Barriers to risk reduction: Dontse Yakhe, South Africa

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Abstract

Purpose – The purpose of this paper is to identify hazard risks and factors impeding the implementation of disaster risk management policies and strategies in Dontse Yakhe in Hout Bay, South Africa.

Design/methodology/approach – A case study approach was selected for this research. Interviews were conducted with community leaders and other relevant government and civil society stakeholders. Insights and perceptions of Dontse Yakhe residents were obtained from a focus group interview. Secondary data sources were reviewed and field observations made.

Findings – The findings reveal a number of key risks and a complex web of geographical, political, social and environmental factors, and stakeholder interactions, prioritisations and decision making that has created barriers to the implementation of the aims and objectives of disaster risk management policies and strategies in Dontse Yakhe.

Originality/value – The contribution of the research is that it provides insight into the complex factors that are stalling development and infrastructure provision, and implementation of risk reduction strategies, in Dontse Yakhe as outlined in disaster risk management policies and strategies, demonstrating a gap between policy rhetoric and practice.

Keywords South Africa, Disaster risk reduction, Barriers to risk reduction, Dontse Yakhe, Imizamo Yethu, Informal settlement

Paper type Research paper

Introduction

Informal settlements are, by their very nature, characterised by overcrowding, a lack of formal housing and service delivery; they are also generally home to the poorest and most marginalised urban populations – factors that contribute to a heightened disaster vulnerability of informal settlement residents (Murray, 2009; Pharoah, 2009). In South Africa a legislative and policy framework seeks to manage disaster risks, including those of the country's informal settlements. The South African Disaster Management Act (DMA) of 2002 (Republic of South Africa, 2003), which sets the national disaster management policy framework, has international recognition for promoting disaster risk reduction as its strategy (Pelling and Holloway, 2006). The South African National Disaster Management Framework (NDMF) specifically targets community-based risk assessments as a priority for reducing vulnerability, and increasing coping capacity, of "at risk" areas such as informal settlements (Republic of South Africa, 2005). The Municipal Systems Act of 2000 includes specific mechanisms to ensure that disaster risk reduction is integrated into development planning of these areas (Reid and Murwira, 2005).

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Despite the intentions of the DMA and NDMF, a lack of human and financial resources has resulted in the unmet objectives of disaster mitigation policies in South African informal settlements (Roth and Becker, 2011). The failure of authorities to fully realise disaster mitigation policies, coupled with chronic vulnerability of the residents has resulted in a risk environment in which even minor hazard events have devastating effects on households and have the potential to create entirely new hazards (Murray, 2009; Pharoah, 2009). This appears to be the case in Imizamo Yethu, an informal settlement in Hout Bay, Cape Town, where previous research (e.g. Harte *et al.*, 2006, 2009; Morrissey and Taylor, 2006; Rosenberg, 2013; Roth, 2011; Roth and Becker, 2011) on disaster management highlighted community vulnerability and risk, especially to fire hazard. This research focuses on Dontse Yakhe, an informal shack area within Imizamo Yethu that is at risk from a number of hazards. The research seeks to identify hazard risks and explore the extent to which disaster risk reduction policies and strategies have been integrated into planning and development processes or not. The research reported here therefore aims to identify hazard risks and factors impeding the implementation of disaster risk management policies and strategies in Dontse Yakhe. The results reveal a complex web of stakeholder interactions. In addition there are various geographical, political, social and environmental factors and community dynamics, which have created barriers to the community realising the aims and objectives of disaster management policies.

Growth of informal settlements in South Africa

Rapid growth in South African informal settlements is a feature of urbanisation as well as a relic of Apartheid policies and practices, and poses a significant challenge to disaster risk management in these communities. During the Apartheid years, the Native Urban Areas Act No. 21 of 1923 and its subsequent amendments were used to regulate the flow of black Africans into urban areas, forcing them to live in the former so-called "independent homelands", systemically under-developed territories set aside by the Apartheid government for black South Africans (Barbour and Gillespie, 2007). In the years following the abolition of these influx control measures, rural to urban migration between the less-developed Eastern Cape Province (in which the former Transkei and Ciskei independent homelands were located) to Cape Town saw the rapid growth in the population of Cape Town and the proliferation of informal settlements in and around the city (City of Cape Town (CoCT) in Pharoah, 2009). While most informal settlements are located on the urban peripheries or in and around areas of low-cost housing, some have developed in middle- and upper-class neighbourhoods, such as Hout Bay (see Ballard, 2004).

The scale and rapid spread of informal settlements has resulted in the inability of governments to keep pace with housing delivery, and has meant that many of these settlements lack planning oversight, basic infrastructure and service delivery mechanisms. This has pressured the government to undertake "in-situ upgrades" of housing, infrastructure and services in many of the rapidly growing informal settlements in and around the city (Huchzermeyer, 2009; Shortt and Hammett, 2013). In-situ upgrading is "the formal upgrading of an informal settlement in its current location with or without the need for de-densification [relocation of residents]" (CoCT, 2013a, p. 3). In-situ upgrading has been used to formalise large sections of Imizamo Yethu, not including Dontse Yakhe, which is largely located outside the official Imizamo Yethu boundaries. Other initiatives used by the CoCT for upgrading informal settlements include Reblocking; Upgrading of Informal Settlement Programme (UISP); and Incremental Development Area (IDA)[1].

In theory, in terms of disaster risk, such upgrading has the potential to increase resilience by providing more hazard-resistant housing, physical accessibility around structures, services that may alleviate risky behaviours (e.g. illegal electricity access) and/or facilitate an improved response during incidents. Indeed, government-subsidised low-cost housing programmes in South Africa (e.g. the Reconstruction and Development Programme and the more recent Breaking New Ground) aim to provide improved quality of life to the poor in sustainable human settlements (Govender *et al.*, 2011). These public housing neighbourhoods often serve to perpetuate marginalisation, however, as they remain as racially segregated as their Apartheid-era predecessors (Seekings *et al.*, 2010). Furthermore, there is evidence that they might contribute to the risks of vulnerable residents by exposing them to more hazards (Benjamin, 2008; Govender *et al.*, 2011; Pharoah, 2014).

In summary, the nature of informal settlement development, as a result of past and present policies, contributes to the disaster risk profiles of communities as reflected by population growth, density, quality of housing and access to services and infrastructure.

The case study: Imizamo Yethu and Dontse Yakhe

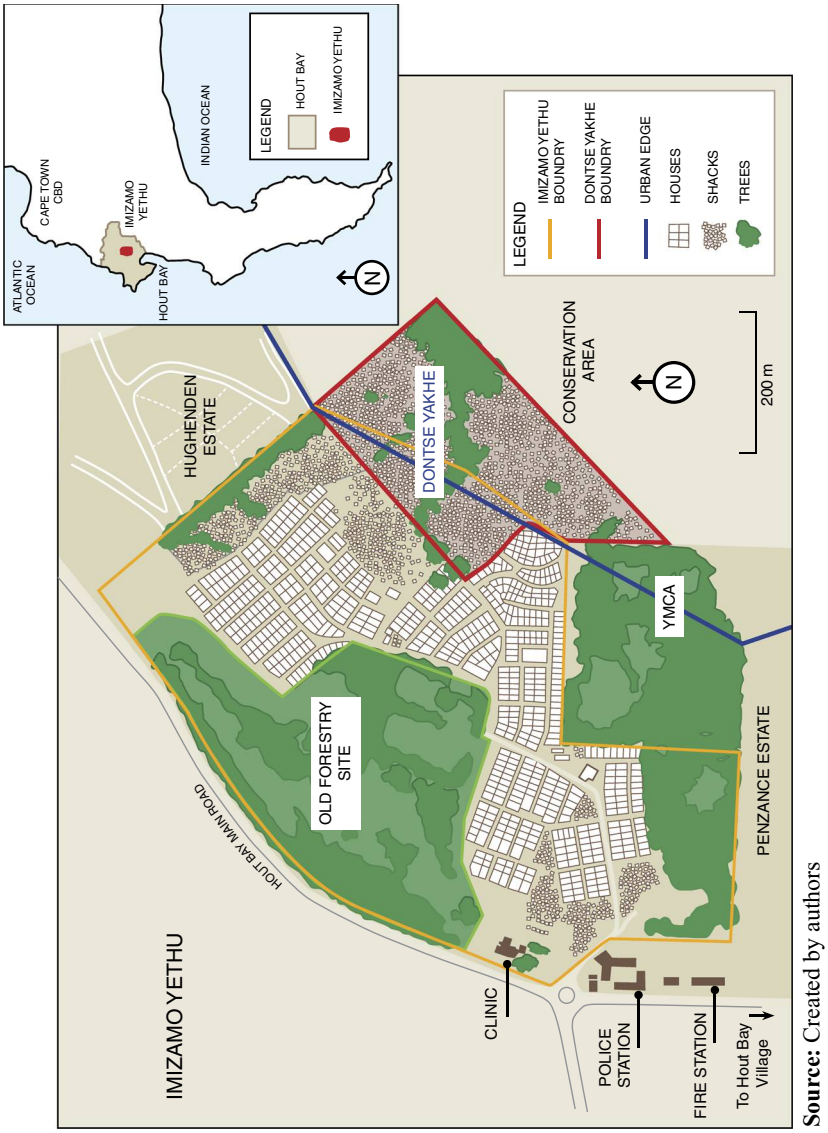
The expansion of informal settlements in Hout Bay in the late 1980s, in particular, the rapid growth of Princess Bush on the dunes behind the Hout Bay beach, led to pressure on the Apartheid government to find suitable land to address the "squatter problem" in Hout Bay (Gawith, 1996). Following a land audit of all government land in Hout Bay in 1990, the Western Cape Regional Services Council forestry site was identified as the most suitable site for development of an informal township (Figure 1). Consequently, an area of 34 ha was designated for the development of the settlement of which 18 ha would be zoned for residential development and 16 ha for community facilities. This site would need to accommodate approximately 450 households with an estimated population of 3,000 people. The establishment of Imizamo Yethu – which means "through our collective struggle" – signalled a radical shift in approach to addressing the needs of homeless and landless people living in a historically designated "white[2]" area in South Africa.

Imizamo Yethu is bordered by Hout Bay Main Road to the west, Hughendon Estate to the north, Table Mountain National Park to the east and Penzance Estate and YMCA to the southwest (Figure 1). Imizamo Yethu itself is informally divided into two neighbourhoods. The area of formal housing within the Imizamo Yethu boundary is called Mandela Park, and the area of informal housing located on the steep and rocky terrain against Skoorsteenkop Mountain on the east side of the Imizamo Yethu site is known as Dontse Yakhe (Barbour and Gillespie, 2007).

The planning and development of Imizamo Yethu has been an extremely slow process due to a variety of factors including changes in the government department responsible for the development of the settlement, lack of clarity regarding how to accommodate rapid influx of people to the site, lack of government support for housing and a series of fires in the settlement including the devastating fire of February 2004. This fire in particular, resulted in several families constructing shacks in the area above the formal boundaries of the Imizamo Yethu settlement in Dontse Yakhe.

Dontse Yakhe – the community

The relocation of some displaced residents to Dontse Yakhe was intended as a temporary measure until the area affected by the fire was formalised, and new land was found for the remaining displaced residents. Few of the displaced households received accommodation in a subsequent housing development in Imizamo Yethu led by an Irish



Source: Created by authors

Figure 1.
Map showing location of Dontse Yakhe

philanthropist and managed under the Niall Mellon Township Trust and over the years, the Dontse Yakhe population has further swelled with newcomers to the community. There are even claims that some owners of brick and block houses in Imizamo Yethu rent out their houses for income while they themselves live in shacks in Dontse Yakhe (Barbour and Gillespie, 2007). Consequently, Dontse Yakhe has continued to grow in size and population, despite its location on a steep slope with difficult terrain, and very rocky and clayey soils encroaching on the Table Mountain National Park, and a critical lack of services in the area.

Disaster risk reduction in informal settlements

Much has been written about urban risk in Africa, including South Africa (e.g. Bloemertz *et al.*, 2012; Holloway and Roomaney, 2008; Pelling and Wisner, 2012). For example, Pelling and Wisner (2012, p. 4) indicate that much of the rapid growth in Africa is occurring in already marginalised urban populations by rural poor, thus creating "hotspots of disaster risk". Holloway and Roomaney (2008) state that informal settlement residents are at increased risk of extreme weather and associated flooding, as well as informal settlement fires. Disaster risk reduction includes multi-sectoral, top-down and bottom-up approaches that utilise both specialist, professional expertise and local knowledge (Wisner *et al.*, 2012) to prevent and minimise disaster risks. Holloway and Roomaney (2008, p. 17) define disaster risk in informal settlements 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". They continue by defining disaster risk reduction in informal settlements as "all policies, actions and initiatives that minimise vulnerabilities and disaster risks in informal settlements, including those that incorporate prevention, mitigation and preparedness". South Africa has promulgated policies and legislation and produced an impressive set of frameworks, strategies and plans to address disaster risk management.

Disaster Management legislation and policies in South Africa

The DMA No. 57 of 2002 (Republic of South Africa, 2003) is the key disaster management legislative framework in South Africa. DMA provides an integrated and co-ordinated approach that focuses on preventing or reducing the risk of disasters, mitigating their severity, emergency preparedness, rapid and effective response and post-disaster recovery. The NDMF (Republic of South Africa, 2005) guides the DMA, and is the legal instrument specified by the DMA to address disaster management in South Africa. Key performance areas of the NDMF include:

- integrated institutional capacity for disaster risk management;
- disaster risk assessment;
- disaster risk reduction; and
- response and recovery (Republic of South Africa, 2005).

The DMA and the NDMF require provincial and municipal authorities to develop their own disaster management frameworks (Republic of South Africa, 2005). Under the DMA, local municipalities are responsible for disaster management and risk reduction planning. Local municipalities have several critical obligations related to disaster risk reduction, including:

- integrating disaster risk reduction into development planning;
- identifying communities at risk;

- undertaking disaster risk assessments; and
- providing for appropriate prevention, risk reduction and mitigation strategies (CoCT, 2012).

In the Western Cape Province, in which Cape Town is located, the Western Cape Disaster Management Framework (WCDMF) (Province of Western Cape, 2007) sets out the disaster risk management policies for that province. The CoCT (2012) Municipal Disaster Risk Management Plan (MDRMP) establishes the framework for implementation of the DMA in Cape Town municipal area. It also sets out the organisational and institutional framework for disaster management arrangements within the CoCT area. The MDRMP aims to "prevent disasters from occurring and to lessen the impact of those hazards that cannot be avoided" through continually implementing and maintaining the preventative, risk reduction and preparedness elements of the MDRMP (CoCT, 2012, p. 4). The primary objective of the MDRMP is "to prevent the occurrence of emergencies and disasters that threaten life, property, the environment or economic activity in the City of Cape Town" (CoCT, 2012, p. 10). Disaster risk reduction and preparedness phases in the MDRMP include regular risk assessments and overseeing "the formulation of plans and projects to reduce disaster risk, including the integration with CoCT IDP [Integrated Development Plan] initiatives" (CoCT, 2012, p. 11). Establishing disaster prevention/risk reduction programmes in vulnerable communities has been identified as a critical disaster management issue on the MDRMP and the CoCT IDP. The DMA recognises that "despite ongoing progress to extend essential services to poor urban and rural communities, large numbers of people live in conditions of chronic disaster vulnerability" (Republic of South Africa, 2005).

Methods

In order to achieve the overall aims, this research addressed the following questions:

RQ1. What are the hazard risks to the Dontse Yakhe community?

RQ2. What factors are either promoting or reducing progress towards realising broader disaster management policy aims and objectives?

The research used a multiple-subject, exploratory case study approach, because of the complexity of the topic and the involvement of multiple stakeholders in disaster risk management in Dontse Yakhe. Yin (2009) describes this approach as an investigation of "a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident". Dontse Yakhe was selected as the case study site because of the ongoing risks in this community, with little evidence of interventions to minimise the risks. The research seeks to understand the nature of these risks and the challenges to implementing disaster management policies and strategies in the community.

Data were collected from multiple sources including:

- a review of correspondence, minutes of meetings and planning documents;
- unstructured interviews with three leaders representing community groups within Imizamo Yethu and Dontse Yakhe, one representative from Cape Town City Council Planning Department, three representatives from Disaster Management Cape Town (DMCT), one representative from SANParks and one representative from the Hout Bay Residents' Association (HBRA);

- a focus group meeting with Dontse Yakhe community members; and
- field observations.

Community leaders and representatives from the various organisations were selected on the basis of their assumed knowledge of planning proposals in the settlement and involvement with disaster management in Dontse Yakhe according to their professional and community roles. Other participants in the study were selected for their expertise in their field (i.e. representatives from CoCT Planning Department and DMCT), representation and leaders of local community groups in Imizamo Yethu/ Dontse Yakhe and Hout Bay. In total, 12 residents from Dontse Yakhe were invited by opportunistic sampling to participate in a focus group discussion through one of the community representatives who also acted as an interpreter.

The focus group was conducted with a diverse group of residents living in the area. Consistent with research aims, a group discussion was fostered by the researcher by asking participants to comment on the hazard risks in their community and how these were being addressed. Responses were noted in the field by the researchers, who later developed a written account of the focus group proceedings. A similar approach was adopted for the unstructured interviews.

This research adopted a qualitative approach to data collection and analysis. The data analysis consisted of the researchers reviewing content across all sources to subjectively identify and code recurrent themes and the range and consistency of responses within themes. Collection of data from multiple sources (interviews, focus group, observations and a review of relevant documentation) allowed for data triangulation. Data triangulation addresses any potential problems of construct validity "because the multiple sources of evidence essentially provide multiple measures of the same phenomenon" (Yin, 2009, pp. 116-117).

Limitations of the data collection and analysis methods used in this study are recognised. It was difficult to arrange interviews with representatives of certain authorities because they were either too busy or reluctant to engage on plans for Dontse Yakhe – suggestive of the controversial nature of topic. In addition, the focus group was conducted in the early afternoon on a Monday, a time that would have excluded many Dontse Yakhe residents who were working. Subjective classification of data are also recognised as a limitation of data analysis. Collecting evidence from multiple sources and employing data triangulation were ways in which the researchers attempted to address these issues with data collection and analysis.

Findings and discussion

Hazard risks in Dontse Yakhe are first contextualised in broad terms followed by discussions of the complexities in progressing risk reduction and applying disaster policies and strategies.

Identifying a community at risk: lack of clarity of Dontse Yakhe population numbers

There are no official demographic statistics for the Dontse Yakhe community. The present research therefore draws from the most recent, 2011, Statistics South Africa census data for Imizamo Yethu (including Dontse Yakhe). The data indicate a population with low education levels (31 per cent of people aged 20 years and older have completed Grade 12 or higher), a high unemployment rate (33.46 per cent) and low

income levels (79 per cent of households had a monthly income of ZAR3,200 (approximately US$360) or less (CoCT, 2013b).

The 2011 census data recorded the Imizamo Yethu population (including Dontse Yakhe) to be 15,538. Furthermore, they recorded 6,009 households in Imizamo Yethu, with an average household size of 2.59 (CoCT, 2013b). However, the average household size of focus group participants was almost double at 4.8 people per household. The CoCT representative (pers. comm., 17 June 2014) concurred with a population estimate of 16,000. A community leader estimated that the total population was closer to 25,000 people (Community leader 1, pers. comm., 18 June 2014) while a focus group participant estimated that the Dontse Yakhe population alone was approximately 20,000. A representative from the HBRA (pers. comm., 19 June 2014) said they estimate that the population is approximately 40,000 based a count of shacks on aerial photography and an average household size of 3.5 people per household. The lack of clarity about the total number of residents in Imizamo Yethu and Dontse Yakhe specifically in itself is a barrier to furthering disaster risk reduction strategies and future development planning. It also fuels mistrust between different stakeholder groups seeking solutions to the overcrowding and housing crisis in the community.

Identifying the risks in Dontse Yakhe

Pelling and Wisner (2012) suggest that risk identification is the first step for engaging with disaster risk reduction. Participants were therefore asked to identify what they perceived to be the risks to Dontse Yakhe residents. They identified fire, flooding from a pipeline, cholera, storm damage and soil movement during heavy rainfall (Table I), with fire identified as the main disaster risk by all participants. Two participants described disaster risk in Dontse Yakhe as "a ticking time-bomb" (Community leader 1, pers. comm., 17 June 2014) and "a powder keg waiting to explode" (HBRA representative, pers. comm., 19 June 2014).

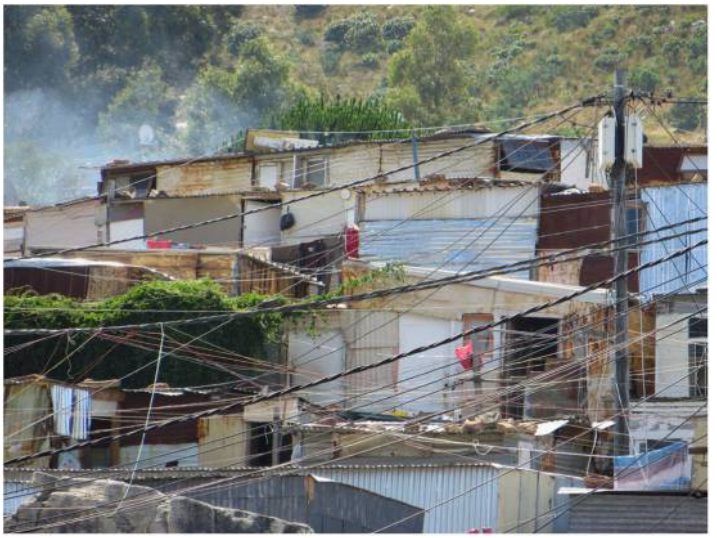
A community leader reported three fires in Dontse Yakhe between March and June 2014, resulting in one fatality and 50 destroyed shacks. All of these fires occurred at night and at least one was caused by a candle after the person's electricity was cut (Community leader 1, pers. comm., 18 June 2014). Focus group participants confirmed this and said that the fire risk increases during the winter months because there is no (formal) electricity supply in Dontse Yakhe so people rely on paraffin and candles for heating and lighting. Focus group participants also said that the lack of electricity and water were the main contributors to fires in Dontse Yakhe and that access to electricity would reduce their reliance on paraffin stoves and candles and therefore reduce their risk to fire. A participant made the following observation: "It is difficult for households to reduce risk if they have to rely on paraffin, candles and can't afford to pay for electricity from Imizamo Yethu".

For Dontse Yakhe residents, the only access to electricity is to buy it from a household in Imizamo Yethu that is formally connected to the electricity grid. Many Dontse Yakhe residents access electricity this way through illegal electricity connections known as "spaghetti wires" because the wires appear as jumbled as cooked spaghetti (Plate 1). Access for fire trucks to some areas of Dontse Yakhe is hindered, in part, by the illegal electricity connections, as well as no road access, the density of the shacks in Dontse Yakhe and the lack of formal footpaths between shacks. A focus group participant said that it is difficult for fire trucks to reach Dontse Yakhe because of the spaghetti wires and that "people get angry with them [fire fighters] if they cut their electricity connections' ". Indeed, there have been cases when emergency

Categories[a]	Factors identified by stakeholders as increasing risk to hazards in Dontse Yakhe	Hazards
Socio-political	Overcrowding	Fire, health, flooding from pipeline
	Inadequate measures to prevent community expansion	Fire, health
	Community politics obstructing risk reduction and development in Imizamo Yethu	All hazards
	No upgrading plans for Dontse Yakhe	All hazards
Economic	High rate of poverty and unemployment	All hazards
Environment	Fynbos vegetation in Table Mountain National Park	Fire
	Slope of Skoorsteenkop Mountain	Fire, storm, soil movement
	Stands of pine and eucalyptus trees	Fire
	Reduced water pressure due to site of Dontse Yakhe	Fire, health
Physical	Housing	All hazards
	No (legal) electricity connections	Fire
	Paraffin and candles used for heating, cooking and lighting	Fire
	Water pressure insufficient for toilets/taps	Fire, health
	Illegal electricity wires block fire truck access and create fire and electrocution risk	Fire
	Insufficient space between structures makes fighting fires and escaping from fires difficult	Fire
	No roads in Dontse Yakhe	Fire
	No drainage/storm water and flood prevention	Storm
	Structures built over high-pressure water pipeline	Flooding from pipeline

Note: [a]Categories adapted from DRMF
Source: Adapted from Republic of South Africa (2005)

Table I.
Identifying risk in Dontse Yakhe



Source: Created by authors

Plate 1.
Spaghetti wire

services vehicles have been stoned by residents when a spaghetti wire has been "cut" by the fire trucks that attempt to respond to fires in the area (CoCT representative, pers. comm., 15 May 2014; Roth, 2011). The water tankers cannot reach the top of the settlement where the reservoir is located, so the fire trucks have to keep travelling down to the lower section of the community to refill with water.

The CoCT have installed some water pipelines and toilets in Dontse Yakhe, but water pressure is very low due to the steepness of the slope (DMCT representatives, pers. comm., 19 June 2014). As a result, community members have filled the toilet bowls with soil and removed the doors of the communal toilets to eliminate the filth and smell created by people using the toilets because water pressure is too low for the toilets to flush. The absence of proper sanitation increases health risks in Dontse Yakhe as people use the surrounding bushes for ablutions. Vandals have also removed the taps from the few communal water points, further impeding fire response. Lack of access to water was identified by focus group participants as increasing fire and health risk in the community.

Representatives from DMCT and the HBRA also spoke about the significant risk of large water pipes bursting. The two high-pressure pipes of approximately 750 mm in diameter run from the reservoir above Imizamo Yethu/Dontse Yakhe to Hout Bay. One pipe is located at the top of the Dontse Yakhe and is marked by a pipe track (Plate 2). Over the years the CoCT and Imizamo Yethu community have managed to keep Dontse Yakhe from expanding over this pipe track (CoCT representative, pers. comm., 17 June 2014). The other pipe runs down the mountain along the border of Dontse Yakhe and Hughenden estate (see Figure 1). Approximately 50 shacks have been built above this pipe. DMCT and the HBRA see the construction of shacks over the pipeline as a major risk to Dontse Yakhe residents (DMCT representatives, pers. comm., 19 June 2014; HBRA representative, pers. comm., 19 June 2014), although focus group participants did not identify the pipe as a risk to the community.

Environmental factors also increase the risk of Dontse Yakhe residents, particularly to fire and land movement following heavy rainfalls. Dontse Yakhe has a gradient

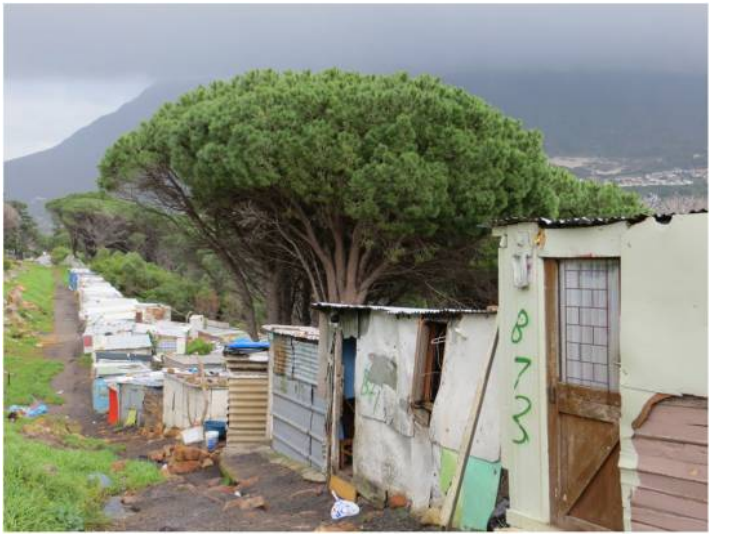


Plate 2.
Pipe track at top of Dontse Yakhe

Source: Created by authors

steeper than 1:5 with seasonally wet soil and high clay content (Chand Environmental Consulting, 2008). Peninsula Granite Fynbos is endemic to the Cape Town area and would have covered the lower slopes of Skoorsteenkop before the development of Imizamo Yethu (Chand Environmental Consulting, 2008; CoCT, 2011). All the fynbos has been cleared on the Imizamo Yethu-Dontse Yakhe site, but still occurs on the Table Mountain National Park to the east and south of the site. Fynbos is highly flammable indigenous vegetation, as are the stands of alien stone pine, eucalypts and Monterey pines in and around the Dontse Yakhe site (Chand Environmental Consulting, 2008, Van Wilgen, 2012).

The socio-economic characteristics of the community, coupled with the risk factors identified above, suggest that Dontse Yakhe residents are vulnerable to a number of hazards, and a community for whom minor hazard events are likely to have significant impacts on individual households (Pharoah, 2009).

Barriers to risk reduction in Dontse Yakhe

Current disaster risk management legislation in South Africa promotes both pro-active (i.e. preventing or mitigating disasters) and re-active (i.e. response, relief and reconstruction) components. A key element of MDRMP is disaster risk reduction (i.e. pro-active) – the focus of the present paper. The MDRMP sets out disaster risk reduction as using a multi-disciplinary, integrated and co-ordinated approach, including input from a variety of government departments, such as Human Settlements, Community Services and Spatial Planning and Urban Design (CoCT, 2012) as well as the relevant community. There is no evidence of formal disaster risk reduction assessment and integration into future development planning for the Dontse Yakhe community, however, highlighting a re-active rather than a pro-active focus to disaster management.

Community politics and upgrade planning

The researchers recognise the complexity of settlement upgrading (see Fieuw, 2011; Huchzermeyer, 2009, 2010) and an emerging body of literature, which suggests that informal settlement upgrading may not reduce risk of these vulnerable communities, as suggested in the DMA and NDMF, because residents continue to be exposed to a range of hazards (see Benjamin, 2008; Govender *et al.*, 2011; Pharoah, 2014). In order to address the aim of investigating risk reduction strategies in Dontse Yakhe, however, the paper must include the following discussion on the CoCT's official informal settlement upgrading initiatives because of their impacts on risk in the Dontse Yakhe community.

CoCT has evaluated several UISP options to upgrade Imizamo Yethu since 1991, however, internal divisions[3] and power dynamics in the community, disagreements and conflicting development agendas have resulted in numerous court orders and interdicts that have obstructed development from proceeding (Harte *et al.*, 2009; Roth and Becker, 2011). These delays and lack of consensus within the community resulted in the dissolution of a well-functioning team that met once a month to co-ordinate upgrading in Imizamo Yethu (CoCT representative, pers. comm., 15 May 2014), thus further reducing opportunities for formal disaster risk reduction planning to occur.

A UISP development proposal to address overcrowding and housing shortages in the community required the rezoning of 18 ha of land within the Imizamo Yethu boundaries that was originally zoned as greenbelts, for community facilities and as so-called buffer zones between Imizamo Yethu and formal Hout Bay residential areas. These tracts included land adjacent to Hughendon Estate, Penzance Estate

and the YMCA and the old forestry site (Barbour and Gillespie, 2007) (see Figure 1). The proposed development will accommodate approximately 3,500 people (CoCT representative, pers. comm., 17 June 2014) in a mixture of apartments and houses.

Critically, the upgrade proposal does not include the Dontse Yakhe site, and according to the city planner responsible for Imizamo Yethu, the CoCT has no plans to upgrade this site in the future because of unsuitable environmental conditions and high costs associated with developing this land. Instead, the CoCT's intention is to clear the area of shacks from the service road on the urban edge line (see Figure 1). Officials recognise that only some of the Dontse Yakhe families would be accommodated in the new 880 units (CoCT representative, pers. comm., 15 May 2014). Minutes from council meetings (for the CoCT) (17 September 2012) show plans to relocate some households out of the community but the housing, land and forward planning branch of Human Settlements has been unable to find suitable land on which to relocate the households. This is surprising given a statement by the mayor after the release of the report by the Institute for Justice and Reconciliation (IJR) (CoCT, 2007a) which addressed the "inhumane living conditions in Imizamo Yethu" where she stated that "the City agrees that a number of other sites identified in the land audit should be fast-tracked for housing in order to address overcrowding in Imizamo Yethu and other informal settlements" (CoCT, 2007a). The above-mentioned ongoing conflicts, in delaying proposed developments and failure to clarify how to address land shortages and overcrowding in Dontse Yakhe, have thwarted risk reduction outcomes to improve housing, services, infrastructure and decrease population density. Furthermore, there are several other complex dimensions that also have delayed risk reduction in the community.

Lack of clarity about ownership of and responsibility for Dontse Yakhe land

A lack of clarity around who owns the land on which Dontse Yakhe is located and who is responsible for development and management of this land was seen by some participants as a deliberate tactic to stall service delivery and allocation of land to the community thus contributing to the community's fire risk. Two of the three community leaders interviewed for this study believed that the land belonged to SANParks after an agreement between the CoCT and SANParks to include the land as part of the Table Mountain National Park (Community leader 1 and Community leader 2, pers. comm., 18 June 2014). The third community leader (Community leader 3, pers. comm., 18 June 2014) said the land belonged to SANParks and that SANParks had allowed households to relocate to the land, effectively establishing Dontse Yakhe, after the 2004 fire. Focus group participants said that SANParks had given the land to the people (Dontse Yakhe residents). A HBRA representative (pers. comm., 19 June 2014) said the land belongs to the CoCT while the councillors for this ward refer to Dontse Yakhe being within SANParks' jurisdiction. A CoCT representative (CoCT representative, pers. comm., 15 May 2014) stated that the land above the urban edge line is owned by the CoCT and was leased to SANParks to form part of the Table Mountain National Park over 15 years ago. He said that SANParks no longer wanted the land after Dontse Yakhe spilled over the urban edge line, however, and it reverted back to the City (CoCT representative, pers. comm., 15 May 2014). A senior SANParks' representative (e-mail correspondence, 26 January 2015) confirmed that the land on which Dontse Yakhe was located was indeed owned by the CoCT and that

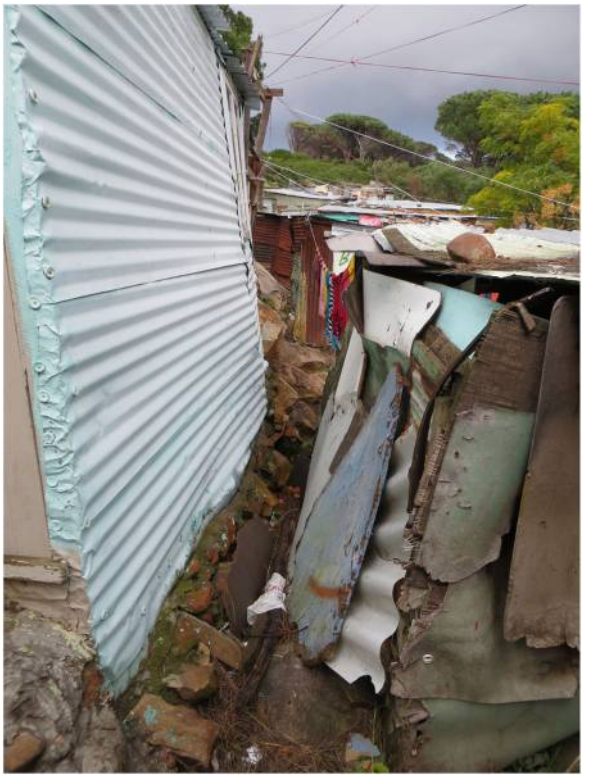
SANParks fulfilled certain conservation management functions on adjacent land. Thus while the Heads of Agreement[4] document signed between the CoCT and SANParks states that the land above the urban edge would be transferred to and managed by SANParks (and specifically refers to the plot of land in question in one of its schedules), to date the land has not been surveyed and remains registered in the name of CoCT.

Community leaders' perceptions were that SANParks and the CoCT were "passing the buck" in terms of their responsibility towards the Dontse Yakhe residents. They said that SANParks had informed them that the land belonged to the CoCT, and the CoCT had said it belonged to SANParks. In their view, the stalemate was a deliberate attempt to avoid formalising the area and providing electricity to the Dontse Yakhe community (Community leader 1 and Community leader 2, pers. comm., 18 June 2014). This sentiment was echoed by focus group participants who believed that the CoCT was willing to electrify Dontse Yakhe, but that SANParks was "unwilling to sign off on this". The fact that the CoCT extended the main road through Imizamo Yethu to reach the top area of Dontse Yakhe indicated to residents that this area was recognised as part of the Imizamo Yethu township. One of the community leaders noted that the extension of the road created an expectation that the area will be formalised: "If you are going to build a road, why not provide electricity? Why give some services but not others? We do not know what their [the CoCT's] agenda is". Focus group participants identified the lack of electricity in Dontse Yakhe as the main factor contributing to fire risk in the community. The lack of clarity on land ownership, government responsibilities and intentions has created uncertainty and mistrust between community members and relevant government authorities. Furthermore, the lack of communication and coordination across relevant government departments has hindered progress towards realising broader (i.e. DMA, NDMF, WCDMF and the CoCT MDRMP) disaster management policy aims and objectives in Dontse Yakhe, supporting findings by Roth and Becker (2011).

Expanding population and contemporary measures to reduce expansion of the settlement

Inadequate measures to manage the influx of new residents and a lack of institutional capacity to address the land and development needs of the Dontse Yakhe community have contributed significantly to risk exposure.

Contemporary measures to reduce expansion of the settlement and efforts to move informal settlers to alternative land are highly complex and sensitive matters because of historic laws and practices of the Apartheid regime (Barbour and Gillespie, 2007; Roth and Becker, 2011). Imizamo Yethu residents are aggrieved about the limited land made available for their community in view of the large plot sizes in the "white" areas of Hout Bay and the fact that there are parcels of undeveloped land in Hout Bay. Inadequate measures have resulted in high population numbers in Dontse Yakhe and very dense and overcrowded informal housing with insufficient space between shacks to create effective fire breaks. Shacks abut one another, resulting in a maze of confined paths that zigzag up the rocky, steep slope of Skoorsteenkop (Plate 3). The shacks have been contained below the service road that runs above a pipeline at the top of Dontse Yakhe (see Plate 2) with CoCT officials monitoring to ensure that no new shacks are built over the road (CoCT representative, pers. comm., 15 May 2014). The officers are only on duty during working hours on weekdays and not on



Source: Created by authors

Plate 3.
Shacks abutting one another on rocky, steep gradient

weekends, however, so enforcement is difficult (CoCT representative, pers. comm., 15 May 2014). One of the community leaders noted:

> Every day they delay development in Imizamo Yethu every day new structures [shacks] are erected. [The community] is growing, and it is just a matter of time before shacks are erected over the pipe [at the top of the settlement] (Community leader 1, pers. comm., 18 June 2014).

Population de-densification

All research participants agreed that the only way to reduce risk for Dontse Yakhe residents is to reduce population density or relocate people to suitable land. The Dontse Yakhe community want this to be within Hout Bay. The IJR was asked to report on the living conditions in Imizamo Yethu in 2007 (CoCT, 2007a). The report included an audit of land in Hout Bay and surrounding areas to identify land to address the overcrowding in Imizamo Yethu and Dontse Yakhe. The report recognised that de-densification of Imizamo Yethu and Dontse Yakhe is essential to be able to provide appropriate services and undertake town planning in the area. The report identified land but said that "about 90% of the land identified in not owned by the City […] [and] the City has been trying for years to free up sites such as Youngsfield, Ysterplaat and Culemborg for housing", which are owned by other government departments (CoCT, 2007a). In addition, the CoCT representative said that there is no suitable land in

Hout Bay (CoCT representative, pers. comm., 17 June 2014). The community leaders disagreed. They were of the opinion that the IJR land audit had found suitable land in Hout Bay and said that residents should only be relocated within Hout Bay, however, "the white Hout Bay residents blocked the allocation of that land" (Community leader 1, pers. comm., 18 June 2014). The HBRA representative said that after a year of community consultation, all parties agreed that Dontse Yakhe residents would have to be decanted, but "no action has been taken [it was] political manoeuvring before the election" (HBRA representative, pers. comm., 19 June 2014). A review of the IJR land audit suggests there is land available outside of Hout Bay although the constraints associated with acquiring and developing the land, are not clarified.

Political factors undermining risk reduction

The research suggests that community politics as well as lack of clarity regarding land ownership and governance responsibilities to address risk reduction in Dontse Yakhe have contributed to delays in action and decision making. However, some research participants believe this to be due to political motivations (Community leader 1 and Community leaders 2, 18 June, 2014; HBRA representative, pers. comm., 19 June 2014). The changing political leadership in the Western Cape and CoCT since the establishment of Imizamo Yethu has certainly contributed to these delays. While local politicians are eager to support the demands of their constituencies and are pushing for different solutions to the land and housing crises in Dontse Yakhe, the CoCT is required to act in the interests of all residents and comply with the planning and disaster management policies and strategies that guide its decisions.

A key option that clearly requires exploration is the identification of land on which to relocate shack dwellers from Dontse Yakhe. Residents of Dontse Yakhe favour land within Hout Bay although are willing to be relocated to serviced land with housing outside of Hout Bay, whereas members of the broader Hout Bay community state that this land should be outside of Hout Bay. Both Imizamo Yethu community leaders and representatives of the Resident's Association have stated on various occasions that other historically "white" suburbs such as Constantia and Camps Bay should also be willing to accommodate landless people from Imizamo Yethu. However, no decisions have been taken in this regard. While land identified within Hout Bay or the surrounding suburbs would gain support of the Imizamo Yethu community, it is likely that such a decision would alienate residents living in these suburbs. Reflecting on the government's response to the IJR report Margo Hayward, DA councillor for Hout Bay wrote "My immediate response is that there is one word to describe the feedback and support from the government to the IJR process and that word is 'Pathetic'. The IJR land audit identified a substantial number of pieces of land outside of Hout Bay, all of which [a senior council official] dismissively wrote off as unavailable. I believe that at least a few of these pieces of land (mostly in provincial and national government ownership) should be used for housing and, if enough noise is made by those with influence, perhaps could be […]" (CoCT, 2007b). In seeking to understand the failure of government to resolve the overcrowding in Dontse Yakhe and address the risks facing this community, the political dimensions cannot be overlooked.

Conclusion

The South African settlement of Dontse Yakhe is at significant risk from a range of hazards due to a complex interplay of the natural and social landscapes. Despite an established framework of national and municipal disaster management policies,

however, this research suggests there are a number of factors inhibiting risk reduction and the embrace of disaster risk management policies and strategies in Dontse Yakhe. These include local community politics, lack of clarity regarding land ownership and governance responsibilities, population expansion and limited space for development as well as political agendas and power dynamics that exist amongst the various stakeholders and organisations. It is clear that progress continues to be poor in realising the aims and objectives at all levels of disaster management policy in Dontse Yakhe. A score card for Dontse Yakhe of local municipal obligations related to disaster risk reduction reveals shortcomings in policy application, specifically in the areas of undertaking a risk assessment, disaster risk reduction integration in development planning and providing for appropriate prevention, risk reduction and mitigation strategies. Furthermore, lack of information and limited communication amongst key governance actors and the Dontse Yakhe and broader Hout Bay communities have resulted in high levels of mistrust between residents of the informal settlement, community organisations and the relevant government departments. In particular, the different perspectives of Imizamo Yethu residents and other stakeholders to the risks facing the Dontse Yakhe community and how they can be addressed as well as lack of meaningful engagement, creates confusion and delays decision making. These factors have created barriers to risk reduction in Dontse Yakhe and realising the aims and objectives of disaster risk policies. Clearly, this case study suggests a mismatch between policy rhetoric and practice in the field of disaster risk management. A recommendation of the present research is to provide a platform where community representatives and other governance actors can come together and share information on a regular basis and explore solutions to risks facing Dontse Yakhe in a respectful way. Further research is needed to investigate sustainable and socially just solutions to reducing risk for Dontse Yakhe community members.

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Notes

1. In terms of the Apartheid system, all citizens in South Africa were classified into four racial categories; white, coloured, Indian and African. While these categories were social constructs of the oppressive Apartheid regime and are no longer in use, it is necessary to use the terms in the paper in order to understand the historical and current context of planning and development in Dontse Yakhe.
2. Reblocking is a "process of reconfiguring the current layout of informal settlements by grouping shacks into clusters and reorganising the ground plane in such a manner as to optimally utilise space to promote the health, safety, well-being of households, with a particular focus on promoting accelerated service delivery to informal settlements" (CoCT, 2013a). UISP is a process in which the community is decanted (i.e. some households are relocated to reduce the population to create space for roads and fire breaks). The area is redesigned and some households are moved back. UISP is not community driven. IDA involves identifying land,

adding services and moving households to the area as an informal settlement with the view to upgrade in the future (DMCT representative, pers. comm., 19 June 2014).

3. The Imizamo Yethu community is divided into many groupings including the following major groups: the African National Congress (the ruling party in South Africa), South African National Civic Association, the Democratic Alliance (DA) and Sinethemba (representing the original Imizamo Yethu residents). Internal divisions have been identified as a barrier to disaster risk reduction (Harte *et al.*, 2009; Roth and Becker, 2011) and community development through hindering upgrade planning initiatives (HBRA representative, pers. comm., 19 June 2014).
4. The Heads of Agreement is a legal document entered into between the Cape Metropolitan Council, the Cape Town Municipality, the South Peninsula Municipality and South African National Parks, that sets out principles and procedures for allocation and management of local authority land in the Cape Peninsula Protected Natural Environment for the purpose of establishing a National Park. The three councils have now been consolidated into the CoCT.

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