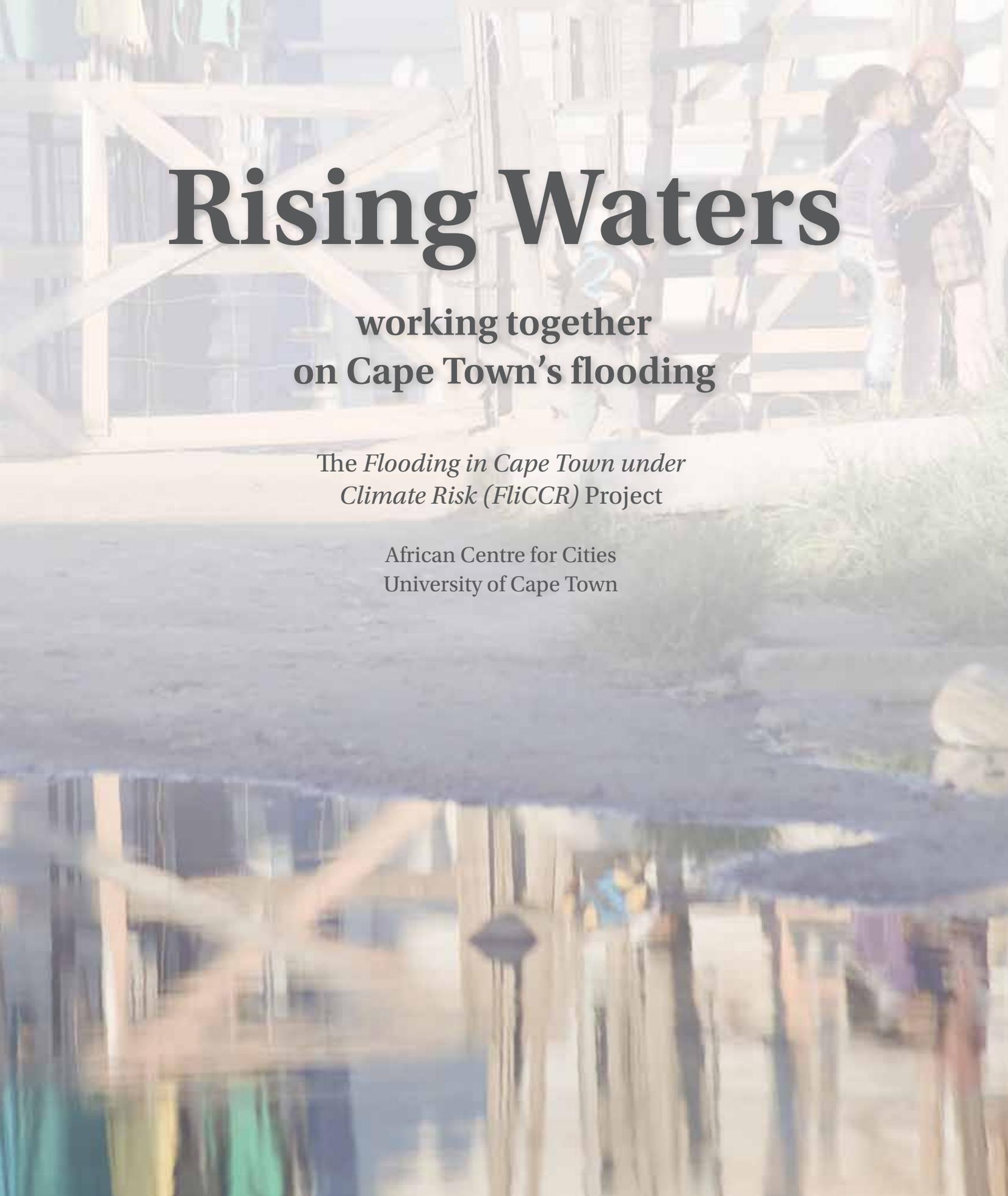
A photograph of a flooded alleyway in an informal settlement. The ground is completely submerged in murky, brown water. On the left, there is a structure with pink corrugated metal siding and a wooden fence. On the right, there are more makeshift buildings made of wood and corrugated metal. A person wearing a blue rain suit and a hood is walking through the water in the center of the alley. The sky is overcast and grey, and there are many power lines crisscrossing the upper part of the image.

Rising Waters

working together
on Cape Town's flooding

The Flooding in Cape Town under Climate Risk (FliCCR) Project
African Centre for Cities, University of Cape Town



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on Cape Town's flooding

*The Flooding in Cape Town under
Climate Risk (FliCCR) Project*

African Centre for Cities
University of Cape Town

A young child with a shaved head, wearing a white and purple striped sweater and orange pants, stands in a doorway. The child is looking out to the right. The background is a bright, overexposed outdoor scene. The doorway is framed by light-colored walls.

RISING WATERS: working together on Cape Town's flooding

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FOREWORD



Flooding happens annually in Cape Town's informal settlements. The impact on residents' lives is enormous, yet people have few resources to cope. They are also society's most vulnerable: often unemployed, living in shacks, and with nowhere else to settle but where the water gathers each year. These communities will also bear the brunt of the likely increase in flood events as climate change makes the Cape's heavy rains more severe and frequent.

We cannot avoid the underlying reasons for why these communities find themselves in such vulnerable circumstances, or the fact that flooding-related humanitarian crises will continue to plague these communities and the city charged with assisting them.

It's critical to find sustainable, workable flooding responses, *now*. This means involving communities in flood-prone informal settlements in decision-making processes. The City of Cape Town is responsible for coordinating this response, but has difficulty when it comes to involving local communities.

This book explores the challenges and opportunities of collaborative governance as a way to get a broader group of stakeholders involved in flooding responses, as part of our ongoing research through the Flooding in Cape Town under Climate Risk (FLiCCR) project.

We would like to thank our colleagues in the University of Cape Town's African Centre for Cities, the Centre of Criminology, the School of Architecture, Planning & Geomatics, and the Department of Environmental & Geographical Science for their contributions to this important work.

Our partners in the Swedish Stockholm Environment Institute (SEI) provided valuable support, while the City of Cape Town's Environmental Resource Management Department and the Disaster Risk Management Centre were extremely supportive.

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The communities and leaders in the informal settlements of Sheffield Road, Graveyard Pond, Kosovo, Egoli and Sweet Home, in Philippi, Cape Town, opened their neighbourhoods to us.

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INTRODUCTION



Every year, the Cape's winds churn their cold fronts relentlessly in from the north-west, bringing the peninsula's typical winter rain. And every year, newspapers bring the predictable headlines of flooding on the Cape Flats: the food parcels and blankets for stranded communities; halls used as emergency shelters; the City's Disaster Risk Management Centre teams deployed; civil society rushing donations in.

Sometimes the flooding seeps up from beneath, where the naturally high water table of this wetland becomes waterlogged and 'ponding' happens; sometimes water backs up when stormwater drains struggle to handle the inundation after another torrential downpour when runoff hits paved surfaces.

Why do people settle in these flood-prone neighbourhoods on the city's fringe, risking their meagre possessions by building a shack on a wetland that's going to surge up each winter and leave their shanties wallowing in stagnant water and even raw sewage?

People settle in high risk areas for myriad and complex reasons. Often, they are responding logically and practically in situations where they have few options.

An equally important question to *why* people settle where they do, is understanding *how* these communities and the City work together to deal with the risks which they face every year when the rains come.

The flooding Flats

This book grew out of work done with the University of Cape Town's Flooding in Cape Town under Climate Risk (FliCCR) project and visits three informal settlements in Philippi on the outskirts of Cape Town's so-called Cape Flats: Egoli, Kosovo, and Graveyard Pond. Yet the lessons gleaned here apply to many similar communities living in flood-prone neighbourhoods around the city.

The stories track three key themes:

- Why families settle where they do, and the impacts on their lives, livelihoods, health and education.
- How people respond to the flooding problems.
- How communities organise themselves, how the City of Cape Town prepares for and responds to the flooding, and how it addresses the communities' needs.

Over the years, researchers in developing countries have studied in fair detail just how vulnerable flood-prone communities are, and why, and how they cope.

What isn't well understood, is the matter of governance: self-governance within the community, how this kind of 'micro-politics' hinders or enables communities' ability to cope, and how the City responds to flooding issues and interacts with communities to find solutions to the flooding risk.

When the University of Cape Town's (UCT's) FliCCR researchers began working in the Philippi communities in 2010, they hoped to understand the impact of social dynamics on the community's ability to deal with or adapt to their circumstances. Could residents of these low-income communities, in fact, be active participants in managing their neighbourhoods? And was the City working closely enough with them to find ways to handle flood risk?

This work captures some important findings about whether local government has the capacity to collaborate with communities, and what leadership dynamics in the communities mean in terms of appropriate responses. It looks at how to strengthen the capacity of the City so it can work with residents

and local leadership, as well as between departments within the City, with non-governmental organisations (NGOs), and researchers.

The rising tide

Less than half an hour's drive from the shanties of Philippi, with the challenges of bucket toilets and litter-clogged stormwater drains, is another world entirely: high-end, multi-storey apartment blocks; luxury delis and cocktail lounges overlooking the setting sun; promenades and mini golf.

Apartheid laid claim to Cape Town's valuable coastline, setting aside its development for the well-heeled. Today it is an entirely different built-up urban landscape, compared with the informal settlements. But because it faces directly into the ocean, these highly engineered, built-up seams between land and sea have their own unique threats of flooding. Climate change will make this risk even greater.

When City managers and town planners consider a future with more powerful storms and rising sea level due to human-caused climate change, their approach needs to be quite different to that taken when dealing with flooding experienced on the Cape Flats.

The final section of this book looks at the risks associated with sea level rise and the increased severity and intensity of storms rolling in from the sea due to rising global temperatures associated with human-linked greenhouse gas emissions.



THREE neighbourhoods in apartheid's 'DUMPING GROUND'



It's a grim scene: a rabbit warren of rickety homes, topped with zinc sheets and plastic, standing barely a shoulder's width apart. Between them, a tangle of paths, strewn with discarded pallets and salvaged building rubble to lift pedestrians' feet above the wallows of green-brown water. Some of the pallets have slumped beneath the weight of their task, lolling into the mire which smells faintly of sewage and stagnant water. Deeper and deeper the paths go, until one fetches up against a cavernous square drain, rimmed with a fringe of opportunistic grass and covered by snarling iron bars.

This is the marshy heartland of Graveyard Pond, a new settlement on the edge of Cape Town, South Africa's Mother City. Far in the distance, beyond the undulating corrugated roofs and the knot of electricity cables reaching down into the shacks, is the unmistakable rump of Table Mountain, topped with an elegant cloudy blanket.

Winter's coming. And with it, for these communities, comes the cold, the wet, and the threat of being rained out. It means sodden bedding and ruined food, soaked school uniforms, and more days off work as breadwinners stay home to mop up the damage and protect their belongings.

The bare numbers

HOMES AT RISK OF FLOODING: 88 000

PEOPLE DISPLACED: between **32 000** and **34 400** in the winters of 2007, 2008 and 2009; **44 000** in July 2001 (13 percent of all residents of informal settlements in Cape Town).

Figures from the City of Cape Town, 2009.

This drain is part of a stormwater management system, put there to siphon off the water that fetches up in a 'detention pond', a manmade wetland built here to hold water temporarily after heavy downpours. But, since the pond stands dry during summer, desperate people set up their homes on what seemed like suitable open ground, often not knowing what the winter months would bring.

So after a recent downpour, this over-burdened drain wasn't able to handle the sheer load of rain. The water pooled up around its mouth, spreading out and flooding the surrounding shacks. It'll take days for the worst of the water to recede because in winter there's no heat or searing south-easterly wind to dry things out.

Graveyard Pond is one of the many shanty towns that have spread out across the Cape Flats, a wide, sandy stretch that is remembered as being the 'dumping ground' for black South Africans under the apartheid-era Group Areas Act. Today, hundreds of thousands of people live in cramped quarters in townships and informal settlements on the ancient dune field.

The ground beneath the Cape Flats is a wetland: low-lying, sandy soils which quickly become waterlogged, over a naturally high water table. When the winter rains come, this water rises. Development here has disrupted natural drainage systems. Capping over the ground with hard surfaces like roads and pavements has changed how stormwater behaves when it hits these low-lying areas.

Concerns in the City are growing as in-migration brings more people into these congested spaces and forces them to build on flood-prone land. But now there's the added pressure of climate change, which, while not the cause of flood risk, will ratchet up the hazards considerably.





A COMMON story

The difficulties faced in Kosovo, Graveyard Pond and Egoli, in Philippi, represent conditions throughout many informal settlements on the Cape Flats, explain the UCT FliCCR researchers. Here, the high water table means the nature of the flooding is similar across many areas, where moisture seeps up from beneath the homes, or stormwater drains back up.

However they might not be representative of settlements next to large river systems, such as those in Johannesburg or Pietermaritzburg, which often experience flash floods during the summer months.

Three clear issues emerge, showing what shapes these communities' ability to cope in times of flood:

- The location of the settlement, where some are settled on private land, and others on municipal plots.
- How much solidarity or conflict there is within communities.
- How well connected they are with external agencies such as local government or emergency relief charities.



Graveyard Pond – built for water, not people

Graveyard Pond is a small, relatively new community, mostly made up of young people, between 25 and 35 years old, who have moved into their own homes for the first time.

In 2007, a ring of shacks sprung up around the lip of a detention pond, space designed as part of a stormwater management system to act as a temporary catchment during heavy rain. But people were desperate for land, and so they started building homes deeper and deeper inside the pond, which stood dry during summer months and probably looked suitable for settlement.

The community is about 900 people in all, most of whom are unemployed, dependent on child grants, and new to the area.

There are a number of portable toilets here, serviced by the City, but many people walk across to neighbouring informal settlements to use the outdoor toilets there.

Since this is City land, the municipality is responsible for service delivery here. The 'GP' community has been earmarked for relocation, since no long-term flooding prevention solutions are viable.



Graveyard Pond 2007



Graveyard Pond 2009



Kosovo – just the basic services

Kosovo’s dwellings are informal shacks, but it has been blocked off into a gridded street system, there were initial attempts at sanitation, and it has basic stormwater drains and electricity.

A 1998 aerial shot shows open ground and dunes here. By 2000, it was completely closed in with shacks. Half of the estimated 22 000 people living here are unemployed.

In lower lying areas of Kosovo, water seeps up from beneath. However when rainwater hits paved surfaces and clogged stormwater drains, water backs up, flooding streets and homes.

Most homes have portable toilets nearby which the City cleans regularly. But many still use the notorious bucket toilets, where people relieve themselves in plastic tubs which the City empties or replaces. Or people use potties at night as they don’t want to go outside to the communal toilets, out of fear, or because of bad weather. While it is discouraged, they often have no option but to tip the contents out into stormwater drains. So when drains back up, the flood waters are often loaded with sewage.

Grey water from bathing, laundry and cooking is often tipped out into the streets where it stagnates.



Kosovo 1998



Kosovo 2000

Also on City land, Kosovo is serviced by the municipality.

Egoli – caught in a no-man’s-land

Egoli sprung up on a soccer field off Schaapkraal Road near the Philippi agricultural area in 1995, when 16 labourer families were evicted from farms. Since then, the community has grown to nearly 1 300 people, some of whom are contract workers who moved from the Eastern Cape.

The first families settled on higher ground. But as the community has grown, shacks have spread down into more flood-prone lower lying areas.

Egoli’s situation is precarious because people are settled on private property. This leaves the community trapped in a no-man’s-land: the City can’t give them the water, sanitation and electricity services they need; and the land owners aren’t obliged to by law. Then there’s the sword of eviction hanging over their heads which they have been fighting since 1999.



‘New Start’ despite Old Problems

‘Flooding affects me too much. I’m using electricity for my business. I have even been shocked from the deep fryer I’m using, because we are standing in water,’ says Christina Mtandana, businesswoman and community leader in Sweet Home, Philippi.

Nowadays gumboots and two pairs of thick socks are part of her solution. But it’s not all she does to prepare her workplace for the winter rains.

‘When it’s raining and water comes in, it gets full here,’ she says, pointing to her kitchen floor. ‘The wires are just lying down and it’s dangerous. Even the fridge shocks me, but I put my electric wires on crates to keep them out of the water.’

She also digs trenches, puts plastic sheets on her roof, and lays rubble on the edge of her property near the open drain that runs parallel to the home and business.

‘I can’t stop my business just for the rain.’

Her restaurant, Siqalo – from *isiqalo* meaning ‘new start’ in Xhosa – represents a new beginning, when she became economically independent four years ago. The take-away and catering business gives a good income for her and her family.

‘I can live now. I can send my children to school. I have food for those I care for, also my father who is old now. I have savings, and also have extra for others.’

Children from the community linger and say *Ndilambile* under their breath, in the hope of getting one of her popular *vetkoek*. Most times they’re successful.

Christina’s options have boiled down to two things: either business viability, or safety.

Her take-away restaurant and catering business is based in her father’s home, on a well-travelled road linking Sweet Home to taxi ranks and school routes. Her previous business location isn’t far away, and on higher ground, but it was tucked away from passing trade.

So, in spite of the flooding and associated risks of operating out of her father’s home, she says it’s her best option.

‘I used to use one ten kgs [of flour] a day, and now I use three, so this is the better place to be,’ she explains.

She makes up to 220 *vetkoek* a day, as well as burgers, Russians and hot chips. And she braais in the street on weekends.

Christina also heads up her section on the Sweet Home street committee.

But she’ll only do it for a year because ‘if you let people stay on for five years they will take it like it is ‘their’ own thing, but it is not – it is for the community. We must all step down, not like Zimbabwe.’

But for now it’s back to business for Christina, as she prepares for winter, a public meeting with the City of Cape Town, and tomorrow’s *vetkoek* sales. Thankfully, her sales remain the same during the winter months.

‘People still come and buy when it is raining, but it’s just more dangerous to make it.’

Linda Martindale

‘It was not winter when I arrived’

Mandla Wonxa, Graveyard Pond

I’ll be lying if I say I knew much about the dangers of living here and the problems we will encounter. The first day we had a lot of water here ... People were standing in upper areas; some were laughing at us: ‘Why did they go and stay there in the first place?’ But when we were putting up our hokkies they didn’t say anything! I had to roll up my trousers it was so wet. I had to leave the shack for a few days. I couldn’t stay here.





No place *else to go*

Lenah Gorewang never imagined she'd grow old in one of the coldest, wettest parts of Cape Town's flatlands. As she enters her sixties, Lenah says she'd love to go back to Kimberley where her mother, who is as 'old as Nelson Mandela,' still lives.

She shakes her head: Graveyard Pond is no place to settle. But it's too expensive, and too far to go back to the Northern Cape.

'I think about it a lot, especially when it's raining,' she says.

She moved to the Cape with her employers who she worked for as a domestic worker, and nanny, for around 30 years. The timelines blur, but she knows that she 'raised the children and they are now men and have their own children.' She worked for them until they moved away from Cape Town a few years ago. Lenah says they left her in Panorama, forcing her to live in the 'forest' for three years as she had no family here and no money to go home.

'I had no place to stay,' she says, 'until I met my boyfriend who helped me.'

They settled in a backyard dwelling in Phola Park until a state housing project began and they had to find their own place.

The path to her neatly swept yard is puddled-over with green water, and wooden crates are laid down as makeshift stepping stones. There's a popping sound of wetland frogs breaking through the noise of people and their pets. Many move to flood-prone areas not knowing what it's like during the rainy months, but Lenah is not one of them.

'Yes, I knew there was water, but I had nowhere else to go.'

Lenah and her husband, Zolandile, do what they can to prepare for the waters when they inevitably come.

She was going to lay some sand before the rains started this year, but hasn't been able to as she has no money. Since her TB cleared up she doesn't get a social grant income, and is going through the slow process of getting a state pension. Until that comes through, there's no cash for sand.

'Even now as we are speaking, if you go into one of the rooms, it is wet. And the rain has not yet begun - it is wet throughout the year,' she says, and tells how she sometimes has to turn off her electricity supply as her appliances shock her.

'The water comes from underneath. The only thing I can do is to keep eating soup and good stuff so I keep healthy inside,' she sighs, lifting her hands in resignation.

Linda Martindale

MAKING do

When people explain why they choose to settle in places like these, it's clear that they have little choice in the matter.

Eviction – Many Egoli residents were evicted from farms, while some from Kosovo and Graveyard Pond were forced off a nearby piece of land when construction began on a government housing scheme, ironically called Better Life.

'I used to live in the house over there but the boer (farmer) kicked me out. We hired the place, we paid money but they still kicked us out.'

Rootedness in the community – *'All my children are born here, still live here and go to school and work nearby.'*

Cash strapped – Some admit to hitting on hard times, maybe after losing a job. Living in a shack without electricity or running water is tough, but cheaper. *'Living conditions are better (in backyards), but here we do not pay.'*

Getting on the payroll – Being close to work opportunities is a strong motivator. Building or buying a shack near transport hubs along roads or rail lines is a big plus.

Growing up – Everyone has to leave home eventually. *'There I was just a kid, here I am independent. And there we had toilets. But now I live on my own.'*

'Because you are not free when you live with your parents. Maybe you want to meet with your boyfriend...!'

Ignorance is far from bliss – When people buy their shacks, they often aren't told how bad the flooding can be.

BEARING the brunt of the FLOODS



The shipping container standing on an unnamed corner on the streets of Kosovo is as large as the shacks it's there to service. But today, its heavy metal doors are padlocked shut because, as a community leader explains, if it was left open, 'you might come here in the morning and find a body in it'.

The City can't deal with refuse removal here the way it does in the suburbs, where each home has its own wheelie bin. Instead, residents haul their rubbish bags out to containers like this one, and if it's locked, leave them like offerings at its barred entrance. Bag after bag, they pile up.

First, the dogs come, wandering through in packs or as straggling loners, and rip through the plastic in search of food. Then the rains come, washing the rubbish into the stormwater drains which become a catch-all for the detritus of living: grey water from laundry, the contents of toilet buckets and kitchen waste.

Invariably, the drains clog, backing up after a downpour, and flood the streets with a cocktail of foul water. It pushes in

under doors, across floors, seeps into mattresses and bedding, into lounge suites and kitchen cupboards and school clothes. Long after the flood waters have retreated, the last stubborn puddles linger for days, greening over with algae and rot.

The lesson from the rubbish situation, and other service delivery issues, is this: for flood risk management to be effective, there needs to be better communication and collaboration between formal and informal leadership in the City, and in communities. And there needs to be an understanding of shared responsibility.

The City knows that waste management is closely linked to flood management and calls for residents to be disciplined about dumping rubbish when the containers are unlocked, just before collection times. But residents say the City needs to communicate better about collection times, or ask for contractors to stick to their timetables.

Flooding is a complex problem to manage, and can't be treated in isolation.

Walk a mile in another man's shoes

Dealing with day-to-day chores is hard enough in a shanty town where people have no decent sanitation or electricity supply: cooking food that's wholesome and germ-free, washing clothes, ironing, cleaning the baby, getting to work on time when the trains run late.

Add to this the travails when the flooding sweeps in, and a new appreciation for the precarious existence of the people of Philippi emerges:

Damage to property – People's possessions such as food, furniture, clothing and bedding are ruined, but hard to replace. *'There's just leaking roofs everywhere, everyone's clothes is getting wet.'*

Cold, wet and miserable – The health implications of living in perpetually cold, wet conditions can be severe. The most common illnesses are coughs and the flu, diarrhoea, TB and skin rashes. Few homes have electricity, so warming up is difficult; cooking and heating with paraffin, coal or wood bring their own health problems, such as lung disease from air pollution, or the risk of fire. The cramped, wet conditions, and the prevalence of HIV, can make this a hotbed for the spread of TB.

'It's cold, wet and my children are getting sick. I'm tired of living in the cold and wet.'

The anxiety and helplessness become a way of life.

'I am afraid. I hoped that when the winter arrives we would be in a better place... there is nothing you can do about this place.'

'When you are sleeping and it is raining you have to wake up, because you are worried. One day of rain is enough; if it rains heavily one day then we are in trouble.'

It's hard on the elderly, the infirm, and children

'We can't even sleep nicely in the morning when we stand in the water with our feet. It's not nice because our children are getting sick.'

Disruption of work and school – Dealing with the practicalities of mopping up after a flood, staying home to protect property, or the difficulty of simply keeping clean and dry can be hugely disruptive to a person's life.

'I must get out of the wet and go to work. I struggle to get out of my house. By the time I get to work I'm wet from my head to my feet.'

'Many children had not attended school on Wednesday,' the Cape Argus reported in September 2008, 'because their uniforms were wet, residents said. Instead, the children were wading through pools to help their parents bail water out of the shacks.'





Fighting for Health *and* Healing

Tears well up in Bomkazi Sokhaya's eyes. She speaks of being 'stuck' with no choice but to live with sewage-tainted water seeping through the corner of her tiny bedroom. Her home in Kosovo borders a road that has become a cesspool of liquid waste.

'When the water stands outside, I get these things,' she points to scars from blisters that develop on her skin when the dirty water level rises.

'When I go the clinic they give me treatment, but once back [near] that water, they just start again. It's terrible.'

Bomkazi and her neighbour, Nokuphumla Tofu share a small yard that floods every winter. Both are unemployed, desperate for work and battling with coughs that worsen as Cape Town's wet, cold winter approaches.

TB and pneumonia are common here as residents battle the cold and damp living conditions. As Bomkazi says, there's little anyone can do about the illness other than try to stay warm, which she does with blankets, because it's not safe to keep the electricity on when the water comes.

'We are afraid we get shocked when the water is deep in the house and I am using buckets to take it out.'

Whilst the damp and cold cause discomfort and ill-health, both Bomkazi and Nokuphumla are most distressed by the smell of sewage that permeates their otherwise spotless homes.

Some local political tussling has resulted in the portable toilets not being emptied, leaving many residents to use buckets as toilets which they empty into the standing water near Bomkazi's home each morning. She is not only affected physically by this, but it hurts her dignity and she expresses shock that people would do that knowing she and others live right there. She stuffs old clothes and sturdy material in the corner where it oozes through into her room, to stifle the smell and wet. But she feels helpless to solve the problem. For now, she can only manage it.

Linda Martindale

Batten down the hatches

Knowing what winter will bring, people do what they can to fortify their homes against the approaching onslaught, making urgent repairs and getting ready to barricade against the impending rains. They mostly respond individually and at a household level, but occasionally communities have to work together to deal with flooding in the 'commons', such as on pathways between homes or around communal toilets.

Lift up – Some might try to lift their shacks off the ground with wooden stilts, or build onto a raised cement slab. But with older, more rickety shacks, this kind of home improvement is hard. People also know that their raised floor might worsen their neighbours' flooding.

Wrapping up in plastic – Plastic sheeting and sails are indispensable. People cover over leaking roofs and walls, or may line the shack floor with plastic sails. Many will cover their bedding, furniture or clothing with plastic sheets to keep the wet at bay.

Lifting their feet – Throwing building rubble and packing pallets down into the paths between shacks can save people from having to splash through the water. But this might also redirect water into the nearby shacks.

In the trenches – People dig trenches in communal areas around their properties to catch and hold water, trying to stop it from running into their homes.

Sandy floors – Throwing sand, usually delivered by the City, down onto the floor inside a shack may be a messy solution, but it can help absorb some of the water.

Bail! – But when it does get into their shacks, they have to bail it out using buckets, an arduous and cold job.

Temporary shelter – When the flooding is at its worst, some may spend a few nights in the local church or community hall. Although being away from their homes leaves their possessions vulnerable to theft and plunder.

Warnings – Many will scan newspapers, or ask community leaders for storm warnings.

In the end, though, the only way to truly avoid the difficulties of living in certain flood zones is to move.

The City has a plan

The City's efforts under the Disaster Management Plan and Winter Preparedness Programme try to dovetail their response with the communities' own efforts to deal with flooding. These include:

- Assessing risk.
- Creating flood awareness, such as through information campaigns, street theatre, workshops, and gathering information within the community.
- Delivering disaster aid, such as food or blankets, or assisting with temporary shelter.
- Better service delivery, such as waste collection and improved portable toilets.
- Driving infrastructure upgrades, such as improved sanitation and stormwater drains. This is a process which starts with policy-level responses, and ends with full implementation and maintenance of the infrastructure.

Nevertheless, a lack of collaboration between the City and residents is one of the reasons these efforts don't often succeed as hoped. Where efforts to upgrade the infrastructure have failed, the community has said there was a lack of 'qualitative participation' and that the City didn't understand their real needs. The City responds by saying the communities' own internal wrangling and conflict got in the way of working together effectively.





A mother's Quest

On rainy days Zundrey Wevers, 14, packs her uniform and books into a refuse bag before heading off to meet her friends for the 30 minute walk to Zeekoevlei High in Lotus River. She wears her 'house clothes', as her mother Gail puts it, and once at school she changes from the sodden ones into her dry uniform.

'She loves school - she does not want to stay out of school for the rain,' says Gail, describing how Zundrey puts her backpack down and goes straight into her tiny bedroom to do her homework as soon as she gets home each day.

'I encourage her because I did not have that opportunity to learn further. I tell them every day, "I want you to become something in your life, and don't want you to end up in the gutter like me",' she says, momentarily sad.

Gail sees a better future for her children because of the education. Both Gail and her husband are unemployed, but he sometimes does odd jobs that bring in R30 per day.

Much of the little money they have goes into ensuring their four-year-old goes to Egoli Toddlers each day, and that the other children have tracksuits and anything else they need for school.

But severe rains and flooding are a threat to their schooling. And it's not only her children she worries about. When she sees a storm brewing, Gail goes to the primary school to talk with the principal.

'I ask if we can take the children because of the rain and then she will say 'go to the classes and get all the Egoli children and let them go home [before the rain starts]';' she says.

With winter fast approaching, she worries about the elderly in her community, as well as the sick.

'There are a lot of old people, children, sick people, people that need help, that (others) don't think of or offer help. I share what I have with the people.'

The City of Cape Town recently brought 100 pieces of sail to Egoli. Gail says she didn't get one. But her sister gave Gail her roll, and they put it on the roof of her shack in preparation for the coming rains. That's the only thing they can do before the flooding begins.

'We don't have money to prepare,' she says matter-of-factly, pointing to the sections of her son's bedroom where the rain comes in, forcing him into his sisters' beds during winter months. But she does what she can to keep her make-shift home dry and safe on a day-to-day basis.

'I am coping for the sake of my children. If the mother is going to give in, then the children will also give up hope.'

Linda Martindale

NEW WAYS to govern old PROBLEMS



Scruffy tar roads march through Kosovo, a sign that the City has tried to upgrade it from a ragtag shanty town into a formally 'blocked' township: roads give access to fire trucks or ambulances; garbage removal teams can thunder through on their rounds; drains can slip floodwaters discretely away.

But a series of crumbling cement cubicles line these roads, haunted monuments to a failed 'upgrade'.

Once, these grey walls threw a screen of modesty around communal flushing toilets which fed into a sewage system that was regarded as fairly sophisticated for a community like this. Now they are abandoned, the porcelain toilets shattered, the shells used as dumpsites for rubbish.

In 2008, the City installed communal toilets throughout Kosovo: flush toilets to spare residents the indignity of bucket toilets. Open drainage channels and stormwater drains were put in, to funnel away rainwater and grey water from washing, cooking, and bathing.

The upgrade was well intended, writes UCT civil engineering associate professor Neil Armitage and colleagues in a 2010 conference paper. But it is an example of how a lack of proper consultation with the community led to the project's failure.

The problems were rudimentary; the impact, profound. This toilet system fed into collection chambers that the municipality would vacuum clean using honeysucker trucks, rather than piping the black water away to a sewage plant. But the chambers soon filled up and became blocked with newspaper, bricks and sticks, causing sewage to push back up out the drains and manholes.

There was some debate about whether the toilets were damaged intentionally, either by residents eager to show the City up, or if the sabotage was fuelled by political rivalry, or mischievous children.

Before long, residents were back on the bucket system, writes Armitage, and the communal toilets were broken and useless.

'Buckets are better than these toilets because these toilets are only toys,' some residents told him. 'They are not working!'

The health implications of this sort of infrastructure failure are serious. When the rains come, and the flood waters rise, they become laced with the raw sewage when residents empty out their bucket toilets into the surrounds, or when communal flush toilets fail.

'Hard' tech and 'soft' governance

High-tech engineering solutions: stormwater drains, levies, and drainage canals. These are often the first solutions which municipalities use to manage the infrastructural problems and risks associated with flooding in these neighbourhoods.

The lesson from the collapse of the communal flush toilet system in Kosovo is that there needs to be a different approach to solving a community's problems. Sometimes 'softer' solutions are more effective. Before anyone throws down slabs of concrete and digs trenches, the Philippi stories show, there needs to be:

- More human interaction, collaboration, and communication between affected parties.
- So-called 'non-structural measures' should be considered, such as planting shrubs or grass in flood-prone areas.
- Behaviour change amongst residents, along with information sharing such as warning new residents which areas are known to flood badly, and encouraging settlement on higher ground. Early warning systems, possibly even by sms, can send out alerts about localised flooding, urging people to move to higher ground, or say where the nearest shelter is.



'We are always fighting'

Jabu Ndabezitha, Kosovo

When we, as ANC members, bring something to Kosovo, the DA members criticise it. If the DA brings something right to Kosovo, the ANC criticises it. So we sit down and discuss that - if we criticise each other, people suffer. So we must work together and form one community leaders' party. That will solve the whole problem. So we formed the United Committee. Now we do things for the people. It's now two years working like this, and it's marvellous.'



From 'government' to 'governance'

Out with the old: 'government' is based on hierarchy, where state and society are separate from one another. Typically, local authorities will create 'invited' spaces in which the community or civil society is allowed to participate.

In with the new: 'governance' blurs the line between public and private, fostering networks between different parties so they can work towards common goals. 'Collaborative governance' uses grassroots activism. But it must tiptoe through the messy conflicts that come with ideological clashes when different players come together. Political patronage or internal rivalries can also gain leverage. Nevertheless, it tends to be less paternalistic, and more inclusive.

'... flood risk **governance**... can result in a more holistic understanding of the causes, impacts and possible responses to flooding, which can build a platform for developing collaborative activities that will help reduce flood risk in a proactive and holistic way,' say the UCT researchers.

Three species of 'leadership'; one politically-charged ecosystem

For effective collaboration, there needs to be fair representation of, and participation by, the community, local politicians, and the City's bureaucrats.

The community's voice

These are fragile and fragmented communities. They are poor, their shacks are made with meagre building materials, and the settlements lack infrastructure. This 'informality' extends to their efforts to self-govern, which is a critical link in how they deal with life in a flood zone.

Most communities set up committees, often drawn from community leaders or activists. Ideally, they are voted in democratically, but sometimes are self-selected.

'Their role is to work on issues such as safety and development, and to mediate around internal issues like conflicts between neighbours,' explain the UCT researchers. They negotiate with external structures, and try to get outside actors to help the settlement, especially local government, ward councillors and civil society.

Leadership takes different forms and is a critical link between the community and outside 'agencies', such as civil society organisations, social movements, or political parties. They report flooding events to the City, help distribute building materials ahead of winter, or emergency aid during a flood, and should be a voice for the community when the City considers infrastructure upgrades.

Each for themselves

Being able to organise in this way, a form of ‘social capital’, is critical to responding effectively. But all too often, people deal with the flooding individually and as households, rather than collectively.

Internal strife

‘Committees can be unstable, though, their membership changing rapidly,’ researchers explain. ‘Sometimes their authority is contested by residents or by rivaling committees. For instance, accusations of corruption might emerge.’

Indeed, power imbalances and internal conflict can block how effective these committees are in negotiating with the City’s bureaucrats or politicians, and can hinder service delivery. And corruption can occur at all tiers of governance, which is why transparency is critical.

‘But since there is mistrust between ward councillors, political party representatives, and sometimes even NGOs, the informal leaders have become significant intermediaries between local government and settlements,’ say researchers. So if a community doesn’t have an engaged leader, or if it isn’t plugged into a civil society network, they might not be part of collaborative efforts by the City to deal with flooding disasters. Indeed, mistrust hinders the kind of collaboration needed here – distrust between the people in these settlements and public institutions, between people in the communities themselves, and between citizens and local politicians.

Great expectations

Those who step forward for service are usually volunteers, putting in hours of unpaid time, and are expected to take on a number of sometimes conflicting roles. Their community expects them to ‘work upwards’ to negotiate with local authorities about the community’s needs, but their influence in government decision-making may be limited. The City, meanwhile, expects them to ‘work downwards’, rallying the community together at workshops and meetings.





The politicians

There are several tiers of elected officials, both within the City and in political parties active in the communities. Ward councillors are on-the-ground politicians, and the first line of contact between the community and the elected hierarchy in local government. They represent the ward committee, which is made up of various community based organisations.

The next tier up is the sub-council – a cluster of neighbouring ward councils – which is also instrumental in service delivery. These are administrative and political in that they are made up of elected officials and employed bureaucrats.

Ward councillors and councils have been criticised for not functioning well, for not having a clearly defined role, and for failing to work with their councils. They have also been known to be partisan in their delivery to communities, favouring those residents or communities who support their party.

The relationship between councillors and committees can be fractious, and councillors are often even seen as obstacles to working together. Some community residents complain that the councillors ‘disappear’ once they are voted into office, that they fail in their service delivery promises, or they might suspect corruption.

There is often a tension between the elected politicians and the employed bureaucrats at local government level.

The City’s administrative arms

The next tier of government is made up of the employed bureaucrats, who sit within those City departments that are responsible for different aspects of flood management. These are often spread across different directorates, which can lead to a ‘silo’ response.

The **Flood and Storms Planning Task Team** is responsible within the municipality for flood management decisions. It is chaired by the Disaster Risk Management Centre and streamlines the various departments, most notably: Water and Sanitation, Human Settlements, Environmental Health Services, Solid Waste Management, and Transport, Roads and Stormwater.

It is critical as it tries to overcome a silo-based approach by bringing departments together, to work towards the common goal of flood management.

The task team also carries out the winter preparedness strategy every year and deals directly with external communities and civil society organisations.



The helping hands

Many different civil society and non-governmental organisations (NGO) assist communities.

Some help the community become more resilient, such as iKhayalami, which has driven a 're-blocking' process aimed at community upgrades.

Others deal with education, such as running health and sanitation workshops. The Jungle Theatre Company has run programmes on behalf of the Disaster Risk Management Centre, to educate communities about flood and fire awareness.

Others – like the Red Cross Society, the Mustadafin Foundation and the Salvation Army – work with the City to bring disaster relief during flooding crises, such as distributing food and blankets.

These organisations need to be included in decision-making, problem solving and governance-related discussions.

Challenges of working together

Some of the biggest hurdles to these different areas of 'government' working together:

- **Top down:** the approach to managing flood risk is driven by local government. It is top-down, strictly hierarchical, centralised and technocratic.
- **Lack of capacity:** within the City's bureaucrats, amongst the politicians and within communities, a shortage of staff and skills, and insufficient legal and institutional frameworks.
- **Contested areas of responsibility:** between the City's different departments; between the City and residents (for instance, residents say the City must take responsibility for removing rubbish, but the City argues residents must not dump their household waste indiscriminately).
- **Political short-termism:** because the communities' committees have a high turnover of volunteers, and politicians come and go according to the election cycle, this blocks channels of communication and disrupts the momentum behind planning and implementation of flood management efforts.

Pulling UP our tail to **MOVE** *forward*

‘That is why we go backwards, not forwards. That is where everything goes down,’ says Monica Mjwana of Egoli, ‘but now we pull up our tail!’

Monica’s referring to division and conflict that divided the community of Egoli which, in her opinion, is largely to blame for the slow progress here. She speaks of the turn-around since the community voted for the leadership of the original committee, thereby dissolving a recently-formed second committee.

‘We elect committees in a right way (now). Write on small paper and chuck it in a box and they count the vote.’

The internal politics and division within Egoli make leadership stressful, says Monica. And the formation of a second committee, which aligned with the owner of the private land the community’s settled on, only made things worse. The mistrust and disunity of the past few years has damaged some internal relationships, but perhaps not permanently as people seem eager to see the wheels of change turn in their community’s favour.

Mama Vetkoek, as she’s known here because of her baking, believes that now there is only one Egoli committee, they will make progress.

Being on this committee isn’t for slackers. Committee members meet every evening during the week, between 7 and 8 o’clock.

‘Anybody who wants to go (and listen), can go,’ she explains.

If you want to help or complain this is the time and place to do it. It is at these daily meetings that the community discusses the pending winter rains and how to prepare for them.

‘We have to see to ourselves when the rains come.’

The community asks people to bring building rubble from construction sites that they can use to buffer their homes against the flooding.

‘When the rubble comes, everyone must get their rubble to build up the floor, fill it up with rubble. That is what we are telling them,’ she says. Monica explains how an incident amplified disunity recently, when the City delivered 100 rolls of sail to a community that needs four times that amount. Tempers rise when the distribution of resources means some get, while others don’t.

‘If you do something, you must do equal. Everybody in this place is a human being and must get what he has to get.’

Even though that incident was upsetting, Mama Vetkoek isn’t too worried. When the rain starts she will call a councillor who has been more than committed to Egoli, albeit outside of his ward area and representing a different political party.

‘He comes with his gumboots and sees the homes that are the worst flooded and sees what he can do for us. He is very good to us.’

The committee works closely with authorities, although many admit it hasn’t always been so. There seems to be some distrust, too, since some on the committee feel their local councillor didn’t meet his promises after getting voted in.

Whilst Monica’s expectations of their ward councillor are low, she is upbeat about how the Egoli community is engaging with the City.

‘God knows, *toyi-toyi* won’t help. People with brains must go and sit and talk with Patricia [de Lille, the Mayor],’ she says vigorously.

‘We sit here and shout ‘freedom’ – but freedom is over, Nelson Mandela is going down soon. We must use our own common sense now for our children.’

Linda Martindale





'You must work for the community'

Igshaan Adams, Egoli

'If you want to be a committee member, you must put your political party aside. There are different members of different parties in the community and in the committee - ANC, COPE, DA - but when it comes to committee work you must put your political affiliation aside.'

'I am not sure I will even vote again. They are all the same. We will see how they flood this place (near election time), they will come and make their promise. And once the guy has his first pay cheque, he will say 'now I can go on holiday'. The people who earn the nice money, they just don't show up.'



Charting a new way forward

The research done in these three Philippi communities shows that flood risk management in the context of the urban shanties calls for new ways of thinking. 'We need a shift away from centralised, hierarchical approaches to managing environmental risk if we want to address these complex problems,' the UCT researchers agree. But the alternative – a holistic, decentralised collaborative approach – is hard to design, implement and maintain.

Dealing with communities

It's important to be realistic about the constraints which communities and their leaders face. These steps might help build trust and cooperation as the City endeavours to work with communities.

- Understand the political conditions in each settlement, through speaking with different residents and leaders.
- Assess and manage the expectations on leaders, transparency, people's roles and communication channels regularly.
- Manage residents' expectations by not making broad promises.
- Ensure constant transparency and report backs, avoiding suspicion and gossip which heighten internal tensions.
- Be aware of possible internal conflicts, political agendas and the possibility of self-enriching intentions. Negotiate internal tension, perhaps using professional negotiators.
- Work towards a culture of mutual respect and never underestimate the residents' competence, their knowledge about politics or technical issues, and their capability to learn.

City-level shifts

In 2009, the City's Disaster Risk Management Centre established the Flood and Storms Planning Task Team. This was an important step in overcoming the 'silo' effect that comes with having several administrative departments responsible for different aspects of flood risk management.

However its efforts might be confounded by the fact that those different arms of local government still need to implement the task team's recommendations. UCT's researchers recommend:

- Closer cooperation between the task team and politicians on the ground.
- A coordinated, long-term approach to planning, implementation, and dialogue, in order to overcome short-termism associated with the high turnover of people both within the community's leadership structures, and the elected politicians.
- A more deliberate, systematic approach to fostering collaboration between the different departments in the City, the community and civil society, spearheaded by the task team.

- A 'horizontal integration' of departments, where people are trained in their respective areas. It's important to identify what skills are needed across teams.
- People must be encouraged to work together and participate in decision-making processes, and there should be a deliberate effort to allow opportunities for co-management.
- Spatial planning is critical, since urbanisation trends are pushing people into unplanned, high risk settlements. As more and more hard and paved surfaces are developed, there will be an increase in runoff of polluted water and an increased flooding risk.
- Better monitoring of ward and sub council structures, as they are the interface between the functional municipal officials and residents. The City must ensure that councillors are able to direct resources to communities, and that they are accountable to communities and the City.

Encouraging a 'governance' approach, as opposed to a 'government' approach, will help the City and the community respond better to the flood risk they face now, and will continue to face as the region's climate changes.

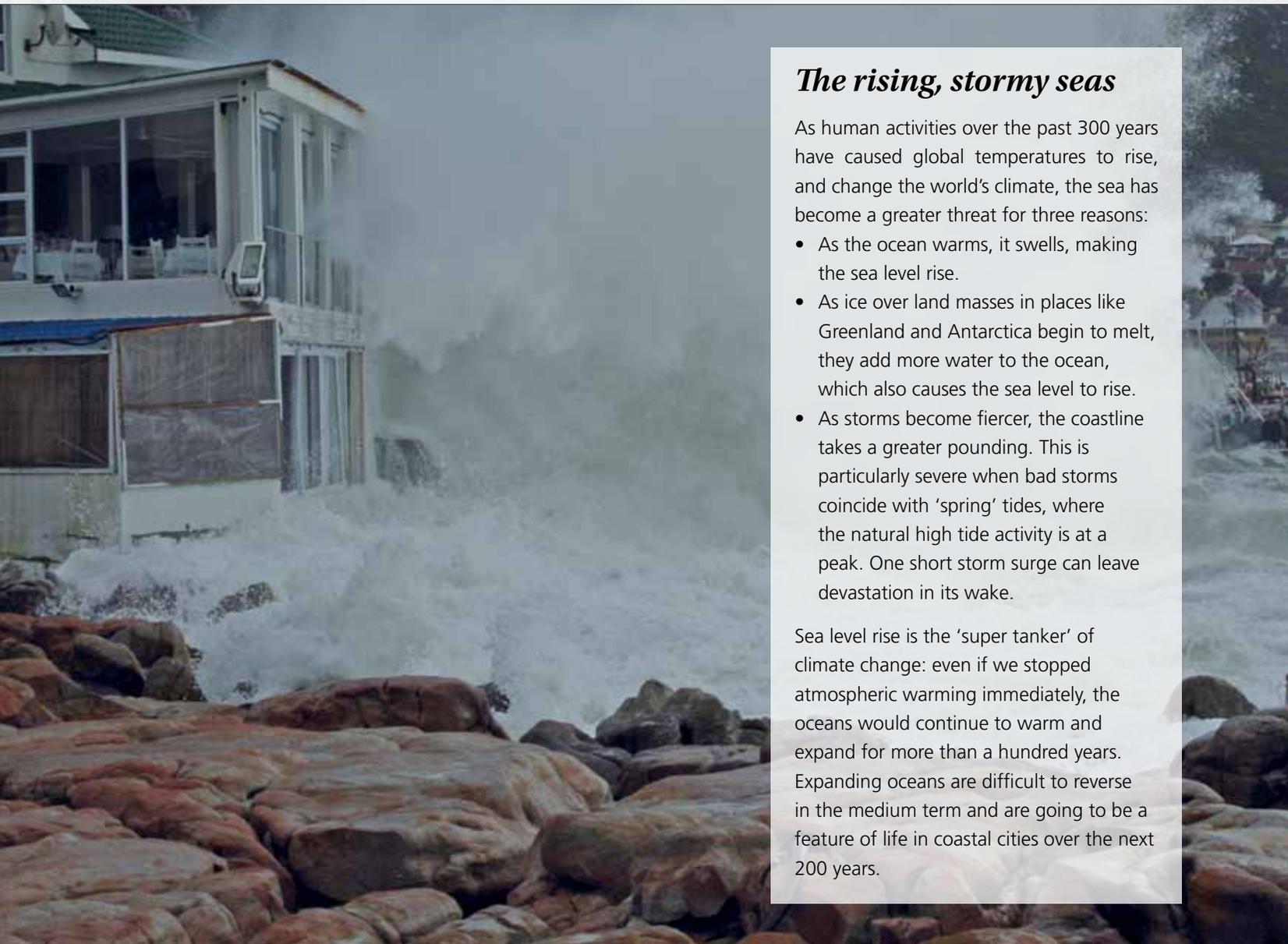
The City is up against its own plethora of challenges: immigration; the backlog of housing and service delivery; vandalism of existing services; fires and flooding which exacerbate already precarious living conditions for these poor communities; budget constraints; lack of land; and the enormity of the need within informal settlements.

Despite this, the municipality has indicated it is willing to foster collaboration across its departments, and to work with communities and civil society organisations.

The City is looking for solutions to flood risk. It is doing education campaigns. It's trying to buy privately-owned land so it can develop new housing areas. And it's prioritising at-risk areas for the appropriate flood risk reduction measures.

Right now, it will take everyone pulling together as the people of the Cape Flats face another winter of north-westerly fronts, heavy rain and what happens when those deluges hit the natural wetlands upon which so many poor communities are forced to settle on the edge of the Mother City.

CAPE of STORMS



The rising, stormy seas

As human activities over the past 300 years have caused global temperatures to rise, and change the world's climate, the sea has become a greater threat for three reasons:

- As the ocean warms, it swells, making the sea level rise.
- As ice over land masses in places like Greenland and Antarctica begin to melt, they add more water to the ocean, which also causes the sea level to rise.
- As storms become fiercer, the coastline takes a greater pounding. This is particularly severe when bad storms coincide with 'spring' tides, where the natural high tide activity is at a peak. One short storm surge can leave devastation in its wake.

Sea level rise is the 'super tanker' of climate change: even if we stopped atmospheric warming immediately, the oceans would continue to warm and expand for more than a hundred years. Expanding oceans are difficult to reverse in the medium term and are going to be a feature of life in coastal cities over the next 200 years.

The Cape coast is in a natural state of flux, the wind and sea constantly shifting sand dunes back and forth, reshaping river mouths, inundating the flats and receding again. Sometimes these changes are over decades, sometimes over thousands of years.

Now, human-caused climate change is making these natural forces act on the coastline with greater strength and speed, and sometimes even bringing new swell directions. This puts coastal dwellings and developments at risk from these threats from the sea.

You can't hold back the sea

In the past, most coastal municipalities believed that the first line of defence against a threatening sea is a concrete or rock line: sea walls, breakwaters made from the locally invented dolosse, gabions, and floodgates. But these 'hard' engineering solutions are expensive, technologically complex, often irreversible, and are costly to maintain.

They may not be effective in the long term. Giving a false sense of security, they encourage risky development behind them which, if the sea breaches them, can cause extensive damage.

Municipalities need to make decisions today that future generations will live with as they confront increasing inundation from the sea.

A step back from the rising tide

A better solution, most global experts agree, is one that involves human interactions at a social and institution level. Instead of throwing up a wall of concrete in the face of an encroaching tide, rather take a step back from it.

The answer? A 'set back line'.

What is a coastal 'set back line'?

This is a line along the coast, a protective 'buffer zone', in which development is either forbidden, or is strictly controlled. It calls for ecosystems to be restored and protected, so they can offer additional defence from an aggressive sea. It's something that needs to be clearly mapped out, and decreed through policy and planning regulation.

This 'soft', precautionary approach is robust and flexible, but implementing it has its challenges:

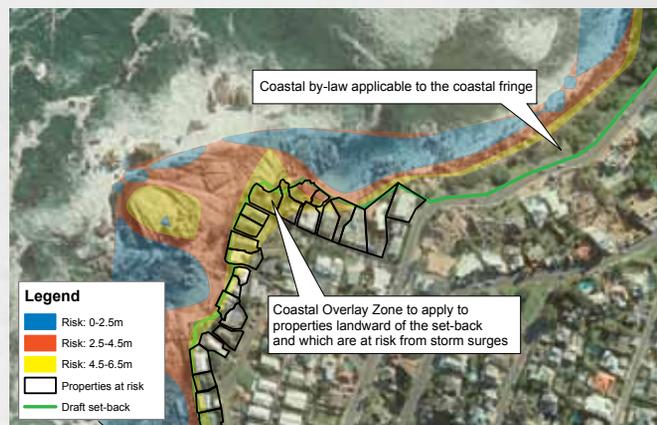
- Many different groups are vying for access to the coast: tourists, businesses, fishermen and other recreational users, conservationists, private developers, and the municipality which can get good rates from allowing development on such land, and so on.
- Historically, black South Africans were denied access to the valuable coastline. Addressing the resulting socio-economic inequality continues to challenge a shared vision for managing coastal development.

- Various government departments, at local, provincial and national levels, have overlapping roles, and have different approaches to managing the coast, interpreting associated laws, and defining a 'set back' line.
- Short-term gains overshadow long-term coastal planning and the necessary enforcement of regulations to steer the City in terms of managing coastal development or erosion and storm damage.

To respond appropriately, the City needs to rethink how it navigates this new and changing jurisdiction. It needs to work between communities to encourage shared notions of what is at risk, how much land to set aside as an appropriate buffer, and how this land will be acquired, managed and financed.



Vacant erven along Hout Bay's coastline at risk from storm surges. These erven have existing developmental rights. Sites such as these will require additional land use management mechanisms to address risk to these properties into the future.



Stylised representation indicating the set-back line (light green), the area between the set back line and the high water mark (yellow hashed zone) where the by-law will apply, and the area between the high water mark and a line inland of the set-back (total area in yellow) that will constitute the Coastal Overlay Zone in the City's new Integrated Zoning Scheme and have special land use and building regulations associated with it.

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