise offered bi-annually by the Disaster Mitigation for Sustainable Livelihoods Programme (DiMP) from the Department of Geography and Environmental Studies at Stellenbosch University.

A preliminary scoping exercise of the area was undertaken early in 2012 by a Stellenbosch University Disaster Risk Studies coordinator. The assessment process followed in July 2012, beginning with classroom-based lectures and training at the University and culminating in the field trip to Mandela City from 16 to 17 July, facilitated by DiMP.

The purpose of the assessment was essentially three-fold:

1. To empower the Mandela City informal settlement dwellers by involving them in a risk assessment of their own living environment
2. To provide a risk assessment report to Stellenbosch Municipality and local community leaders to be shared with service delivery and government stakeholders with a view to ensuring effective disaster risk management/disaster risk reduction
3. To enhance the field research capacity and community engagement skills of the short course participants.
2. Methodology

The risk assessment of the Mandela City informal settlement in Klapmuts in the Cape Winelands required a mixed methodology. This included a preliminary desktop study, an initial scoping survey of Mandela City, a field assessment conducted with the aid of community members and follow-up interviews.

2.1 Desk top study

Information was compiled primarily from published/unpublished books and reports, media reports, newspaper articles, students’ theses and interviews with key stakeholders. This enabled an informed understanding of the context in which the risk assessment was to be undertaken, an awareness of particular community social dynamics and issues while also identifying gaps in existing knowledge of the area, suggesting information to be sought during field work.

2.2 Scoping exercise

A preliminary scoping exercise is an essential part of a Community Risk Assessment process, involving consultation with a range of stakeholders, from local authorities to community leaders and local organisations. It requires a preliminary survey of the assessment area. These tasks were undertaken between May and July, prior to the field assessment.

2.3 Field Assessment

The assessment was carried out in July 2012, beginning with classroom-based lectures and training at the University and culminating in the field trip to Mandela City in Klapmuts in the Cape Winelands from 16 to 17 July. This was facilitated by the Disaster Mitigation for Sustainable Livelihoods Programme (DiMP) from Stellenbosch University. Participants were provided with information regarding the Mandela City area and community, which included general contextual and statistical information as well as historical aerial photographs to inform their understanding of the community and to gain strategic insights into the area prior to commencing the assessment.

The application of both individual interviews with the aid of questionnaires and the conducting of a community workshop served both to verify and compare information collected, while allowing multiple local perspectives to be recorded. Recent research has illustrated that although both individual and group-based methods generate robust risk information, some community members feel more comfortable contributing information individually for reasons of privacy, particularly members of minority groups usually excluded from community processes, while others engage more readily in group workshops, actively debating local issues and learning from the experience (Arthern, 2011). Group interaction has also been shown to generate increased community cohesion.

The short course participants were divided into three working group, each tasked with undertaking an assessment and compiling a risk assessment report based on group findings pertaining to a particular priority risk. These contained detailed information on the hazards identified and prioritised by Mandela City residents, local perceptions of their root causes, temporal trends and risk history, including significant disaster events, demographic changes and changing physical attributes or developmental changes in the area. The reports had to provide recommendations to inform future risk reduction initiatives in the area.
2.3.1 Community Risk Assessment

Community risk assessment is a methodology that has been developed to engage communities developmentally, a bottom-up approach using highly participatory tools and methods. It provides insights into how local risks are generated and can be reduced. It is an approach that aims to empower the community concerned by involving them in defining problems, in decision-making, implementation of appropriate activities and evaluation of results and interventions. A Community Risk Assessment can be adapted and applied in numerous contexts, for a wide range of risks. It is underpinned by a commitment to participatory engagement with at-risk communities and relevant stakeholders. It acknowledges that risk reduction efforts will necessarily vary from one community to another given their unique historical, socio-economic and physical attributes.

In the Western Cape context it is generally poor marginalised households living in informal dwellings and low-cost housing that are most vulnerable to fires, severe weather events and seasonal flooding, especially when they are located in risk-prone and ecologically-fragile areas. Government departments and local authorities have been hard-pressed to keep pace with rapidly growing and often unplanned demands for service provision – including the maintenance and expansion of essential public infrastructure and services.

Community-based disaster risk management (CBDRM) is an approach that aims to reduce local disaster risks through the application of participatory assessment and planning methods, aiming to strengthen people’s capacities to manage specific disaster risks. The CBDRM approach allows a wide group of stakeholders, including residents, civil society organisations and local government role players to jointly understand the disaster risk profile in a particular community.

The Community Risk Assessment comprises three phases:

- Preparatory groundwork to determine the risk context and existing risk reduction initiatives
- Conducting a Community Risk Assessment with the community
- Generating appropriate information for to inform integrated disaster risk reduction plans and appropriate developmental interventions and solutions.

The participatory methods used in the Mandela City CRA included the following:

- **Hazard identification** by settlement residents whereby they identify the most prevalent hazards affecting their household or the community as a whole.
- **Hazard Prioritisation** in which the hazards identified are clustered to enable community members to vote for the hazards they feel are most critical.
- **Problem Tree** - a flow diagram showing the relationship between different aspects of an issue or a problem. It aids in analyzing the situation by identifying the major problems and the causes and also clarifies the contents of the problems as well as their potential impacts.
- **Seasonal Calendar** - A tool that is used to identify periods of stress or particular vulnerability and focuses on seasonal risks such as floods, fires, social and economic problems or processes.
- **Risk History Table** - This helps to build a sense of change over time and to show how developmental or demographic changes within and around the community may have increased or reduced specific risks.

- **Venn Diagram** – Shows significant relationships with organizations and role players both within and outside the community, identifying their perceived importance and effectiveness to the community and identifying weak relationships that could potentially be strengthened.

- **Risk Management Table** – This identifies the local strategies used to avoid or cope with recurrent risks. It encourages participants to consider simple interventions to reduce their own risks and how these can be developed further in some cases.

### 2.3.2 Household Survey

On Tuesday 17 July 2012 participant groups undertook a transect walk of Mandela City, interviewing local residents using structured questionnaires provided for this purpose. The objective of the questionnaire was to capture up-to-date information regarding the Mandela City community such as household mobility patterns, household facilities, methods of transport, favoured shopping areas, age profile of inhabitants, sources of income, as well as the current crime profile. Please find copy of questionnaire attached.

### 2.3.3 Discussion Session

A discussion forum, including community members, local officials and other key stakeholders such as development organisations, service providers, NGOs etc. concluded the field assessment process. This allowed a rare opportunity for community members to present the findings of the assessment and then to enter into discussions around the key issues identified and to seek potential solutions.

### 2.4 Limitations of the study

It is important to acknowledge several limitations of this Community Risk Assessment:

- Ideally a risk assessment should be conducted over three or more field days to enable a thorough assessment. As this was essentially a training exercise, it was not possible to conduct a full assessment. This CRA therefore represents an abbreviated version of the full assessment process.

- The assessment was conducted on week days when many of the economically active residents may have been at work and their opinions may therefore not be represented.

- Although a Xhosa-speaking facilitator was present and some residents did speak English, the language barrier between short course participants, many from foreign countries, and Xhosa-speaking residents limited understanding and interaction to some degree.

- Most community members who attended the workshop had only recently arrived in Mandela City and had little knowledge of either settlement development history or past disaster events.
2.6 Ethical Considerations
Several ethical issues had to be considered by the students in conducting this assessment.

- The purpose of the survey was clearly communicated to community members and no development interventions were promised
- Workshop attendees volunteered their time
- All interviewees were guaranteed anonymity
3. Mandela City informal settlement – background and context

The small informal settlement of Mandela City is located in Klapmuts, a small rural town in the Cape Winelands region of the Western Cape Province. It is approximately 50 kilometres from Cape Town and is relatively close to the larger urban centres of Cape Town, Paarl, Stellenbosch and Wellington. Surrounded by the Cape Winelands, a predominantly rural area, Klapmuts has a well-established agricultural history in which viticulture in particular still plays an important economic role.

3.1 The Klapmuts area

Prior to 1995, when it became part of the Stellenbosch Municipality, Klapmuts fell under the jurisdiction of a Divisional Council. The Klapmuts Structure Plan (approved by the Stellenbosch Municipality in 2001 in terms of the Western Cape Land Use Planning Ordinance of 1985) describes the overall planning objective for Klapmuts as the creation of a compact village retaining a rural way of life by sustaining continued agricultural development through the protection of large agricultural units. At the same time, the need for the development of economic opportunities for poor local Klapmuts communities was identified as a priority. Located at a major transport hub, lying in close proximity to a major national road, the N1 that links the Western Cape to Gauteng and close to an intersection linking the regional urban centres of Cape Town, Paarl and Stellenbosch, the village of Klapmuts has the potential to become the target of large-scale, higher density development.

The total population of Klapmuts, according to the 2001 census was around 4 000 people, a significant increase from the 1996 census which recorded 1 515 people. This suggests a significant population growth rate of 32%, the fastest growing area in the Stellenbosch Municipality in that period. However, the census data can only be considered a conservative estimate as it did not include a count of informal households, and Klapmuts with a high proportion of the population living in backyard dwellings at that time was inaccurately represented. The survey established that Coloured inhabitants numbered more than two thirds of Klapmuts residents, with only 27.5 % Black African and very few Whites. The high percentage of Coloureds in the town reflects the history of Klapmuts as a designated Coloured area during the Apartheid era.

The population in Klapmuts today has increased quite substantially since the 2001 Census. This is due to several factors: natural internal growth, the influx of farm workers expelled from neighbouring farms in the area in the wake of the Extension of Security of Tenure Act promulgated in 1997 (ESTA), and in-migration from the Eastern Cape and other areas.

According to the 2001 census survey, Klapmuts had a high dependency ratio due to its age profile, with more than half the inhabitants younger than 15 or older than 65 years. The census also estimated that only half of the economically active population of Klapmuts was employed in the formal economy (Provincial Government, 2007). Given that the area has a high percentage of young people who have subsequently entered or will be entering the job market this is an alarming statistic. The closure of a number of textile factories in the Cape
Town Metropolitan Area after 2000 reportedly resulted in significant job losses for people living in Klapmuts. For Klapmuts, the manufacturing sector provides the most employment opportunities (29%), followed by agriculture (18%), wholesale and retail trade (16%) and the construction sector (12.5%). A greater percentage of the employment opportunities in the manufacturing sector, which represents the most important sector in terms of employment, are also likely to be linked to the agricultural sector.

Traditional agricultural activities include viticulture, fruit farming, wheat farming and vegetables as well as livestock farming (dairy, beef, and sheep). Pig and chicken farming is also found in the area. However, due to the increasing incidence of stock theft there is shift away from livestock farming.

According to members of the Klapmuts Ward Committee, seasonal unemployment has become endemic, most severely affecting people employed in the agricultural sector. Recent estimates for Klapmuts place the functional unemployment rate (permanent unemployment plus seasonal unemployment / underemployment) as high as 67% (Anthony, personal communication).

The promulgation of the Extension of Security of Tenure Act (ESTA) in 1997 impacted on employment in the agricultural sector. A recent report mentions that farmers have moved away from employing permanent staff that live on the farm and prefer to employ temporary staff (Harbour & Van der Merwe, 2010). Representatives from the Klapmuts community indicated that a typical daily wage for unskilled workers was in the region of R50-R60 per day. Indeed, recent conversations with farm workers have revealed that a weekly wage of R250.00 is still a fairly average remuneration. Many temporary labourers employed on local farms once lived in the Bloekombos community in Kraaifontein but moved into the area to reduce their transport costs by living closer to sources of employment.

Two relatively small informal settlements are found in Klapmuts, namely Mandela City, situated on the southern fringes of Klapmuts near the reservoir, which is the focus of our risk assessment, and La Rochelle located east of the Klapmuts sports grounds. The committee members from the Klapmuts Ward Committee indicated that a substantial portion of these households consists of agricultural labourers and their families who have been forced to move off neighbouring farms in the area. It would appear that the people who live in these informal settlements are considered to be part of the Klapmuts community, and that there are no major feelings of animosity towards them, although when it comes to access to state-built housing there are undeniably some tensions around allocation.

Until as recently as 1996 Klapmuts did not have access to treated municipal water, relying exclusively on borehole water.

Both the Stellenbosch Law Enforcement and the South African Police Service patrol the area, while a Community Policing Forum is active in Klapmuts. Official South African Police Service (SAPS) crime statistics for the period April 2001 to March 2006, although dated, indicate that theft (including burglary, and petty theft) and common assault (as well as more serious incidents with the intent to cause grievous bodily harm) constitute the main
categories of crime. According to a local community leader much of this crime can be attributed today to an increasing use of drugs such as ‘tik’.

The Klapmuts Clinic is currently the main primary health care facility in the area, providing primary and preventative health care services. Four registered nurses and one staff nurse attend to a huge caseload of around 2 000 cases per month, reiterating community comments that understaffing is an important issue. Tuberculosis (TB) and HIV/Asids are two of the most serious diseases affecting the community.

The Klapmuts Spatial Development Framework suggests that approximately 10% of those living in Klapmuts have no education, suggesting a high rate of illiteracy and a challenge for children with illiterate parents now entering the education system. The local primary education facility, Klapmuts Primary School, was recently upgraded at a cost of millions of rand. It provides tuition primarily in Afrikaans, offering tuition from Grade R to Grade 8. Most of the learners live in Klapmuts town itself, while roughly 100 pupils come from surrounding areas. The school currently accommodates approximately 1 200 learners and 33 staff members. The teacher to student ratio is 1:39. According to the Principal, the school does not have the infrastructure to accommodate additional learners. Joostenberg Primary provides tuition for Grade R to Grade 7. Pupils come from There is no secondary schooling in the area. Learners typically attend secondary schools in Kraaifontein, Paarl, Stellenbosch or even further afield but there is a high drop-out rate.

3.2 Mandela City informal settlement

Mandela City is situated on municipally-owned land located in Ward 18 in the Klapmuts area, which falls under the jurisdiction of the Stellenbosch Municipality. The settlement is located adjacent to a large farm dam and an established low-cost housing area.

3.2.1 Founding of the settlement

Mandela City was reportedly established some time before 1996, some say as early as 1993. The name Mandela City is thought to refer to the release of Nelson Mandela from the Victor Verster prison in nearby Paarl and this could provide a clue to an earlier establishment date, around 1990. One of the founding fathers was a man by the name of Elliot Zenzile, who died in 1999 taking much of the settlement’s unrecorded history to the grave with him.

Originally situated about 700-800 meters away from its current location, Mandela City was later shifted to accommodate a new housing development sometime between 1997 and 1998, but kept its original name, with only 18 shacks remaining. After this relocation, the settlement had no basic services.

The first settlers in the settlement came from surrounding farms and were all Xhosa-speaking. Upon moving onto the land the Mandela City inhabitants shared the land already being utilised by Klapmuts small-holder farmers who were waiting for the Municipality to identify land on which they could farm. According to one source the land was previously municipal commonage.
Since 2005, more people have migrated to the settlement and erected more shacks. A large fire in 2009 destroyed 180 shacks and killed 3 people. Electricity was provided in 2010 and has seemingly helped to reduce the risk of fire.

3.2.2 Demographic profile

A 2010 survey, prior to the provision of electricity, established that there were 207 dwellings to be supplied with electricity. Community members reported that there are about 600 people living Mandela City in 295 houses. However this information was not substantiated. Community members explained that since the electrification of the informal settlement, the amount of houses has increased from 207 in 2010 to 295 currently. Dwellings that were built after 2010 therefore do not have legal access to electricity and make use of illegal electricity connections.

According to a local resident many Mandela City residents originally arrived from surrounding farming areas, while other seasonal workers moved from areas such as Khayelitsha to set up homes in Mandela City in order to reduce travelling time. It was not possible to establish the gender profile of the community during the scoping for this brief background report. However, it was remarked that although there is a mix of age groups in the community, the age profile is skewed towards the younger age groups, most of these family groups rather than single men which is often the case in other Western Cape informal settlements.

Although the majority of Mandela City residents are Xhosa-speaking, many residents are able to speak and understand Afrikaans, particularly by those who have worked on local farms. However, although able to speak Afrikaans, community members indicated that they are unable to read the language. There are also reportedly a significant number of Sotho-speakers who lack identification documents. As a consequence these Sotho-speakers remain largely un-accounted for and ‘below the radar’ which means that housing waiting lists, government grants and various other services available to South African citizens are not accessible to them. The prevalence of Sotho speakers was also noticed in a recent assessment of Mbekweni in Paarl area, where they have reportedly been living since the 1940s.

Since the end of 2010, subsequent to the electrification process, several Somalian people have moved into the settlement where they have opened small trading stores. The local residents appear to be happy with this development which has brought goods within their reach, which were previously only available at quite some distance from the settlement and at reportedly good prices. A visit to one of these stores revealed that most general goods are sold, including toiletries, fresh refrigerated goods, basic grocery items such as mealie meal and flour, salt and sugar, tinned goods and vegetables, sweets, candles etc. The community members explained that there is a good relationship with the foreign nationals and could not report any incidences of social conflict occurring in the area. Five shebeens were recorded situated amongst the houses.

There is a high unemployment rate in the community that mirrors to some degree that of the Klapmuts population in general. The majority of working residents in Mandela City are employed as labourers on farms, many typically on only a seasonal basis. A local leader
explained that the average weekly wage paid to farm labourers is around R250,00 for five days work. No payslip is provided and no UIF is paid by employers. Several Nigerian residents have established small trading or spaza shops in the community, providing essential provisions to local residents. An informal crèche was discovered during the transect walk as well as a home-based beading industry and a sewing project.

Although there is a local clinic that provides primary health care in Klapmuts, this is reportedly under-resourced and under-staffed. Given that there is a high rate of TB and HIV/AIDS in Klapmuts (residents mentioned some deaths attributable to TB and at least 63 cases of HIV/AIDS in the community) this is a sub-optimal situation. Unemployment undermines those with poor health who are unable to purchase nutritional food.

Some inhabitants of Mandela City are small-scale livestock farmers, keeping their stock adjacent to the settlement in open pens. They are predominantly pig farmers, but also keep goats and grow vegetables. Many informal dwellings have small garden plots and were seen to be growing vegetables for own consumption.

There has been some concern about a recent outbreak of swine flu among the pigs in the area, and community members also voiced their concern about the filthy conditions generated by the farming of livestock next to their homes. Children frequently experience gastric complaints which are blamed on the pig-farmers. The smell emanating from the pigs is apparently far worse during the hot summer months.

The local school, Klapmuts Primary, is well-resourced, with state-of-the-art facilities. It accommodates many of the children from Mandela City. However, the medium of instruction is Afrikaans posing a problem for the majority of children from Mandela who are predominantly Xhosa speakers. A conversation with the Klapmuts Primary Head Master revealed that children were receiving computer classes from Grade R, and that there was much investment in child emotional and psychological support provided by the school as well as a school feeding scheme. However, there is no high school in the vicinity.
There are two churches in Mandela City, one for the Zionist congregation and the other for the Apostolic. Despite this, there are no community facilities in which to hold meetings so that they are usually being held outside in the open air and so become less frequent in the winter months when it is wet and cold.

### 3.2.3 Service Provision

Mandela City is currently provided with 20 flush toilets, comprising two blocks of ten toilets. Ten of these were provided as recently as January 2011. The toilets are cleaned by the Stellenbosch Municipality. During the CRA it was observed that four of the toilets were broken.

![Figure 3. One of the toilet blocks in Mandela City](image1.png)

![Figure 4. Overflowing skip on periphery](image2.png)

Three water points are provided: there are two taps with basins located at the toilets on the northern side of the settlement. On the southern side, one tap is provided at the toilet block, with another located a few metres away. Both these taps had been vandalised at the time of the assessment so that while one of the taps did not work at all the other tap had been completely removed, causing water to flow constantly. As a result a large muddy area with standing water had developed around the tap. Community members believe that only one of the communal taps provides truly potable, healthy water supply to the households and distrust the others which are commonly considered to be connected to the adjacent toilet systems. According to the environmental health department one washing bay is connected to the local stormwater system. Since the settlement is not provided with drains, waste water from washing, food preparation etc. is merely discarded outside dwellings. Polluted water then collects or runs in open furrows, resulting in pollution and posing hazards for environmental health.

Electricity was provided in 2010, with enumerated households being provided with prepaid electricity meters by Eskom. This development was achieved after several large-scale fires caused deaths and loss of homes in Mandela City which was reportedly followed by community protests. The electricity poles accommodate street lighting for the community.

Three refuse skips have been provided in the settlement by the municipality. However, according to residents black bags are irregularly distributed to households. These skips are serviced by the municipality. However, the community are concerned to establish a re-
cycling facility in order to generate additional income but have not been able to contact locally-based recycling companies for this purpose.

The Klapmuts clinic is located close to the Mandela City settlement. This is run by the Provincial Department of Health, while the closest hospital is in Stellenbosch.

There is a local South African Police Service Station located in Klapmuts, while the Stellenbosch Municipality also provides a law enforcement service that patrols the area. A new sports stadium has been constructed to service the Klapmuts Community. Applications for and collection of government grants are processed from an office in this complex.

The Klapmuts railway station is within walking distance of the community, providing rail transport to Paarl, Stellenbosch and the City of Cape Town. Taxis are reportedly quite expensive.

The nearby Klapmuts Primary School has recently undergone a complete refurbishment and now comprises 32 classrooms, a computer facility, library, school hall and sports facilities. The school may be a factor attracting people into the area. Children are taught mainly in Afrikaans, but Xhosa medium is also available. The lack of classes being taught in English is a major bone of contention for the community. The school principal indicated that there is free pre-primary available at the Primary School for all children living in Klapmuts.

Figure 5. Views of the interior and exterior of Klapmuts Primary School

3.2.4 Prominent hazards noted prior to CRA

- A search of the media revealed that several large-scale fires have destroyed homes in Mandela City, some claiming lives.

- A transect walk of the community after heavy rains illustrated the extent of localised flooding among the dwellings, suggesting that the community is vulnerable to fragile health conditions due to dampness and wet conditions. Indeed, during a morning visit to the settlement an elderly lady was seen warming herself inside her home with an open fire creating thick clouds of smoke within the dwelling.

- The presence of livestock in close proximity to dwellings poses a serious health hazard, while the lack of storm water drainage causes grey water to pool in the settlement creating unhygienic conditions.

3.2.5 Future proposed developments

In 2005 a report generated by the Provincial Government of the Western Cape entitled *Growth Potential of Towns in the Western Cape Study* identified Klapmuts as an area with high need as well as a high potential for development. In response to these recommendations, the Stellenbosch Municipality identified the need for detailed planning
to guide future development in Klapmuts and as a result a Spatial Development Framework for the area was drafted (Stellenbosch Municipality, 2007).

After a recent change in local political representation a new Ward Councillor was appointed to the area, replacing a councillor who had been representing the Klapmuts community for many years. There are also two co-existing community leaders in Mandela City. One has represented the community on behalf of the ANC since 2009 while the other has recently become established as the voice of the opposition, the DA. It appears that there are no other existing community structures in the settlement although it was mentioned that community meetings are held in a public open area of the settlement when deemed necessary.

A large new housing development consisting of more than a thousand state-built houses is in the early stages of development, with key infrastructure under construction at present. According to the Ward Councillor these new houses will primarily accommodate 60% local residents from the waiting lists, 30% of the Klapmuts backyard dwellers, and another 10% emergency housing, i.e. those in dire need due to poor health, disability etc. A Wine Estate development is also underway in the area.

An aerial photograph provided by the Municipality shows how the Mandela City settlement falls inside the planned development area. This will mean that either the settlement will have to be relocated or that it will be upgraded in situ at a later stage. It would appear that the Mandela City community were not consulted about these developments but this could not be verified and falls outside the scope of this survey.
4. Description of Priority Risks, Common Impacts and Responses

During a workshop session, after coming to a common understanding of the terms hazard, risk and vulnerability, the community representatives were given the opportunity to identify what they felt were the most critical hazards facing their community. The following were identified:

- Environmental health problems
- Evictions
- HIV/AIDS
- Floods
- Fire
- Accidents
- Crime

After further discussion three everyday hazards were prioritised by the Mandela City residents. These were, in order of priority, fire, flooding and poor environmental health. These are discussed in detail individually in the section below.

4.1 Environmental Health

Significant environmental health hazards were identified in the community. These included poor toilet facilities, overflowing refuse containers or skips, insufficient water taps, areas of standing water, pig sties, and an abundance of rubbish strewn around. The community-drawn map illustrates the location of the 20 communal toilets with one block of 10 toilet closets on each side of the settlement. During the CRA only 16 toilets were found to be functional. Some houses located near the western toilet block are particularly vulnerable to fluid waste running into and around their dwellings.

Refuse skips are located in the Western, Southwestern, and Eastern parts of the settlement. These were observed to be inadequate in size and as a result overflow with rubbish. This results in people failing to use them to dispose of waste, instead disposing of it indiscriminately around the settlement, while animals, summer winds and winter rains spread discarded rubbish. One resident mentioned that some households now deliberately place their waste outside for the pigs to eat to save them carrying it to the overflowing skips.

There is an operating water tap on each side of the settlement as well as a broken tap at the western toilet. The tap on the western side of the settlement had a blocked drain that contributed to areas of standing water near the tap and along the road to the north of the tap. Additionally, there were four wash basins with functioning water near the eastern toilet and a water tap. Although the drain was functioning properly beneath this tap, standing water in the area was resulting from the overflow and from households discarding their grey water. Generally standing water and rubbish are found in more abundance in the northern and southern parts of the settlement. A large dam located in the southern part of
the settlement is located in the southern part of the settlement. Although the pig sties are located in the southern part of the settlement, pigs can be found wandering in the streets and around the water taps and areas of standing water.

![Figure 7. Community environmental health risk map](image)

The problem of pigs roaming around was not noticed until 2010 when the number of pig farms increased significantly (See time series photographs in appendix). Community members insist that the pig farmers do not care for their pigs properly, leaving them to roam freely, uncontained, feeding themselves on discarded rubbish and defecating throughout the settlement.

Environmental health problems vary in intensity throughout the year. Roaming pigs occurs throughout the year due, reportedly, to on-going neglect by the farmers. The bad smells generated by the pigs, and which the community complain vehemently about, is worse in areas adjacent to the pig sties and in the hot summer months. Accumulation of waste occurs throughout the year because of inadequate waste disposal facilities and collection scheduling, which results in overflowing waste containers. This also encourages indiscriminate disposal of waste by residents. This is worse in the winter months of June and July when people are reluctant to walk through muddy and often flooded streets to the disposal sites on the periphery. The problems associated with overflowing and blocked toilets are worse during the months of October through to March. This is apparently because of the influx of seasonal workers to the settlement during the local agricultural season. Resulting health problems like diarrhea and skin rashes are reportedly worse in the
summer months when flies are attracted to the waste and mosquitoes to the standing water. Households settled closest to the livestock farming areas as well as those settled in the lower-lying parts of the settlement where standing water from toilets and standpipes collect are more exposed to health problems than those living on the flatter surfaces in the middle of the community. Pig feces and pig-sty dirt are washed downhill through the settlement during the rainy winter months spreading the risk of diseases and health problems related to the keeping of livestock to all residents.

Despite being vulnerable to a variety of environmental health risks, the Mandela City dwellers do have some opportunities to adapt to and reduce these risks, such as through the diversion of stagnant water, coordinated community cleaning of communal ablution facilities and the environment in general. This can potentially mitigate many health-related problems, but will require strong leadership and community involvement and buy-in in order to effectively and efficiently coordinate activities and hold defaulters to account.

Although the local clinic is within a short walking distance of the settlement, this service is regarded as inadequate by Mandela City dwellers who attended the workshop. However, these capacity-constraints are recognized by the clinic staff themselves, who agree that they are under-resourced. During the discussion session clinic staff explained that community members often fail to keep appointments which undermines overall clinic efficiency for others. They encouraged parents to bring their children for regular check-ups to ensure that scheduled childhood inoculations and weight-testing is undertaken.

Figure 8. Location and extent of recorded environmental hazards
was paid to the municipal Environmental Health Department subsequent to the Community Risk assessment in order to follow-up on the identified health issues associated with the keeping of livestock adjacent to the settlement. According to Mr Marius Engelbrecht the keeping of livestock within the Klapmuts residential area without proper authorisation as well as the erection of unlawful structures to accommodate the animals (and often herdsman) is a contravention of the Stellenbosch municipal by-law pertaining to the keeping of animals, (PN603/1989) as well as the National Building Regulations. Although the District Environmental Health practitioners monitor the situation they are not authorised to act to resolve it. During routine inspections livestock farmers are repeatedly reminded that animals may only be kept if authorised by the municipal authorities. The Municipality has reportedly received applications for land for small-scale livestock farming in Klapmuts but no such application has yet been approved.

When confronted with the identified environmental health concerns, farmers express the following sentiments:

- It is their cultural right to keep livestock
- They come from other informal settlements where they previously kept livestock
- The Municipality’s lack of intervention has earned them the right to continue

In 2001 ENVIRO Partners, Urban and Environmental Planning Consultants compiled an urban agriculture feasibility study in Klapmuts on behalf of Stellenbosch Municipality. The purpose of the study was to determine whether small scale agriculture was still viable in Klapmuts. Although directed principally at food garden farming, the need for livestock farming was also identified. However, the study created the impression among local residents that the Stellenbosch Municipality was planning to allocate land to farmers.

Regular field inspections have also alerted the Environmental Health Officers to the lack of adequate storm water drainage and the constant indiscriminate disposal of grey water around the settlement, something also noted by participants during the CRA. According to an Environmental Health officer one of the washing bays frequently used by Mandela City residents is connected to the sewerage system and into the storm water system. In addition, polluted water runs into an open furrow and further pollutes the storm water system. Children have been noted to play in this furrow, which is also frequented by the livestock, increasing the risk of contagion from ecoli and other bacteria.

As the animals are being kept on Stellenbosch Municipal land this is a matter that should concern the Municipality. The Stellenbosch Municipality has met with the Cape Winelands District Environmental Health practitioners on several occasions and promised to resolve the situation which poses a significant health threat to Klapmuts residents. In a letter to the municipal Department of Law Enforcement and Disaster Management the Environmental Health Officers clearly identified these issues across the whole of the Klapmuts area:

“...it was found that a large number of livestock are kept on the residential properties in Weltevrede Park, Klapmuts and on the surrounding municipal open spaces...includes goats, sheep, cattle, pigs and poultry. The lack of space and the sizes of the herds are a threat to the health and wellbeing of the whole Klapmuts community.... The keeping of pigs is increasing at an alarming rate... Some of these illegal small scale farmers rent out portions of the land...people
living in these structures do not have any formal services such as fresh water or toilet facilities”.

Part of the problem is that most of the owners of the pigs do not themselves reside in Klapmuts, some coming from as far away as the Cape Metro.

4.2 Fire

Unfortunately no fire data specific to the Mandela City settlement was available, being recorded under the catch-all name of “Klapmuts”. However, residents mentioned two major fires that they could remember which are tabulated below.

<table>
<thead>
<tr>
<th>Date of fire</th>
<th>Cause of fire</th>
<th>Extent of damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 2009</td>
<td>Open fire stove</td>
<td>70 shacks burned, 3 people died</td>
</tr>
<tr>
<td>March 2010</td>
<td>Paraffin stove exploded</td>
<td>29 shacks burned</td>
</tr>
</tbody>
</table>

The Fire Station responsible for responding to Klapmuts is situated in Stellenbosch, roughly 22 kilometres away, resulting in an average response time of 20 minutes due to the distance of the settlement from Stellenbosch. The absence of a nearby fire station increases fire risk in the settlement which has already recorded several deaths from fires as well as large-scale loss of housing during previous fire events (See table above). The distance of the fire station from the settlement prevents timeous response to fires. In addition, the lack of even basic fire fighting infrastructure such as fire hydrants increases fire risk. This means that fires can only be extinguished by a formal and well-equipped fire truck, which nevertheless requires access to an adequate water supply, also a problem given that the community relies on public taps that are often not functioning properly.

A representative from the Stellenbosch Municipality’s Fire Services who attended the discussion session informed the community members who were present that a satellite fire station has been planned for the Klapmuts area which should become operational in 2014.
On investigation, the Chief: Fire Services of the Stellenbosch Municipality, Mr Leon Morta, reported that the Council are in the planning phase of this fire station and the erection of the station is anticipated during the 2013/2014 financial year. The Municipality will have the opportunity to train volunteers or employ local residents as volunteers and firemen. It is hoped that having trained fireman and volunteers within the community will also increase the capacity for fire response activities and thereby reduce the community’s vulnerability to fire. The new housing development project, although only adjacent to Mandela City will nevertheless mean improved availability of water for fire fighting. Community members have previously been constrained in their ability to fight fires having to draw water to fill containers from the communal tap. In future, the nearby installation of fire hydrants will facilitate the extinguishing of fires by community members themselves.

Electrification of the settlement has reduced the risk of fire, with no large fire events having been recorded subsequent to the Eskom installation in 2010. As a prerequisite for the provision of electricity in 2010, the community members were asked to relocate their dwellings in order to create access roads for maintenance crews. Four streets were created along which the power lines were installed in a straight line. This has increased accessibility not only in case of fire but also for other services. Street lighting was simultaneously provided (See Figure 13 below), which has reduced the risk of crime at night.

However, those who are unemployed or under-employed tend to resort to use of other fuel sources for cooking, lighting or warming their dwellings during winter once their free electricity units have been expended. In addition, those who have settled in Mandela City subsequent to 2010, and there are reportedly almost one hundred such households, are not provided with electricity and were observed to be using open fires for cooking. This is driving up the risk of fire for all settlement residents.

The reasons attributed by community members for fires in the settlement are the following:

- Use of candles
- Use of open-flame fires for warmth and cooking
- Use of paraffin stoves
- Drunken behaviour related to the use of all the above
- Illegal electricity connections due either to residents’ inability to afford electricity among those with prepaid meters, especially off-season agricultural workers, but also by those not provided with electricity connections, such as those who have arrived subsequent to the electrification process.

People make use of open fire stoves to warm their shack during winter. This is because fire wood is easily and freely available, and is an alternative to paying for electricity or buying paraffin. These open fire stoves however have been the cause of fires, not only Mandela city, but in many other informal settlements. During several visits to the settlement people living in this area were seen cooking over open flames and commented that they had no alternative as they were unemployed and had no money to buy paraffin.

Illegal connections are prone to short circuits. Illegally connected households do not have access to the main switch located inside the house of the person who connected them and in the case of a fire cannot disconnect supply if the house of the provider is locked.
Although the risk of fire in Mandela City is constant, residents feel more vulnerable over the weekends when there is increased drunken behaviour which leads to many forms of social violence, for example fights in bars, domestic violence etc. This is consistent with findings from other Community Risk Assessment processes. When such fights happen, people are likely to knock stoves or candles over setting ablaze the house/shack. Part-time workers are paid weekly, usually on Fridays, and then start drinking. Inebriated residents are prone to falling asleep, often leaving candles burning and stoves unattended.

There are several infrastructural issues to consider with regard to fire risk. For example, the use of flammable building materials such as cardboard, timber, carpets and zinc sheets and plastic for roofing are major risk drivers being highly flammable. The use of asbestos sheets salvaged for use as roofing material, although offering a hardy and sturdy alternative to residents, is of some concern as due to its identified human health risk.

4.3 Flooding

According to residents, flooding in Mandela City occurs after every heavy rainfall, especially in the winter months of June and July. Due to the natural gradient on which it is built, water tends to run downhill through the settlement, washing dirt from the piggeries located on the upper slope down with it. The densification of the settlement over the last few years has exacerbated these conditions, reducing the area for natural rainwater run-off and causing streams to develop which run between dwellings.

Flood water enters dwellings in its path due to their poor construction or inferior building materials, causing short term internal flooding and longer term damp conditions. This results not only in loss of or damage to people’s personal assets and possessions, but also results in damp and unhealthy conditions, particularly for children and those suffering from poor or fragile health, such as those with Tuberculosis or HIV/AIDS. During a preliminary scoping visit to the settlement during heavy rainfall conditions an elderly woman was seen to bring a burning ‘jerrieblik’ fire (See Figure 9) into her home, which, while certainly generating comforting warmth for the household, which included two infants, also created plumes of suffocating smoke and an increase in fire risk from the open flames.
According to community members the frequency of flooding in Mandela city has been increasing in both frequency and intensity, with water pooling for several days following a heavy rainfall event, particularly in the lowest-lying area on the northern side of the settlement, situated closest to the formal housing area of Klapmuts (See community map indicating the area in Figure 7).

Situated above Mandela City is a large farm dam used for irrigation on the surrounding farm. A municipal reservoir is also located on the periphery, just behind the settlement. The photographs below illustrate the proximity of the dam and reservoir to the community. There is a general perception among Mandela City residents that the large farm irrigation dam and the reservoir situated behind the settlement are responsible for exacerbating flooding in the settlement. The farm dam is said to cause ground water seepage which travels downhill into the settlement, while the reservoir is feared by many who anticipate that it could cause complete inundation of the settlement. There are also fears that the failure of the dam wall could result in a flood disaster. These fears could not be verified during the assessment but will require further investigation and monitoring by the relevant local authority.
Due to the unplanned nature of Mandela City settlement, no permanent infrastructure has been provided. Critically, this includes the lack of a storm water drainage system, which has direct consequences for the community, both in terms of flooding and environmental health hazards.

As many members of the Mandela City community are seasonal workers, the rainy winter months find them increasingly vulnerable to poor living conditions, unable to afford to undertake measures to reinforce their homes against flood risk themselves, although it is unclear what effective measures could be taken due to gradient on which the settlement has been established.

There was evidence of attempts by residents to dig drainage ditches to divert the flow of water away from their dwellings, perhaps with knock-on consequences for those living further down the slope.

The reduction of open areas for the effective runoff of rainwater that has resulted from the increasing density of the settlement in recent years has led to the formation of gullies between dwellings, facilitating the flow of water downhill during rainfall events. Many households were seen to have banked sand up against the walls of their homes on the outside to prevent rain water from entering their homes, while some houses were seen to have raised floors to prevent rain water seepage.

According to the community the flood situation worsens each year, putting more people at risk of flooding than before.
5. Recommendations

Recent developments in the community are indicative of how risks may escalate in the future. Critical resources such as electricity, the provision of ablution facilities, no matter how rudimentary, as well as the presence of a first-class primary school, and are likely to encourage increasing migration to Mandela City. Identified hazards will persist unless the root causes are addressed, requiring community buy-in and involvement.

- There is a need for the provision of a local-area toll-free emergency help-line.
- Additional toilets and regular and more effective maintenance are required but must ensure increased responsibility and buy-in from the community.
- Improved waste disposal practices, including the provision of larger and additional waste containers, more frequent refuse collection services, together with awareness-raising and incentives for residents to better utilize these services, has the potential to reduce current health risks.
- Local environmental health officials should collaborate with the primary health clinic, local authority sectors and the community to address the health problems that have been identified in Mandela City - the community needs to take more responsibility for their own health and safety.
- Drainage of the settlement must be improved - Standing water creates unhealthy conditions in which disease proliferates.
- There is a perception among the Mandela City community that the farm dam and the municipal reservoir constitute a flood hazard - this issue needs to be addressed by the relevant stakeholders/role-players and the community - the building of a mini water-spillage diversion dyke is suggested in order to redirect excess water away from the settlement, in particular protecting dwellings located close to the reservoir.
- The Klapmuts Primary School headmaster insists that community members should take more responsibility for their children’s’ education by getting more involved to ensure better performance of the children. Although current government policy promotes home-language instruction, community members want English as the medium of instruction. Communication from the school is reportedly in Afrikaans, denying parents the opportunity to become more involved in the activities of their children as they cannot read Afrikaans. This will be considered by the school in future.
- Failure to enforce existing regulations regarding the keeping of livestock must be addressed post-haste. It was suggested that the Department of Agriculture should be approached to provide training and/or support with regard to better livestock management as this has implications for the viability of other locally-based commercial pig-farmers in terms of disease control.
- Environmental Health, the health services and local commercial farmers should collaborate to develop education campaigns to promote community awareness on public health issues with regard to the farming of pigs.
- It is important to identify and build on existing strengths. The South African Police Service (SAPS) currently plays a key role in communication between the residents of Mandela city and other emergency services. Working on a twenty-four hour basis, it is located near the community while other services like the ambulance and fire services are stationed in Stellenbosch, some 20km from Mandela city. (During the community
workshop it became evident that the Police station telephone number was the only one
known to the community).
- The National Disaster Management Centre issued regulations in January 2011 for the
establishment of volunteer’s corps at municipal level. It is therefore incumbent upon
the Stellenbosch Municipality to adopt the regulation for the establishment of such
corps and ensure its implementation. Establishing a volunteer corps trained in fire
fighting and first aid will ensure that the community themselves can be first responders
in emergencies. In the interim, the Stellenbosch Municipality can consider stationing a
mobile fire trailer in Mandela City such as the one pictured in Figure 18 below which can
assist with fighting fires in the area. It can be stored in a container as a safety
precaution.

![Figure 18. Example of proposed fire trailer in container](image)

6. Concluding remarks

According to the latest census data available (2001), the Klapmuts area has experienced an
unprecedented population growth rate of around 32%, from 1 515 in 1996 to around 4 000
in 2001. This growth appears to have continued unabated due both to natural internal
growth, as well as the influx of local dispossessed farm workers and migrants from other
areas, including the recent arrival of people from as far afield as the Horn of Africa.

The levels of unemployment and poverty among the Klapmuts community continue to rise.
Poor levels of education and skills development have denied many local residents the
chance of semi-skilled and better paid work that could potentially uplift them from their
current level of poverty. The critical need for skills development was highlighted in
conversation with many local role players while undertaking this assessment, with youth
development a key issue, particularly in light of the reportedly high rate of drug and alcohol
abuse in the area.

In addition to the new proposed fire station in Klapmuts, it is also the intention of the
Stellenbosch Municipality to accommodate a Disaster Management unit adjacent to the fire
station in Klapmuts. As training is mandatory in terms of the Disaster Management Act 57
of 2005 this provides an opportunity for community members to receive training in various
skills so that the location of a satellite Disaster management centre in close proximity will
also mean that the community can receive emergency response training. An educated community can respond more effectively to emergencies in order to save lives and property.

The continued and unsustainable growth of the Mandela City community has contributed to the increasing hazards that the settlement dwellers are living with on a daily basis identified during the Community Risk Assessment conducted there in July 2012. Many of these hazards are commonly associated with living in poorly provided and under-capacitated environments. They are exacerbated by poor levels of community cohesion, driven by the lack of a representative leadership structure to speak on behalf of this marginalised, largely invisible community. This was made starkly evident by the absence of local political representation during the assessment process, despite extensive efforts to include key local role players and, though regrettable, was simultaneously telling.

This brief risk assessment has highlighted some areas for small-scale and immediate interventions that can markedly improve the lives of those living in Mandela City. However, it begs a continued conversation with external stakeholders and role players in order to deliver longer term solutions to developmental problems in the settlement. It is hoped that this brief process and resulting report will contribute to further conversations between the community and external partners in the future. The transparent communication of findings to the Mandela City community, preferably in their mother tongue, is essential in order to build and strengthen their trust and to confirm the value of their inputs and to create a sense of hope for their future in Klapmuts.

Patricia Zweig
Disaster Mitigation for Sustainable Livelihoods Programme
University of Stellenbosch
September 2012
Graphic representation of factors influencing vulnerability of Mandela City Community

Root Causes

- Limited access to:
  - Safe Land
  - Information regarding environmental health aspects
  - Structures

- Ideologies
  - Political systems
  - Economic systems

Dynamic Pressures

- Lack of
  - Institutions
  - Training
  - Skills

- Macro-forces
  - Population pressure on land
  - Rapid Population Change

Unsafe Conditions

- Physical environment
  - Dangerous locations
  - Severely overcrowded informal settlement

- Local Economy
  - Low income level
  - Livelihoods at risk
  - Unable to replace assets after disastrous incidents

- Social relations
  - Lack of institutions

- Public actions and institutions
  - Lack of political wheel for development
  - Poor relationship among Authorities and Community

Disaster

- Hazards
  - Floods
  - Environmental health risk
  - Fire
  - Crime
  - HIV
  - Accidents

Graphic created by Anna-Maria Niipare, City of Windhoek Disaster Management Field Officer (short course participant)
7. References

Books, journals and reports


Interviews

1. Ms Sophie Louw , Councillor of Ward 18
2. Local residents and community leaders
3. Mr Frans, Klapmuts Primary School Headmaster
4. Mr JC Anthony, previous Councillor of Ward 18
5. Municipal Departments:
   - Human Settlements
   - Housing
   - Disaster Management
   - Environmental Health
6. South African Police Services, Klapmuts
7. Sister Esau, Klapmuts Clinic
8. Appendices

8.1. Appendix 1: Time Series Photographs of Mandela City
   - 2005
   - 2009
   - 2011

8.2. Appendix 2: Mandela City Questionnaire
Questions for Mandela City dwellers

1. **Period of residence and household mobility**
   1.1 How long have you lived here? 
   1.2 Where did you live before? 
   1.3 How many people live in your household? 
   1.4 Is this constant or does this change sometimes? 
   1.5 If it changes sometimes can you explain why?

2. **Household facilities**
   2.1 How many rooms do you have?  
   2.2 Do you have electricity?  
   2.3 Is the kitchen a separate room?  
   2.4 What do you cook on?  
   2.5 Do you have a TV?  
   2.6 Do you have a radio?  
   2.7 Do you have a fridge?

3. **Age profile of household members**

<table>
<thead>
<tr>
<th>Age group</th>
<th>How many?</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>1-5</td>
</tr>
<tr>
<td>3.2</td>
<td>6-13</td>
</tr>
<tr>
<td>3.3</td>
<td>14-21</td>
</tr>
<tr>
<td>3.4</td>
<td>22-50</td>
</tr>
<tr>
<td>3.5</td>
<td>51-above</td>
</tr>
</tbody>
</table>

4. **Head of household**
   4.1 Male  
   4.2 Female

5. **Household Income**

   Please state how many members of your household have this income source.
   Add description of grant type or employment type i.e. farm work, construction, municipal job etc...

<table>
<thead>
<tr>
<th>Employment status/Income source</th>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Government grant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2 Unemployed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3 Part-time employment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.4 Seasonal work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5 Full-time</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. **Regularity of links with Stellenbosch/Paarl**
   How often do you visit these towns

<table>
<thead>
<tr>
<th></th>
<th>Stellenbosch</th>
<th>Paarl</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Seldom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.2 One a month</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.3 One a week</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.4 More than once a week</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.5 Every day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.6 Other (Specify below)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. **Purpose of visits to Stellenbosch or Paarl**
   Please explain your main reasons for visiting these towns using table below.
   (Tick as many as appropriate)

<table>
<thead>
<tr>
<th></th>
<th>Stellenbosch</th>
<th>Paarl</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 Employment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.2 Shopping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.3 Health services – hospitals etc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.4 Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.5 Other: (Specify below)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. **Crime in Mandela City**
   What types of crime occur often in Mandela City?

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
</table>

When do they occur most often?

<table>
<thead>
<tr>
<th>Months of year</th>
<th>Days of week</th>
<th>Times of day</th>
</tr>
</thead>
</table>

Why do you think they happen?

…………………………………………………………………………………………………………………………………………………

…………………………………………………………………………………………………………………………………………………

Who is most affected by these crimes?

…………………………………………………………………………………………………………………………………………………

…………………………………………………………………………………………………………………………………………………

…………………………………………………………………………………………………………………………………………………
Who are the key role players in fighting crime?

9. **Quality of life improvements**

What could improve life in Mandela City?

10. **Origin of householders**

10.1 Have you lived in other informal settlements before?

| Yes | No |

10.2 If yes, where and for how long?

10.3 If yes, why did you leave?

10.4 Were you born in the Cape Winelands?

| Yes | No |

10.5 If not, where were you born?

10.6 **When** did you move to Mandela City?

10.7 Please explain why you moved to Mandela City

11. **Household hazard profile**

11.1 Based on your own experience what would you consider the most hazardous aspect of living in Mandela City?

11.2

11.3

11.4
11.2 Please state whether you have personally experienced any of these hazards.

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Describe more detail (when/what happened etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Fire</td>
<td></td>
</tr>
<tr>
<td>4.2 Flood</td>
<td></td>
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<tr>
<td>4.3 Crime</td>
<td></td>
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<tr>
<td>4.4 Poor health because of living conditions</td>
<td></td>
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<tr>
<td>4.5 Eviction</td>
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</tbody>
</table>

11.3 How did this affect you and how did you cope?

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12. **Key role players for residents of Mandela City**
Please explain who in your opinion are the critical/key stakeholders in Klapmut/Mandela City i.e. ones the community turns to in an emergency etc.

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13. **Key moments in the history of Mandela City**
Please mention any landmark moments/developments in Mandela City’s history. 
(If possible please supply the year in which these events/developments occurred).

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