THE GRAVEYARD POND ENUMERATION REPORT

PHILIPPI, CAPE TOWN, JANUARY 2011

Picture: own

Flooding in Cape Town under Climate Risk (FliCCR)
University of Cape Town

Background

This research forms one of several parts of the larger research project FliCCR at UCT titled:"*The power of collaborative governance: Managing the risks associated with flooding and sea-level rise in the City of Cape Town".* This research project aims to understand how the city of Cape Town deals with flooding and sea-level rise at different levels (from local government to inhabitants in different areas), in order to suggest how collaborations between various actors can be improved.

The research project is funded by the 'Climate Change Adaptation on Africa' (CCAA) programme, which is a joint program of the International Development Research Centre (IDRC), Canada, and the Department For International Development (DFID), U.K [1]
The **CCAA program** aims to improve the capacity of African countries to adapt to climate change in ways that benefit the most vulnerable, and one of the guidelines is to involve the vulnerable themselves in the research. Thereby, the aim of this enumeration exercise was not only to extract information from settlement, but to involve them and other actors in order to enable learning and change from the grassroots.

In order to identify vulnerable settlements and to make use of NGO grassroots expertise, we collaborated with CORC Community Organisation Resource Centre (CORC)[2] and Slum Dwellers International (SDI)[3] in Cape Town, and with the community leaders from informal settlements that they had been working with.

This informal settlement was selected to be one of the three informal settlements that will be part of the research projects focus. It was identified with the help of CORC, who got us in contact with community leaders in another informal settlement. These community leaders carried out an observation research tasks for some weeks on flooding in Philippi, and they identified this settlement as one with severe flooding problems. They then introduced us to the community leaders in Graveyard Pond (or Sagwityi Street), and after some meetings we decided together to carry out the research here. Getting started with the enumeration process was one of the first issues we decided on doing.

Acknowledgements:
This report is written by Kevin Musungu (kevin.musungu@uct.ac.za) and Laura Drivdal (Laura.drivdal@uct.ac.za, phone: 021 650 4919 at the University of Cape Town.
Assistance and guidance has been provided by CORC / SDI and other researchers in the FliCCR research project.
The enumeration was carried out by six people all residing in the informal settlements. The enumerators received support and guidance during the enumeration from other community leaders that had carried out enumerations within their own informal settlement "Sheffield Road'.
If any contact is required with the settlement, one of the community leaders, Enoch Mandla Womxa, who participated actively in the process, can be contacted on 078 974 9687.

[1] http://www.idrc.ca/ccaa/
[2] http://www.sasdialliance.org.za/corc/
[3] http://blog.sdinet.org/?page_id=2

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1. Introduction

The Graveyard Pond is a small and fairly young informal settlement in Philippi, Cape Town. Many of the people living here have moved to this place from backyards, and they are not well connected to outside actors.

This report gives an overview over the statistics of the settlement. It includes information on the residents of Graveyard pond as well as stresses impacting on their livelihoods. In line with the objectives of CORC / SDI, this report is meant to not only provide data, but enable the inhabitants to address their problems as well as connect to and negotiate with other actors like NGOS and local government officials.

One of the most urgent issues seems to be that there are severe flooding problems in the settlement, especially since it is located in a detention pond. Additionally, as the graphs indicate that many of the inhabitants are unemployed (or have only part time jobs), dependant on child grants, are generally young and new to the area, they are particularly vulnerable to such natural disasters.

This report gives an analysis of these problems, in addition to mapping out statistics of the inhabitants.

2. Methodology of the enumeration

The survey / questionnaire:
The enumeration was carried out in October - November 2010, and it took five days to carry out all the surveys. In order to be able to collaborate with CORC / SDI at a later stage, the format of their questionnaire was used as a baseline, and more detailed questions on the flooding issue were added. There were some problems with the questionnaire however, as it was too long and contained some questions that the inhabitants found difficult to answer.

The enumeration process
One objective of the enumeration was that the people from the community were to carry out the actual enumeration.
Two community leaders from another informal settlement that had also carried out enumeration in their own settlement helped us to get started. We had a planning meeting where we went through the survey and explained how we were going to do this.
Four inhabitants, 2 community leaders from the other settlement, and 2 researchers participated, although the inhabitants did most of the work since they know the people and the area.
During the course of the survey, 279 shacks were enumerated. Approximately 20 shacks were missed because the inhabitants were absent because of work or travel.

Presenting back to community
After the enumeration was finished, we collected the questionnaires and filled in the data in the software program SPSS and mapping software ArcGIS. Using SPSS we extracted some key statistics and graphs that we presented back to the community at a meeting in the business centre in Philippi, which is close to the settlement. Everyone was invited, and approximately 50 people participated. One of the community leaders, who had also carried out the enumeration, helped us arrange the meeting. The people attending where obviously not that interested in the graphs, but more about what to do next and how we could help them to improve their situation. In line with the objectives of our research project, and with advice from CORC, we explained that we cannot carry out the development for them, but that they have to organize internally and take initiative and connect to NGOs and local government. The community leader assisted us here and used the opportunity to engage more of the inhabitants to do something together.
This report was finalized in January 2011, and was also handed back to the community leaders for validation, but no large changes were made as they were satisfied with the result.

Reliability and validity
One problem regarding reliability of the data is that the survey was targeting the household as a whole. Sometimes the heads of the households were at work, and another representative of the household had to answer. These representatives did not always know the answer to questions such as income and expenses, and consequently these questions did not get a high answering percentage. Additionally, there might be slight differences in the statistics if other representatives of the families where asked.
However, only the questions that seemed to be reliably answered are used in this report, and the validity of the key findings, maps and graphs represented here is satisfactory.

3. Key findings

Settlement Profile

Settlement name	The Graveyard Pond
Age of Settlement	Approximately five years
Structures	All Shacks
Population	Approximately 900 people
Number of Shacks	Approximately 300 shacks
Land Ownership	City of Cape Town
No. of individual toilet blocks	None
No. of communal toilet blocks	15 toilets and most use the neighbouring settlements toilets
Disaster experience	Most have experienced floods, some fires.
Most urgent needs	Flooding mitigation, toilets, electricity
Most urgent threats	Flooding, risk of electricity pylon

Other important facts, generated through other sources and conversations with inhabitants:

- The Graveyard Pond is located in a detention pond.
- The settlement is located under an electricity pylon, which could pose a significant danger to human life in case it breaks down.
- Satellite imagery from Google maps (compared over years) reveal that the settlement is recent and has increased the 5 last years.
- This informal settlement used to be together with the neighbouring informal settlement ("The Graveyard"), but split up and became independent with its own street committee.
- Many people mentioned that they had moved here from backyards, and it is the first time living on their own.

4. Analysis / Graphs, Tables and Maps

Statistical data was generated from the enumeration and the results are presented below.

4.1 Gender of head of house

It was found that 53,8% of the households had a male head of house and 46,2% had a female head of house. From the maps generated showing locations of the various households it was noted that there was no relationship between gender and location of the corresponding shacks within the settlement.

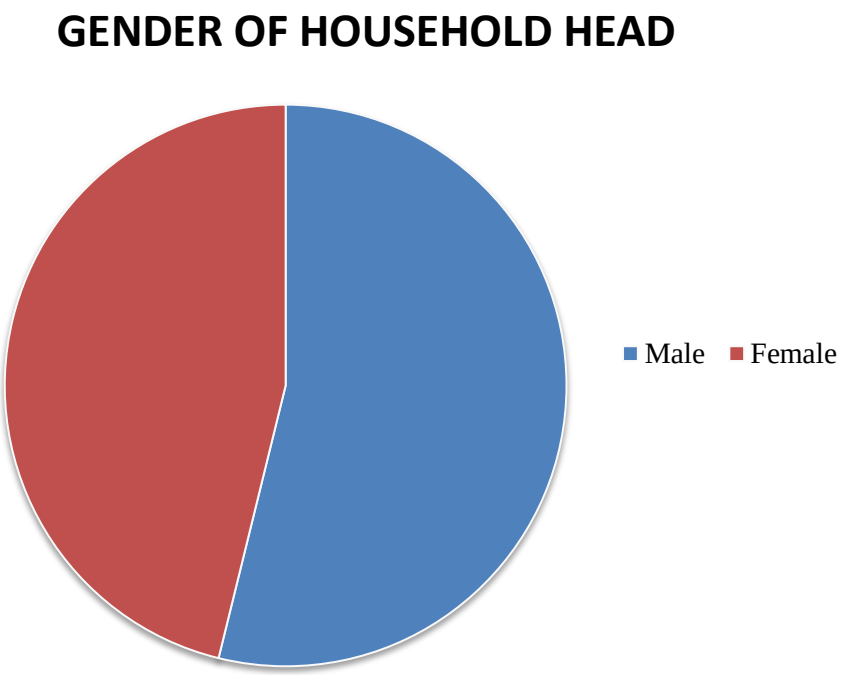

Figure 1. Gender of Head of Household

4.2 Average age of head of house and respondents

The average age of the head of house in Graveyard pond is 31years. Most of the heads of house are aged between 25 and 35, as the graph below demonstrates

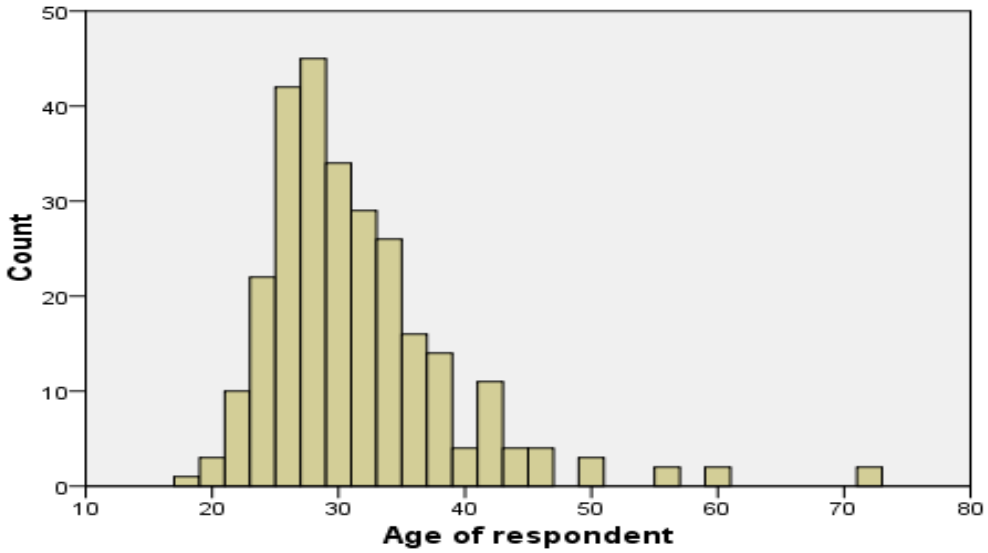

Figure 2 Age distribution of respondents

Regarding age groupings, the graph below demonstrates that the most common age group is 18 to 34 years, and that there are very few older people. This indicates that there were many people and couples that have moved away from their families.

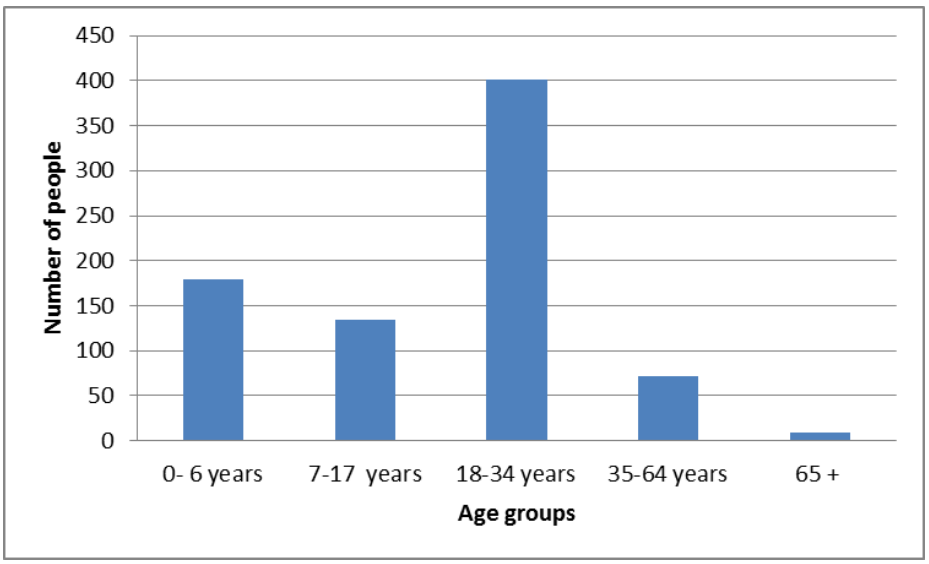

Figure 3 Age groups in Graveyard Pond

4.3 Number of residents per shack

On average there are three people per shack. The majority of shacks with three people are headed by females. Conversely, the majority of shacks with one resident are occupied by male residents. There were a few shacks with more than 4 residents.

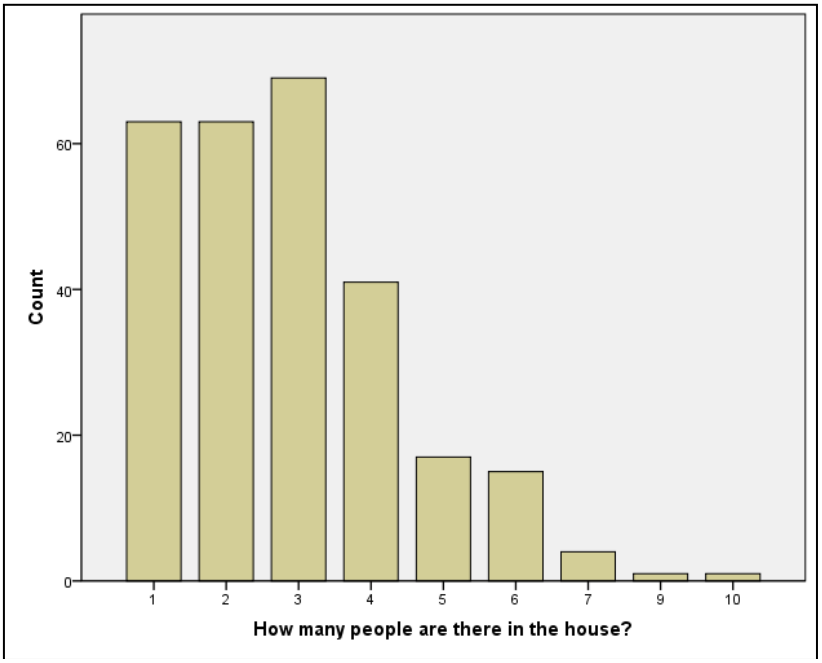

Figure 4 Number of people per household

4.4 Languages spoken in Graveyard Pond.

A range of languages are used in the settlement but the majority of the residents speak Xhosa(95 %). Other languages include Zulu(0.8%), Setswana (2.1%), Shona (0.4%) and Sesotho (1.7%).

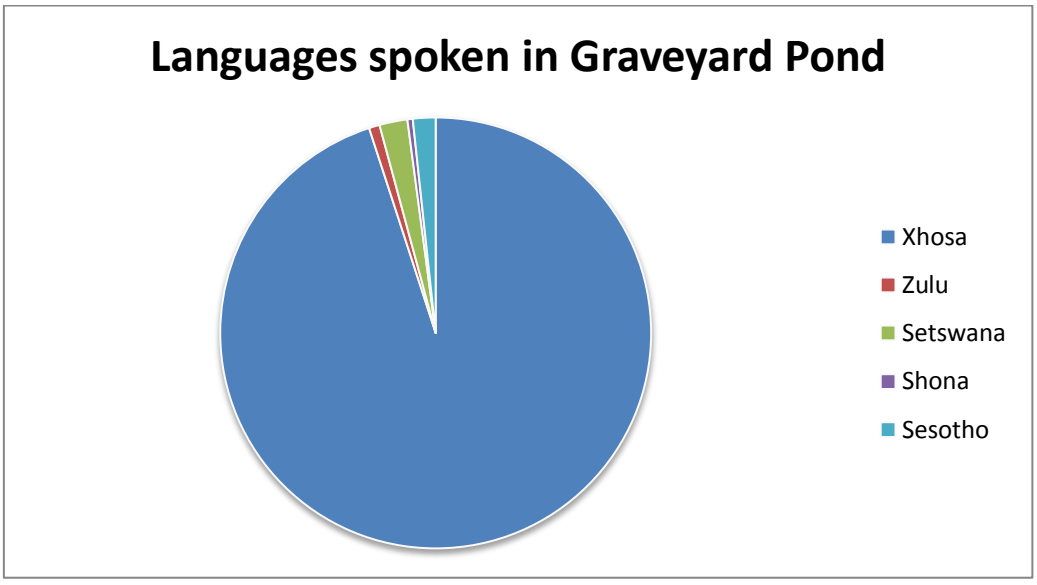

Figure 5 Languages spoken in Graveyard Pond

4.5 Rate of employment in Graveyard Pond

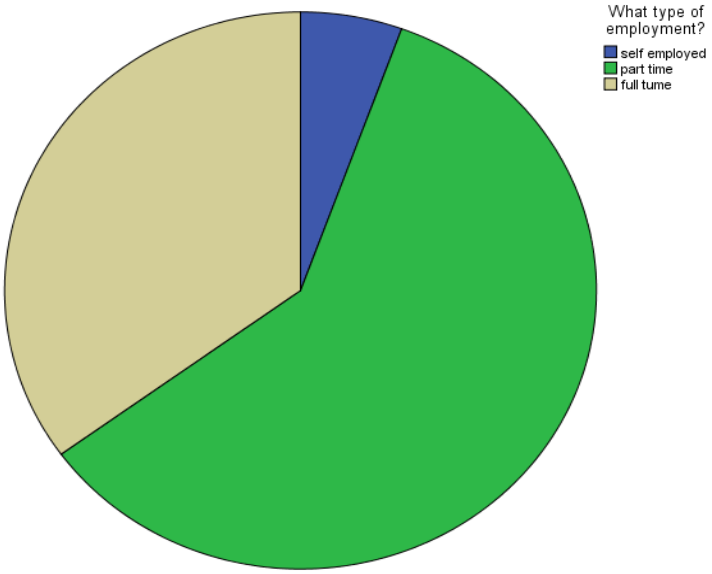

Figure 6 Forms of employment in Graveyard Pond

It was found that 63.7 % of the households in this survey had at least one person with some form of employment. However, only 8.1% of the households interviewed had two or more people employed.Most people have part-time jobs, as the figure above indicates.

4.6 Access of households to welfare grants in Graveyard Pond

Forty five percent of households in Graveyard Pond receive welfare grants. The majority of these grants are child support grants. These findings explain the high number of children between 0 and 7yrs found in the analysis of age groups in Graveyard Pond.

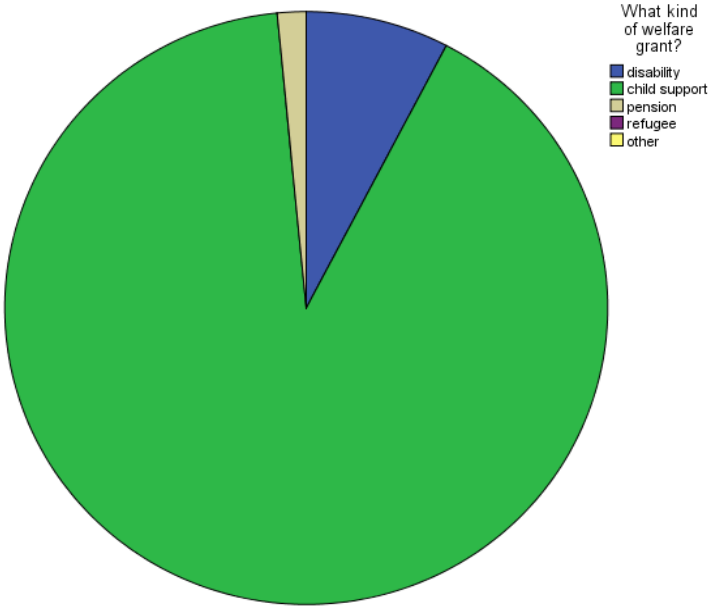

Figure 7 Types of welfare grants accessed by households in Graveyard pond

4.7 Previous location and length of stay in Graveyard Pond

Graveyard Pond is a young settlement in many ways, and the average length of stay here is 4. 5 years. Most residents in Graveyard Pond had either migrated from other settlements within Cape Town or from the Eastern Cape. Many commented that they had moved here from backyards in neighbouring settlements.

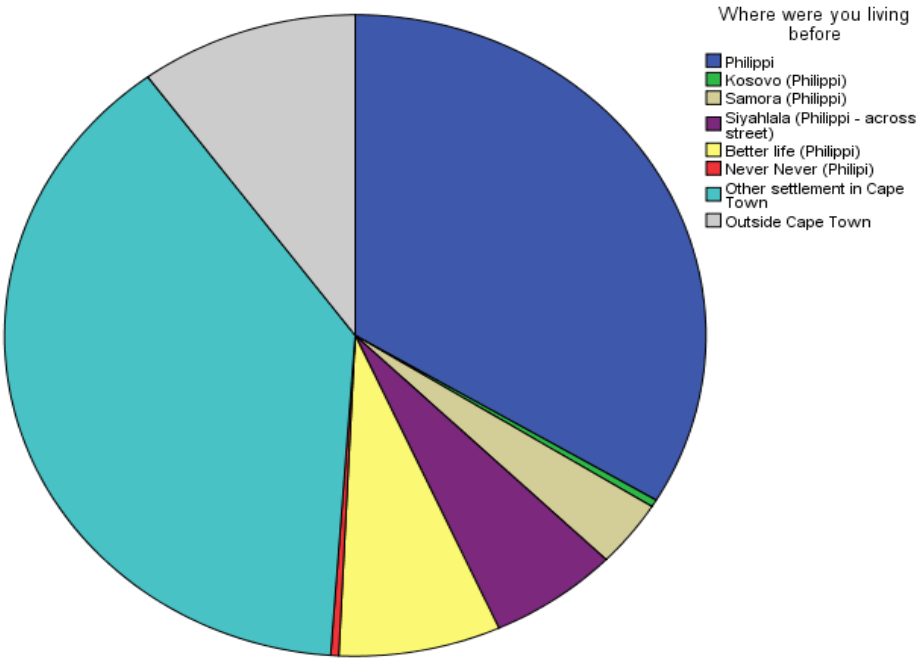

Figure 8 Previous locations of households in Graveyard Pond

4.8 Mitigation against flooding

In the settlement 94.6% of the residents have experienced flooding. Most residents reported consistent flooding every winter whilst others report that they experience flooding every time it rains throughout the year. The map below shows the types of flooding experienced.

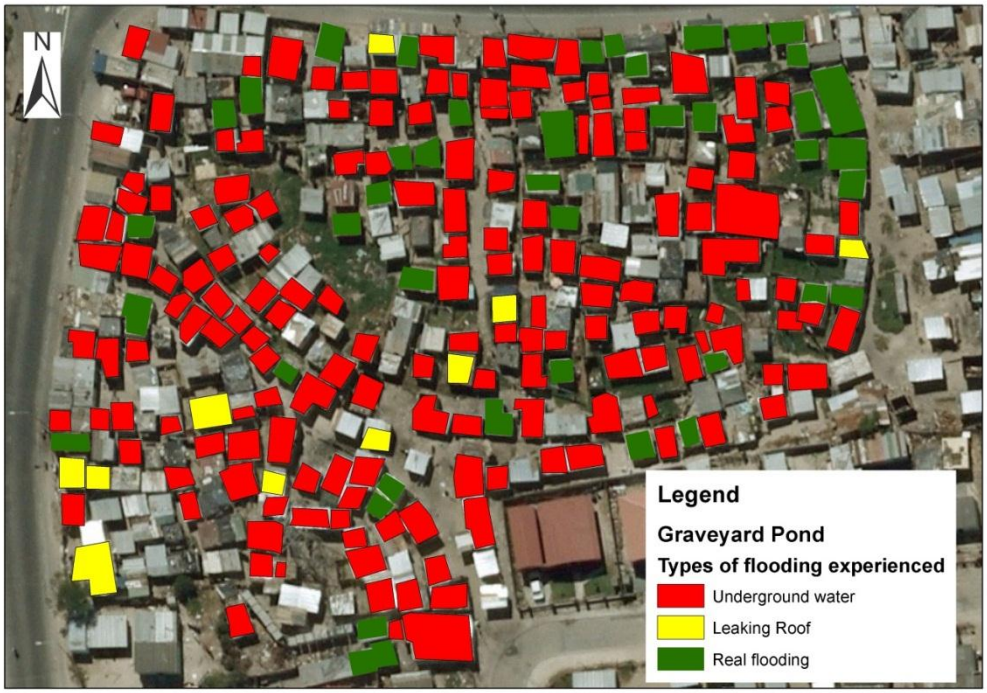

Figure 9 Types of flooding in Graveyard Pond

The picture below was taken the 15.th September 2010, showing some flooding in the paths of the centre of the settlement, after one night with rainfall. Some shacks were also flooded on the inside. During heavy rainfalls it gets worse than this.

Figure 10 Graveyard Pond after a night of light rains (own picture)

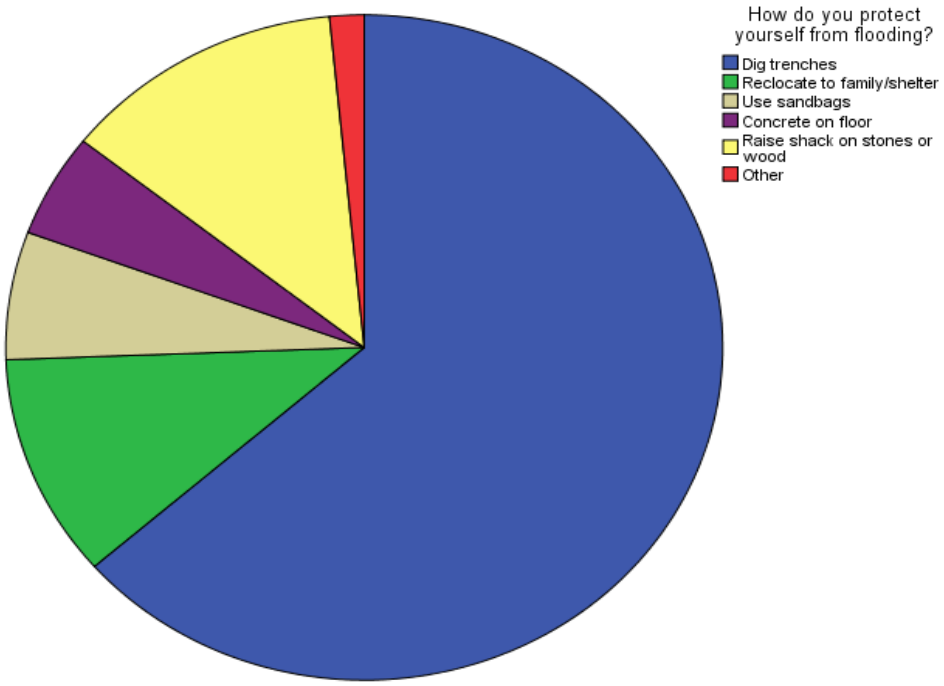

Figure 11 responses to flooding

The majority of the residents respond to flooding by digging trenches in order to channel run-off water past their shacks. The second most popular means of flood mitigation is elevating the shacks so that runoff water can flow beneath the shacks.

The choice of flood mitigation depends on the location of the shack within the settlement. The map below shows that most shacks on the periphery use trenches to channel runoff water from the roads and neighbouring suburbs towards the centre of the settlement.

Figure 12 methods of flood mitigation

Consequently, the centre of the settlement serves as a catchment area. Therefore, the residents in the centre of the settlement elevate their shacks and also use sandbags and concrete floors to reduce the effect of the rising underground water that floods their shacks. Approximately 70% of the residents of Graveyard Pond stated that their shacks were flooded by rising underground water.

4.9 Sanitation and disease

There are only 15 toilets in Graveyard Pond. These toilets are located in the South Western area of the settlement. Approximately 52% of the residents use bucket toilets. The residents on the periphery of the settlement use the toilets in the neighbouring settlements. The refuse is often poured into an open storm water drain in the settlement since it is laborious for residents in the centre of the settlement to walk to the toilets. Figure 13 shows the types of toilets being used in Graveyard Pond.

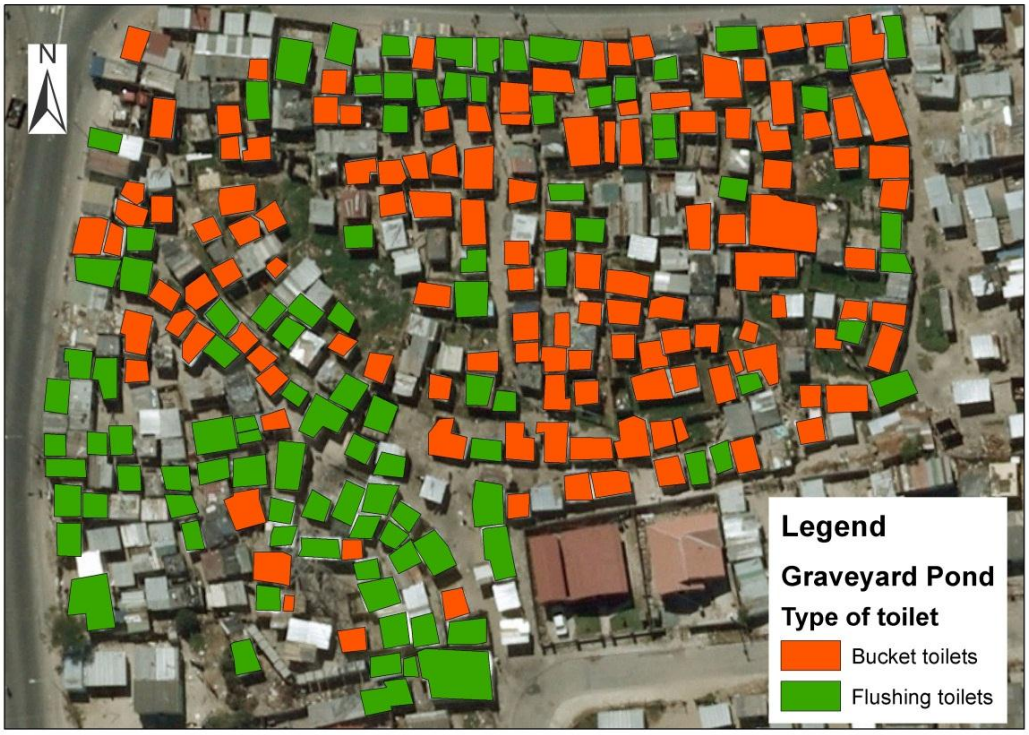

Figure 13 Types of toilets used in Graveyard Pond

A number of residents suffer from disease after floods. It was found that 15% get rashes and 28% suffer from running stomachs after a flood. It was noted that most of the respondents that suffered from rashes were located within the proximity of the storm water drain going through the settlement. The map below shows a five meter buffer around the storm water drain and the shacks prone to rashes after every flood (figure 14).

Figure 14 Incidence of rashes in graveyard Pond

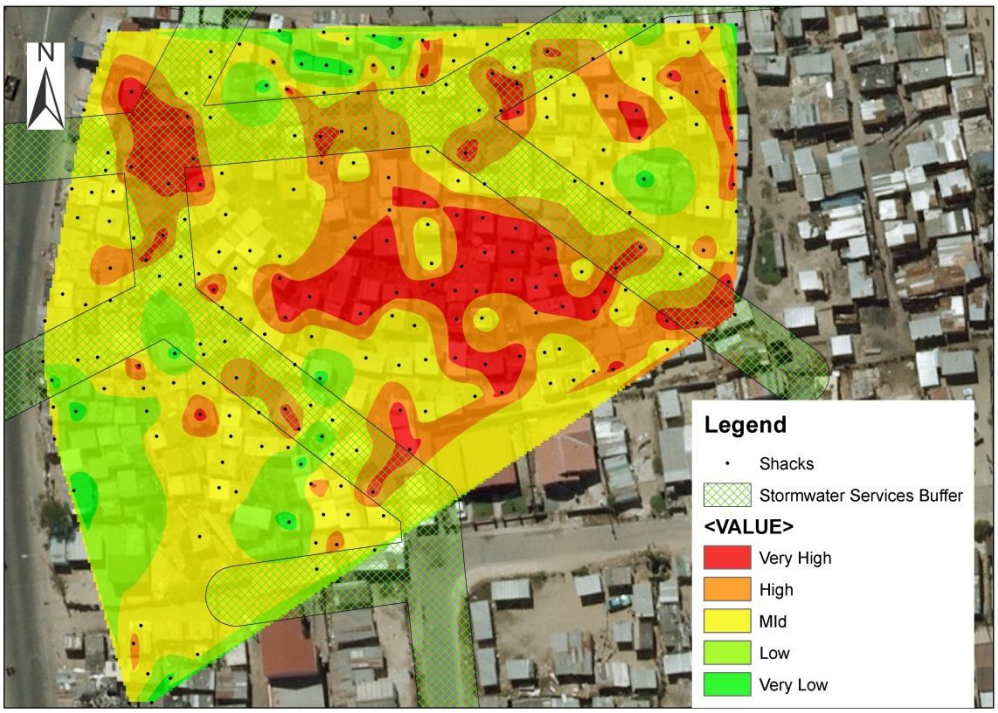

Figure 15 Location of disease hotspots

The map above (figure 15) shows that the northern nodes of the storm water drain and the wet central part of the settlement are particularly disease-prone sections.

4.10 Other hazard: fire

In addition to flooding, 41 % of the respondents stated that they had experienced fire. The map below shows that the majority of fire-prone shacks are located at the South Western area of the settlement. Most of these shacks are close to the fully serviced neighbouring settlement

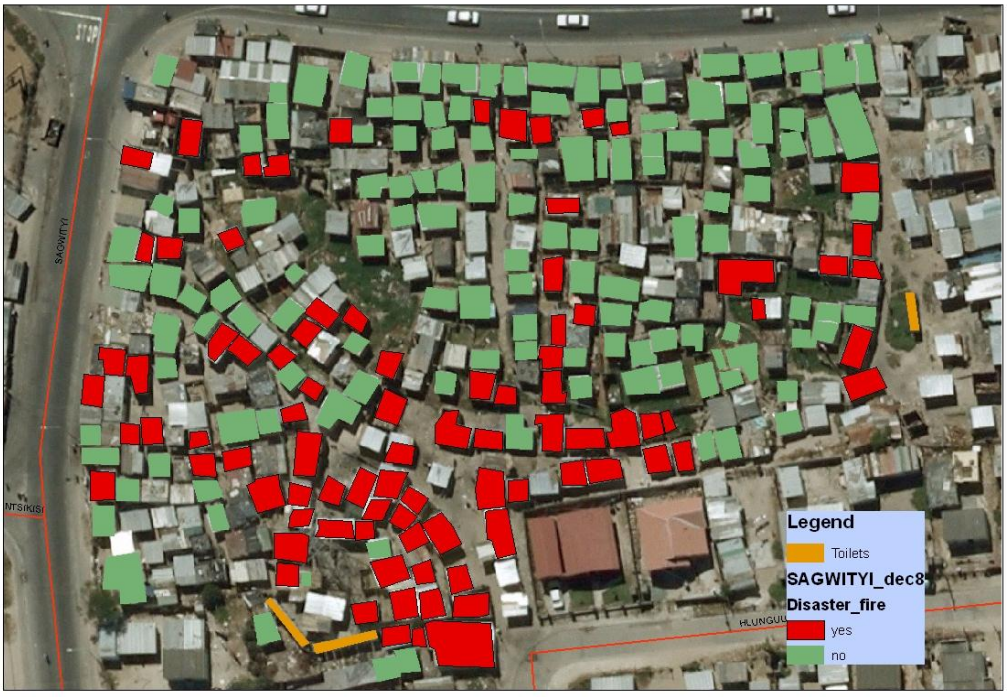

Figure 16 Incidences of fires

5. Summary

There are a number of problems currently experienced in Graveyard Pond. The main issues revolve around flood mitigation, the lack of toilets and lack of electricity.

The risk of flooding is particularly high with since as many as 94,6 % of the respondents indicated that they had experienced it. In addition,, impressions from observations we made through visiting this settlement regularly confirmed to us that this place seems to be particularly badly affected (compared to many other settlements).

The absence of toilets may be contributing to the sanitation and disease in the community. Also, the lack of electricity may be a catalyst for the fires in the settlement.

In addressing the main issues identified here, any consequent problems will also be implicitly addressed. The results from this enumeration show that there is no single solution to solving the problems in Graveyard Pond. Rather, through collaboration with different actors the community can be empowered to build on the current mitigation techniques and adopt other methodologies to improve the current situation.

6. Appendix: Survey form

Settlement ENUMERATION

This enumeration survey collects information on housing conditions, expenditures (and income if possible), employment and sanitation in your community. Please co-operate with the enumerator to fill in this questionnaire.
This form asks for the following:

- Basic information about the people who are living in your house
- Specific information about this house and its occupancy
- Specific information about flooding, sanitation services and health conditions.

Thank you for your co-operation.

Household Details and (Data)

1) **Shack Number** ☐

Occupant <u>of structure:</u>
Surname _____ **Names** _____

2) Age ☐

3) Gender of the head of the household: **Male** ☐ **Female** ☐

4) Home Language _____

5) How many people stay in your house? **1** ☐ ☐ ☐

6 -10) How many people in the house are… **0 - 6 years** ☐ **18 – 35 years** ☐

7 – 17 years ☐ **36 – 64 years** ☐

65 + years ☐

11) How many people attend school? ☐

Employment, Income & Expense

12) How many people are employed in the house?

0 ☐ **1** ☐ **2** ☐ **3** ☐

13) What type of employment are they involved in?

Self Employed ☐ Part time/Casual ☐ Full Time ☐

If unemployed list skills (If any):_____

14) Do you receive any kind of a welfare grant? Yes ☐ **No** ☐

15) What kind of grant do you receive?

Disability ☐ Child support ☐ Pension ☐

Refugee ☐ Other ☐

16) How many people have any form of income in your house?

0 ☐ **1** ☐ **2** ☐ **3** ☐

17 -19) How much are the main expenses per month?

1. Food R ☐ **2.** Electricity R ☐

3. Transport R ☐

20) What type of transport do you use when going to work?

Walk ☐ **Private** ☐ **Taxi/ Bus** ☐ **Train** ☐

21) How far is the place of employment (or where the household head gets the income)?

(Hours, Minutes of TRAVEL or WALK) ____ Hrs ____ min

Nature of house

22) Use of structure: Residential only ☐ **Church** ☐ **Pre –school** ☐

Spaza ☐ **Other** ☐

23) How many rooms does your house have?

1 ☐ **2** ☐ **3** ☐ **4 +** ☐

24) Do you own a car? Yes ☐ **No** ☐

Eligibility for Housing Subsidy

25) Were you ever approved for a housing subsidy? Yes ☐ **No** ☐

26) Would you like to state your income level for the purpose of understanding how many households in the community can apply for subsidies? **R** _____

Disaster & Relocation History

Disaster History

Have you ever experienced the following disasters when staying at this settlement?

27) Fire Disaster Yes ☐ **No** ☐

28) Flooding Yes ☐ **No** ☐

29) Evictions Yes ☐ **No** ☐

30) If your answer to 5.1 (a) (ii) was YES, what type of flooding affects you?

Under ground water ☐ **Leaking roof/wall** ☐ **Real flooding** ☐

31) for how long does your house remain flooded?

½ day ☐ **One day** ☐ **more than one day** ☐

32) if you have experienced flooding, which of these mechanisms are the most effective:

Dig Trenches ☐ **Relocate to family/shelter** ☐ **Concrete Floors** ☐

Raise Shack on stones or wood ☐ **Other** _____

33) If your answer to 29 was NO, do you think you are at risk to flooding? _____

If yes, why?

_____

34) Has the community tried anything to reduce the effect of flooding?

If yes, what? Dig Trenches ☐ **Use Sand** ☐ **Raise structures** ☐

Other:

_____

35) Have you ever received any warnings or help when flooding**? Yes** ☐ **No** ☐

If yes, from who? **Municipality** ☐ **NGO** ☐ **The community leaders** ☐

Neighbors ☐ **Others**_____

37) Do you call any authority during a flood**? Yes** ☐ **No** ☐ If yes, who? _____

38) What do you think could be done to reduce the effect of flooding?
Dig more Trenches ☐ **provide sand** ☐ **Provide building material** ☐

Relocation ☐ **Other** _____

Migration History
39) How long have you lived in this settlement? ☐

40) Where were you living before you came here? _____

41) How long have you lived in Cape Town? ☐ **Foreign** National? ☐

42) Why did you choose this area? Close to family ☐ Close to friends ☐ Close to work ☐

Other _____

Health & Sanitation

43) Which toilet do you use**?**
Bucket System Toilet ☐ **Water System (Flushed)** ☐ **Other** ☐

44) How many people use this toilet? About _____people

45) What health facilities do you have access to? Traditional Healer ☐ Clinic ☐ Other ☐

46) What health problems have you or your family suffered after a flood?

Cough ☐ Flu ☐ unning stomach ☐ ☐
Other_____

49) Do you have any other things you want to say? Please give comment:_____

Please Note: *All Enumerators have to write their names including dates during the process.*

THANK YOU! **ENKOSI!** DANKIE!

ENUMERATOR:_____
CODE:_____ **DATE:____/ _____/ 2010**