Theatre for Change:

Climate Change Knowledge Translation in a Peri-Urban Context

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Abstract

The negative effects of climate change are contributing to the growing complexity of issues challenging livelihood sustainability and are further threatening already vulnerable communities. In response to these challenges, new means of conceptualising problems needs to be investigated so as to adequately deal with the multi-dimensional issues that arise. Central to this are means of communication and participatory interaction with vulnerable communities in the development of adaptation strategies. Theatre has been identified as an effective means of inspiring change through a process of critical self-reflection and personal empowerment, making it a pertinent tool for climate change communication.

This research demonstrated how theatre was used in the process of knowledge translation for climate change adaptation within the community of Amaoti, KwaZulu-Natal. Knowledge was gathered from the community through two processes; a vulnerability analysis that examined five main vulnerability components, and a theatre engagement process that resulted in the production and performance of a play, *Fish Out of Water*. The vulnerability analysis – conducted through a selection of participatory rural appraisal tools - determined that the community was particularly vulnerable with regards to water. In addition to this, it faced a series of social challenges, including high levels of disunity, high crime rates and poverty. This analysis was central to the development of adaptation strategies, which *Fish Out of Water* communicated through its performance, contextualised in the translated vulnerability knowledge.

Responses to the play were analysed, indicating that the climate change information had been successfully communicated and that theatre itself was an effective means of communication. In addition to this, it was determined that this process had also contributed a greater sense of awareness of social issues and had inspired people to take actions to change their behavioural patterns. New social considerations were made, contributing to a comprehensive understanding of situational dynamics that could inspire change.

While positive conclusions were drawn from this with regards to the use of theatre in climate change communication, significant challenges were experienced during the process indicating a series of more fundamental issues that need to be addressed. High levels of apathy, difference of value systems and constraining family-dynamics need to be taken into account if the implementation of such processes is to be successful.

Declaration

I hereby declare that the research presented in this dissertation is of my own investigation and has not otherwise been submitted in any form for a degree or diploma in any university. Where use has been made of the work of others it is duly acknowledged in the text.

Signed:

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Acknowledgements

For as long as I can remember, my mission in life has been to make a positive and significant contribution to the progression of the peoples of this planet. I believe that poverty and extreme suffering should be overcome, that injustices should be made intolerable, that people should be free to discover their own beauty and happiness. It is my wish on every star, my dreams, my being.

This work is one step in, what I trust, is the right direction. It is so much more than a dissertation, or a master's degree; it is a representation of me, of my thoughts, my struggles, my goals, and my passion. The process of creating this work has been unlike anything I have ever experienced; it has been largely traumatic – it has been demoralising, all-consuming, frustrating, and painful. It has made me question things about myself that I really did not want the answers to. And then one day it was done and the enormity of the work, its magnitude, interesting nature and uniqueness, overwhelmed me. All the obstacles, fights, tears and sleepless nights seemed frivolous, feelings of anger replaced by new found energy, stronger conviction, and a great deal more knowledge and understanding. It was a gift that only now I see.

Of course, this is a not a journey that I have travelled alone and it has been through the guidance, patience and support of so many people that I am able to write this today. While it is impossible to mention them all, my sincerest gratitude goes out all the same. I would like to acknowledge and thank the following people in particular.

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And so, here we are. What I thought was to be a grand finale, the final closure of a long chapter in my life, turns out to be only the beginning of an even more exciting one. There is work to be done. There are mindsets to be shifted. There are wondrous, endless possibilities to explore. There is a world to change.

Let the good times roll.

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CHAPTER 1
INTRODUCTION

1.1   Introduction

There are two fundamental responses to the challenges presented by global climate change: mitigation and adaptation. Traditionally, mitigation has received much greater attention than adaptation within the climate change community due partly to the international policy framework within which both concepts are negotiated (Ravindranath and Sathaye, 2002). The United Nations Framework Convention on Climate Change (UNFCCC) states in Article 2 that its primary objective is the "stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" (UNFCCC, 1992: no page). While it can be argued that the level at which human interference becomes dangerous is, in part, determined by adaptation activities (Parry *et al*, 1996; Smit and Pilifosova, 2001), facilitating adaptation to climate change is mentioned as a less prominent position in the UNFCCC. The same holds true for the Kyoto Protocol, which is marked by non-specific provisions to facilitate and evaluate adaptation measures, as opposed to the quantitative limits for greenhouse gas emissions (Ravindranath and Sathaye, 2002).

While there is unarguably a need for mitigation, more comprehensive consideration of adaptation in response to climate change needs to occur. There are several reasons for this. Firstly, given the inertia of the climate system and the amount of past greenhouse gas emissions, the earth is already bound to a certain degree of climate change which cannot be prevented (Fussel and Klein, 2002), despite the valiant efforts of the most ambitious emission reducers. Secondly, the manifestation of emission reduction effects can take several decades, whereas adaptation measures take effect almost immediately. The impacts of climate change are already being observed and more impacts are inevitable, thus there is a need to include adaptation as an essential component of climate change policy (Prowse and Scott, 2008). Thirdly, adaptation strategies can be implemented at a variety of levels within society, including locally, nationally and regionally, and thus their efficaciousness is less dependent on the actions of others (Fussel and Klein, 2002).

While the wealth and excess of the planet's rich drive the emissions responsible for global warming and climate change, it is the economically marginalised who will be hardest hit by the environmental shocks which are the inevitable consequence. The climate crisis, and the reasons why it is one of the biggest moral questions of our time, boils down to social injustice, and the utter

unfairness of the suffering inflicted on the carbon emission 'innocents' (Huq and Ayers, 2007; Joubert, 2008).

Countries which face the greatest dangers from the physical impacts of climate change – mainly in South Asia and sub-Saharan Africa – are swiftly realising that adaptation is becoming an increasingly urgent issue. Climate change vulnerability is closely linked with poverty, as the poor are often dependent on economic activities that are sensitive to climate, for example agriculture and forestry, and changes in these conditions could directly impact productivity levels and diminish livelihoods. Africa has more climate sensitive economies than any other continent, with a high number of rural dwellers dependent on natural resources (Denton *et al.*, 2000; IPCC, 2001; Kikar, 2000). It is expected that there will be an increase in seasonal temperatures and altered patterns of precipitation, increase in the severity and number of extreme events, such as drought, heavy rainfall, and floods. While some people may be in a position to take advantage of these changes, the majority are vulnerable. Consequently, it is of utmost importance to understand how different societies adapt and how successful adaptation can be facilitated, which is critical for sustainable livelihood security (Burton *et al.*, 2002; Thomas *et al.*, 2005).

While the development of such adaptation strategies is crucial, problems that resist unilateral solutions persist. One reason for this is that our ability to think, communicate and learn is outdated, resulting in the progression of problems rather than solutions (Richmond, 2006). While the network of interdependencies strengthens, our ability to think dynamically about these interdependencies remains static. Further, as the gap between the nature of our problems and our ability to understand them grows, we are subject to facing increasing difficulties on multitude and increasing fronts (Richmond, 2006). To close this gap, it is important to develop effective strategies best suited to dealing with these dynamics.

Development communication is essentially described as the "building of capacity amongst individuals and groups to engage in constructive actions for development" (Burton in Stilwell *et al.*, 2001:215) and thus its importance cannot be emphasised enough. A key element to achieving this level of communication is participation; engaging with communities to explore their own realities and beginning the process of developing constructive steps to improving life situations – adaptation in the true sense. As explained by Rahman, (1983:29) "through collective self-reflection of their experiences and problems, people become more aware of the decisions of their reality and what can be done by themselves to transform it".

Theatre for development is about engendering learning through the use of the performing arts, both to inform and teach, and to develop sustainable life strategies aimed at addressing particular

challenges. It deeply involves people in "identifying issues of concern, analysing current conditions… identifying points of change, and analysing how change could happen…" (Prentki and Selman, 2000:8), the very philosophy that is required to develop effective adaptation strategies to climate change.

What is perhaps most important is to truly understand that theatre's "multivocal, embodied, shapeshifting qualities" (May, 2005:100) make it a felicitous tool for exploring questions of identity and community, of the environment and of the human engagement with it. To this extent, theatre has the ability to reconstitute the world and to re-conceive our notions of community and interaction in such a way that the boundaries between self and other, nature and community, all begin to dissolve. Theatre enables people to discuss issues in a safe environment and to rehearse action for change in a world that is clearly in need of revolution of both action and thought. To this extent, and through the ability of theatre to re-orientate people's behavioural patterns, it should be considered as a pertinent tool in contributing to the mutual sustainability of nature and humanity, and its role in climate change communication needs to be explored further.

1.2   Research Question

It has been argued that "the challenge of sustainability that faces our species is fundamentally about dealing with complexity and systems... that the situation we find ourselves in is a consequence of the inability of normal disciplinary science to deal with systems issues" (Kay and Foster, 1999). Indeed, Cilliers (in Burns and Weaver, 2009) further comments that this complexity, including those pertaining to sustainable development, makes it extremely difficult to find a framework within which to conceptualise problems and that "there are wide-spread misgivings about the effects of staying within a conventional scientific framework" (Cilliers in Burns and Weaver, 2009:39). While development has largely been limited to the technical sciences, investigations need to be made into how different disciplines can be integrated to address issues of sustainability more comprehensively, to find a strategy of thinking that is "neither too coldly positivistic nor too dreamily new-age" (Cilliers in Burns and Weaver, 2009:39). Belief and emotions are often neglected elements within development and this research aims at demonstrating how different disciplines – predominantly the creative arts – can be integrated to understand development more inclusively. The role of the arts in development has been overlooked. Particularly overlooked is its inclusion in development which will not only increase chances of true sustainability, but create a shift in consciousness that is sorely needed for the advancement of the world. Of particular interest to this research are perceptions of vulnerability, based on the different belief systems that people operate within and the life experiences that they have had. Given the

nature of theatre as a malleable tool that operates on the basis of personal circumstance and experiential learning, it could prove to be an effective tool in exploring issues of vulnerability and communicating messages of climate change adaptation.

To truly address the complex challenges facing the planet, mindsets need to be changed, innovative techniques need to be practiced, and recognition needs to be given to the elements that drive the human spirit and inspire people into action. While this research does not claim to achieve this in its entirety, it is an attempt to begin the processes of shifting traditional mentality and demonstrating the power of combining disciplines in order to achieve sustainability.

In response to this challenge, the primary research objective for this thesis is to:

> Demonstrate how theatre can be used in the translation of basic science and vulnerability knowledge for climate change adaptation.

To achieve this, a number of key questions are explored and responded to. These questions were:

1) What information, based on expert and community knowledge, needs to be communicated to communities?

2) How can theatre be designed to render it an effective communication mechanism?

3) How can such a communication mechanism be implemented?

4) How can such an implementation be evaluated?

5) Is theatre an effective way to communicate that knowledge?

1.3 Research design and methodology

This research was conducted making use of a project based study. The context of this study and the methodological framework that it employed is discussed.

1.3.1 Context of study

The Advancing Capacity to support Climate Change Adaptation (ACCCA, 2009) project seeks to bring stakeholders and scientific communities of the developing world together to enable and support effective adaptation decisions to reduce vulnerability to climate change. It draws on lessons learned about communicating climate risk information in clear terms that are relevant to decision-makers; addressing climate risks and adaptation in an integrated, multidisciplinary way; emphasizing the importance of engaging stakeholders substantively; and highlighting the long-term benefits of partnering institutions from scientific and policy communities for understanding and

managing climate change risks. ACCCA is currently supporting 19 pilot actions in 17 countries across Africa and Asia, and aims to achieve the following objectives:

- Identify and prioritize climate risks to stakeholders and the climate influenced decisions that they face;

- Assess available knowledge about risks and adaptation opportunities, as well as synthesize the knowledge in terms that are directly relevant to stakeholder concerns and decision-making needs;

- Develop, test and disseminate risk communication materials that are designed to assist adaptation decisions;

- Use the risk communication materials in stakeholder forums to develop recommendations for climate change adaptation and promote their adoption; and

- Identify critical knowledge gaps that impede effective adaptation decisions and design assessment activities that would generate new knowledge to fill them.

The research for this thesis intersected these five objectives in the following way:

- Identifying and prioritising climate risks, through a vulnerability assessment;

- Assessing available knowledge about risks and adaptation opportunities, through research and a literature review;

- Developing, testing disseminating risk communication materials, through the use of a play developed and performed by the local community; and

- Identifying critical knowledge gaps, through an assessment of the findings of the research.

Using the risk communication materials in stakeholder forums to develop recommendations for climate change adaptation was within the scope of this study.

To achieve the objectives of this project, the eThekwini Municipality selected the community of Amaoti to serve as a case study. Amaoti is located in the northern part of the eThekwini Municipality and was selected as it is considered a vulnerable community; it is marked by a high number of informal settlements and faces significant development challenges, the most predominant of which are water and sanitation. A full situational analysis of the community, used to explore these challenges and possible responses to them, will be discussed in Chapter 4.

The author of this thesis is an employee of Golder Associates Africa and acted as project manager for the ACCCA project. As such, all research conducted was done so by the author and elements of this thesis have been submitted to the eThekwini Municipality, and subsequently the United Nations, in report form for their review, as per the contractual agreements of the project.

1.3.2   Methodology

The methodology operates within the conceptual framework of sustainable livelihoods analysis. Sustainable livelihoods analysis is a useful tool in that it takes into account the multidimensional and complex relationships between physical and social environments, while highlighting the vulnerability context in which decisions regarding livelihood strategies takes place (Castro, 2002). Operating within this framework is practical when assessing vulnerability to climate change, given the complexity of the topic and the far reaching negative implications that it may have.

To answer the five research questions, the research was divided into two main processes: a social vulnerability analysis and a theatre for development process. The latter was informed and influenced by the former and resulted in a play.

For the vulnerability analysis, a number of key tools were used, largely falling into Participatory Rural Appraisal (PRA) techniques. These included a stakeholder analysis, a survey, focus group discussions, rich pictures, a timeline and theatre for development. Once this data had been collected, it was then analysed in two ways. Firstly, a quantitative analysis was made of the statistical data, namely that from the survey, using Microsoft Excel. From the literature review conducted, indicators were developed that enabled the statistical information to be ranked, hence a vulnerability ranking system was developed. Secondly, the data collected from the other tools was qualitatively analysed using content analysis techniques. In this way, once the data had been gathered, it was organised and put into a database according to the different themes that emerged from the process, which allowed for an overall understanding of the data to be captured. The data was then divided and categorised into these emergent themes, lending itself to their exploration upon which further understanding was built. With this comprehensive understanding of the data and the emergent themes, it was then possible to synthesise the information and draw conclusions. For the theatre development process, a number of theatre workshops were held to gather information that determined the content of the theatrical production that was performed, named *Fish Out of Water*. An analysis was performed of the theatre for development processes and a survey conducted subsequent to the play performances to determine if theatre was an

effective means of communication. The selection of these tools and their application is discussed in greater detail in Chapter 4.

1.4   Limitations of the study

While this study makes an attempt at identifying factors that need to be taken into account for the development of adaptation strategies, it should be understood that this is only within the context of the study area. This study is limited to the objectives of the ACCCA project, and to the situation as presented by the Amaoti community. The results, therefore, cannot be generalised for other communities or similar case studies. While the research will highlight implications that can be used in other studies, it in no way assumes that the results are explicitly applicable in other contexts.

1.5   Definition of terms

In order to adequately understand the research presented, it is important to clarify a number of terms. These are briefly described below while more detailed definitions will be provided throughout the literature reviews found in Chapters 2 and 3.

- **Climate change:** changing environmental patterns due to anthropogenic carbon emissions resulting in increased temperature, directly impacting weather systems and environmental conditions.

- **Adaptive capacity:** the ability of communities to adapt to changing environmental conditions with the least disruption to household practices, while increasing ability and self sustainability.

- **Adaptation:** adjustment in human systems in response to changing environmental conditions and its effects.

- **Theatre for development:** process of theatre that involves the participation of community members and strives to engender learning through the creative arts and inspire notions of change.

1.6   Structure of thesis

The first chapter of this thesis has discussed the main research question and the sub-questions that need to be answered to fully address this. It has briefly introduced the context of the study and the conceptual framework within which the research will be conducted.

The second and third chapters provide an overview of literature on the two main themes of this research, namely that of adaptation based on social vulnerability and theatre for development. Chapter two will focus on social vulnerability, particularly within a climate change context, including an overview of global responses to climate change, definitions of vulnerability, vulnerability assessment and a brief overview of the development of adaptation strategies. Chapter three will discuss theatre for development, including an understanding of development, the use of theatre as a tool for development and examples of theatre used in environmental and climate change communication.

Chapter four provides a description of the study area and detail on the methodology that was undertaken to complete this study. This will include a description of the tools used in data collection and the processes followed to analyse this data.

Chapter five discusses the results of the data collected, including a description of the results of the vulnerability analysis conducted and the theatre for development process that ensued. Chapter six further discusses these results, providing deeper understanding and integration into the theoretical framework. It provides overall conclusions from the study and make recommendations for further research in this field aimed at clarifying procedures of vulnerability assessment and the role that theatre can play within this process.

CHAPTER 2
LITERATURE REVIEW: SOCIAL VULNERABILITY ASSESSMENT

2.1   Introduction

Chapter one introduced the concept of climate change and the potentially devastating impacts that it can have, particularly with regards to rural and peri-urban communities. This impact is largely due to the fact that such communities are vulnerable from both a social and environmental perspective and generally have a relatively low ability to adapt to the projected changes (ACCCRN, 2009). It is thus important to be able to assess vulnerability to develop adaptation strategies that will respond to the highest form of vulnerability within these communities, while also remaining appropriate to their social structures. The primary aim of this chapter is to examine ways of defining vulnerability, with a particular emphasis on climate change and variability. It will focus on the global response to climate change to date, and also investigates vulnerability assessment through the use of indicators, as determining vulnerability is an important component to dealing with the projected negative effects of climate change. In addition, analysis of vulnerability provides a focal point for the determination of adaptation and coping strategies that can be facilitated to address these effects, particularly when addressed through a livelihoods framework. This research focuses predominantly on the social component of vulnerability, examining individual and household vulnerabilities, although many of the arguments presented are equally relevant to vulnerability in the context of natural and environmental systems.

2.2   The international response to climate change

Climate change is debated at the international level primarily under the United Nations Framework Convention on Climate Change (UNFCCC). After formation of the International Panel on Climate Change (IPCC) in 1988, the UNFCCC was tabled in 1992 at the United Nations Conference on Environment and Development. The UNFCCC entered into effect in March 1994 with the stated objective to achieve stabilisation of the concentrations of greenhouse gases in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The South African Government ratified the UNFCCC in August 1997 (DEAT, 2009).

Through these international interventions, countries which face the greatest dangers from the physical impacts of climate change – mainly in South Asia and sub-Saharan Africa – are swiftly realising that adaptation is becoming an increasingly urgent issue. Climate change vulnerability is

closely linked with poverty, as the poor are often dependent on economic activities that are sensitive to climate, for example agriculture and forestry, and changes in these conditions could directly impact productivity levels and diminish livelihoods. Consequently, if livelihoods are to be sustained through these climatically changing events, consideration needs to be given to factors that increase vulnerability levels. To understand the implications of climate change from a vulnerability perspective, it is first important to develop a definition of what vulnerability is.

2.3 Defining vulnerability

There is no universally accepted definition of vulnerability and available definitions vary considerably among different analysts. One school of thought defines social vulnerability as an *a priori* condition of households or communities that is determined by socio-economic and political factors (Blaikie, *et al.*, 1994; Bohle *et al.*, 1994; Fussel and Klein, 2002) which focuses on exposure and sensitivity to adverse consequences corresponding to present day conditions (Downing and Patwardhan, 2005). Relevant studies concentrate on the varying abilities of communities to cope with external stress in a causal structure. From this perspective, vulnerability is seen as the socio-economic causes of differential sensitivity and exposure (Fussel and Klein, 2002).

Another school of thought, characteristic of literature on risk, hazards, poverty and development, explains vulnerability as being systemic; a consequence of the state of development often manifested in an aspect of the human condition such as poverty or under-nourishment (Downing and Patwardhan, 2005). This is closely linked to other literature focusing on risk, hazards and disasters, which explains vulnerability as the 'dose-response relationship' between an exogenous hazard to a system and its adverse effects (Dilley and Boudreau, 2001; Fussel and Klein, 2002; UNDHA, 1993). The Stockholm Environment Institute (2009, no page) defines vulnerability as:

> "...the capacity to be wounded by a perturbation or stress in the natural or social environment... [Vulnerability] can be described as a lack of security from environmental threats. It results from a combination of processes that shape the degrees of exposure to hazard, sensitivity to its stress and impacts, and resilience in the face of those it effects. All people, ecosystems, and regions confronting environmental or socio-economic stresses are potentially vulnerable to their impacts but the level of vulnerability varies widely and is generally higher among poorer people."

While this definition is useful in gaining an overall perspective of vulnerability, it is not particularly specific to climate change nor does it pay enough attention to social vulnerability. The IPCC report,

The Regional Impacts of Climate Change: An Assessment of Vulnerability (Watson *et al.*, 1998) argues that the vulnerability of a region depends to a great extent on its wealth, and that poverty limits adaptive capabilities. According to the Second Assessment Report, vulnerability depends on the level of economic development and institutions. The report argues that socio-economic systems "typically are more vulnerable in developing countries where economic and institutional circumstances are less favourable" (Watson *et al.*, 1996:24). The report continues that vulnerability is highest where there is "the greatest sensitivity to climate change and the least adaptability (Watson *et al.*, 1996:24)."

Predominant in global climate change research, focus is placed on coping or adaptive capacity (Downing and Patwardhan, 2005) and ultimately uses vulnerability as an integrative measure of the threats to a system (Boughton *et al.*, 1999; Cutter, 1993; McCarthy *et al.*, 2001). This notion is supported by USAID (2007:1) who explains:

> "Vulnerability to the impacts of climate change is a function of exposure to climate variables, sensitivity to those variables and the adaptive capacity of the affected communities."

This notion is further supported by the IPCC who define vulnerability as "the extent to which climate change may damage or harm a system" and further maintains that vulnerability "depends not only on a system's sensitivity, but also on its ability to adapt to new climatic conditions" (Watson, *et al*, 1996:26). Blaikie *et al.* (1994), however, argues that vulnerability is predominantly determined by socio-economic structure and property relations - clearly separating biophysical impacts and social dimensions – and thus vulnerability is described by the human dimension alone as "the capacity to anticipate, cope with, resist, and recover from the impact of a natural hazard" (Adger and Kelly, 1999: no page). This socio-economic vulnerability can also be seen as a product of different drivers and actors, thus, vulnerability – as a broad condition of resource use or development – can be seen to be socially constructed and negotiated. Vulnerability is not simply the end result of a probability distribution; it is in fact, an essential aspect of social and economic systems (Downing and Patwardhan, 2005). For this reason, it is essential to analyse multi-actor perspectives and to understand stakeholder behaviour, which could form the basis of a vulnerability analysis. When viewing vulnerability from this perspective, it is possible to determine what aspects of society are most at risk through the development of indicators, and to then develop responses to this.

Central to the understanding of vulnerability, particularly from a social perspective, is the work compiled by Chambers (1989) where he discusses that vulnerability has two sides: an external

side of risks, shocks and stresses to which an individual is subject to; and an internal side which is defenceless, meaning a lack of means to cope without damaging losses (Chambers, 1989), both from an individual and group perspective. The application of sensitivity and resilience to vulnerability originates from the fields of natural resource management and agro-ecology, as noted by Ellis (2000). The notion of an ecosystem's 'fragility' to external pressure and its ability to 'bounce back' from external stress has, in this instance, been applied to individual and households livelihood systems (Ellis, 2000). There is a two-fold emphasis to the sensitivity and resilience of this vulnerability model. Emphasis is placed on the severity and extent of the interaction between the external 'hazard' and the internal 'capability' (sensitivity), and the "tensile strength of the 'system' to recover from an external hazard (resilience)" (Prowse and Scott, 2008:42). In this model, the importance of the capacity of the individual and household to respond is stressed. In determining this 'capacity', a great deal of emphasis is placed on assets, which is considered to be the primary factor in determining vulnerability (Moser, 1998; Prowse and Scott, 2008). Analysing vulnerability requires an evaluation of 'resilience' and the responsiveness in exploiting available opportunities. The means of resistance are the entitlements and assets of the individual, household or community that can be mobilised during periods of hardship, thus vulnerability is closely linked to asset ownership. It is further argued that people are less vulnerable the more assets they have, while the greater the erosion of people's assets, the greater their insecurity (Moser, 1998). This definition of vulnerability is useful in that it begins to establish how vulnerability can be assessed – through evaluating the different assets, and access to those assets, indicators for vulnerability can be developed which will further allow for the quantification process to occur. Using a definition such as this can be useful in terms of climate change research, as indicators can be developed specific to the projected impacts of climate change.

Alwang *et al.* (2001) suggests a simple three step model for understanding vulnerability, based on the World Bank's Social Risk Management approach. These three steps are: risk, response and outcome. In Moser's model (Moser, 1998), sensitivity brings together risk and response, while resilience brings together response and outcome. As is evident from this, there is a heavy reliance on risk response, of which assets form a central component.

For the purposes of this research, a definition has been selected that is closely allied to that of Blaikie *et al.* (1994) and distinguishes between exposure, or definition of the potential stress, and vulnerability from a human and social perspective. As such, this research defines vulnerability as the ability of social groupings and individuals to respond to, cope with, recover from and adapt to, any external stress placed on their livelihoods and well-being as a result of climate change. This definition has been selected for two reasons. Firstly, it is the objective of this study to identify

potential adaptation strategies that can be employed at an individual and social level, thus understanding vulnerability from this perspective is important. Secondly, by placing emphasis on individuals and their social systems, this study aims at redressing a perceived imbalance in the attention paid to the human dimension in studies of vulnerability and adaptation (Adger and Kelly, 1998). By defining vulnerability in this manner, consideration is given to constraints on a collection of response and adaptation options and can reflect on the diversity and unpredictability of the human response.

2.4   Vulnerability assessment

Vulnerability assessment describes the systematic integration of a diverse set of methods that examines interactions between people and their physical and social surroundings (Hahn *et al*, 2008). The evolution of vulnerability assessments has been facilitated by increases in scientific knowledge in a variety of different disciplines, and has been motivated by changing stakeholder needs (Fussel and Klein, 2002). Essentially, vulnerability assessments "build understanding of how complex systems behave. Hence the true value of vulnerability assessment is the social learning that develops from exploring complexity – viewing diverse factors that drive exposure, influence sensitivity and create barriers to adaptation – which contributes to the capacity of individuals and institutions to adapt and manage risk" (Preston *et al.*, 2007:266). This is a crucial factor when taking into account vulnerability assessments for climate change as its impacts are anticipated to be felt within a variety of systems – the very complexity of climate change itself denotes an impact within the complex systems of society, thus the relevance of systems thinking to climate change social vulnerability assessment.

There are also differing thoughts on when vulnerability analyses should occur; some analysts believe the analysis should occur at the end of any appraisal, others at the starting point, and others as the focal point (Adger and Kelly, 1999). Examples of vulnerability assessments as the starting and focal point for an analysis of potential impacts are common in natural hazards and food security literature (Blaikie *et al.*, 1994; Sen, 1981; Watts and Bohle, 1993). Some argue that food insecurity can be defined through 3 basic steps; first, exposure to stress and crises; second, capacity to cope with this stress; and third, severe consequences of stress and related risks of slow recovery (Adger and Kelly, 1999). Ultimately, in cases like this, vulnerability is considered as the overarching concept – a focal point – which allows for adaptive responses to be determined, rather than the end point of an impact analysis. Vulnerability assessment as an end point is generally the result of analyses that begin with projections of future climatic trends, develop climate

change scenarios and thus determine biophysical impacts before the identification of adaptive options (Adger and Kelly, 1999).

In the context of vulnerability to climate change research, vulnerability assessments perform an evaluation of projected climate impacts, and a system is considered vulnerable if goods and service that are of value to the society are adversely affected, and in so doing, link natural with socio-economic analysis (Fussel and Klein, 2002). Most assessments focus on socio-economic factors that determine the differing vulnerabilities of communities to external stresses. Vulnerability assessments enable diverse sources of information to be incorporated into an assessment, even if relationships between these variables are not well defined (Preston *et al.*, 2007). These provide indicators for adaptive capacity which can capture the potential of households to manage the risks they face, both contemporary and future.

Vulnerability assessments are a learning experience and do not always proceed in a linear way. Interestingly, the term 'vulnerability assessment' does not appear in the IPCC glossary, indicating that there is no agreed upon terms as to what this means nor is there a definite approach which should be taken. While the IPCC has provided extensive research on projected climate impacts, there is a serious lack of research that supports notions of vulnerability assessment. This is largely due to the fact that vulnerability varies widely across communities, sectors and regions – thus a single definition or process is difficult to formulate - and acknowledging the diversity of the 'real world' can be a sound starting place for a vulnerability assessment (Downing and Patwardhan, 2005).

While the chosen definition of vulnerability for this research - the ability of social groupings and individuals to respond to, cope with, recover from and adapt to, any external stress placed on their livelihoods and well-being as a result of climate change - places primary focus on the human and social elements of vulnerability, assessments need to focus on developing an understanding of the human use of resources in relation to predicted climate variability. The level of social vulnerability does not directly equate to, for example, the level of poverty in a community (although this is considered an important consideration) or any other single characteristic of an individual or community. Rather, it should be understood that there are a range of diverse factors that determine vulnerability (Adger and Kelly, 1999). Adger and Kelly (1999) suggest that social vulnerability assessments should be split into two distinct aspects of individual and collective vulnerability. It is explained that "individual vulnerability is determined by access to resources and the diversity of income sources, as well as the social status of individuals or households within a community. The collective vulnerability of a social grouping is determined by institutional and market structures, such as the prevalence of informal and formal social security and insurance, and by infrastructure

and income" (Adger and Kelly, 1999:6). While this separation is made to simplify the conduction of an assessment, it is important to remember that these individual and collective components are intrinsically linked through the political economy of markets and institutions.

Vulnerability assessments, from this social perspective, should seek to define the social construction of vulnerability and to identify how different characteristics, phenomena or processes influence vulnerability over time (Adger and Kelly, 1999). Vulnerability is a "process of continual evolution" because the technological and institutional factors shaping vulnerability "are themselves in a constant state of flux (Adger and Kelly, 1999:7). It is this dynamic aspect of vulnerability that it is most important to capture, rather than any measure of vulnerability, any snapshot, taken at a particular point in time... the critical challenge is to detect, then reinforce modify or offset, trends in the factors that determine vulnerability as they emerge" (Adger and Kelly, 1999:8). While it is important to consider vulnerability as a process of evolution, it can be useful to assess vulnerability in a quantitative manner, through the weighting of vulnerability indicators, to ensure that adaptation strategies respond to the greatest vulnerability found within communities. As such, the process of assessing vulnerability is complex and will be discussed in greater detail.

2.4.1   Conducting a vulnerability assessment

The threats posed by climate change are incredibly diverse and complex, thus it is impossible – and potentially detrimental – to assume that there is only one perspective or framework for conducting a vulnerability analysis. There are, however, significant benefits of conducting these analyses from a social perspective. By examining the social architecture of a community, it is possible to draw conclusions regarding the effective means of reducing vulnerability and improving resilience, while providing a detailed and realistic picture of a "continually evolving process" that shapes the community itself (Adger and Kelly, 1999:27). Through this understanding, it is then possible to identify compensatory measures which can offset adverse trends and develop adaptation strategies that can be supported and implemented at a local level, thus providing a sustainable response to the threat of climate impacts.

Even if the vulnerability is conducted from a social perspective, it is still important to determine what the potential climatic changes for the area are, as this will provide a context with which to engage with people at a community level. For this, the IPCC has identified critical aspects that need to be taken into account from a climate change perspective.

2.4.1.1 Assessing climate change impacts

In the Fourth Assessment Report of the IPCC, discussions around the assessment of vulnerabilities and the risk from climate change are extensive. In this report an important distinction is made between impacts and vulnerabilities, namely that impacts can be either beneficial or harmful, whereas vulnerability is the degree to which systems are susceptible to, and unable to cope with, adverse impacts. Risk is further defined as combining the magnitude of impact with the probability of occurrence and thus takes into account uncertainty in the "underlying processes of climate change, exposure, sensitivity and adaptation" (IPCC, 2007:782). While impacts may be found in social, economic, geophysical and biological systems, vulnerabilities are more associated with climate-sensitive systems, such as food supply, water resources, health, infrastructure, coastal systems, and ecosystems, to name a few.

The assessment of vulnerabilities requires two main components; scientific uncertainties and value judgements. The report states that "it requires consideration of the response of biophysical and socio-economic systems to changes in climatic and non-climatic conditions over time, important non-climatic conditions that affect adaptive capacity, the potential for effective adaptation across regions, sectors and social groupings, value judgements about the acceptability of potential risks, and the potential adaptation and mitigation measures" (IPCC, 2007:784). Within this context, issues such as development, sustainability and equity are important factors that need to be taken into account.

It is important to further understand that vulnerabilities are influenced by the perception of risk which depends on the cultural and social context in which the changes are occurring. From a collection of literature, the IPCC has established that there are seven main criteria that can be used to identify vulnerability and these are (IPCC, 2007:785):

- Magnitude of impacts;

- Timing of impacts;

- Persistence and reversibility of impacts;

- Likelihood of impacts and vulnerabilities and confidence in those estimates;

- Potential for adaptation;

- Distributional aspects of impacts and vulnerabilities; and

- Importance of the system(s) at risk.

Each of these criteria will be discussed in more detail below.

2.4.1.2   Magnitude of impacts

The magnitude of an impact is largely determined by its scale and intensity, and the most commonly used quantitative measures for these impacts are monetary units such as income, revenue losses and welfare. However, another important aspect to consider is the number of people affected by the impact, with particular regards to food and water shortages, morbidity and mortality from disease and forced migration. The magnitude of impacts can also be quantified in terms of the biophysical impacts such as species extinction or change in agricultural yields. Schneider, *et al.* (2000: no page) points out that "for some impacts, qualitative rankings of magnitude are more appropriate than quantitative ones. Qualitative methods have been applied to reflect social preferences related to the potential loss of cultural or national identity, loss of cultural heritage sites, and loss of biodiversity".

2.4.1.3   Timing

There are two important aspects of timing that need to be taken into account when determining vulnerability: the expected time of the occurrence and the rate at which it will occur. The 20th Century experienced numerous changes in climatic conditions and so the timing of predicted events is important to take into account. If impacts are only believed to occur in the distant future, they can be deemed less significant than changes happening in the immediate future. The rate at which impacts will occur is extremely important, as adverse impacts occurring surprisingly and suddenly would be perceived as more important than changes occurring gradually. This is largely due to the ability of adaptation for both natural and human systems and the time in which they are able to effectively respond. Niemeyer (2005:1443) further states that "very rapid change in a non-linear system can exacerbate other vulnerabilities (eg. impacts on agriculture and nutrition can aggravate human vulnerability to disease) particularly where such rapid change curtails the ability of systems to prevent and prepare for particular kinds of impacts".

2.4.1.4   Persistence and reversibility

An impact is considered to be a greater cause for vulnerability if it is persistent and irreversible, such as the emergence of near-permanent drought conditions. Impacts are considered irreversible if they are believed to continue for many generations and include changes in biogeochemical cycles, land cover and extinction of species, to name a few (IPCC, 2007).

2.4.1.5   Likelihood and confidence

A differentiation is made between likelihood and confidence in that a likelihood is considered to be the probability of an outcome having occurred or occurring in the future, whereas confidence is the

"subjective assessment that any statement about an outcome will prove correct" (IPCC, 2007:786). In this manner, the likelihood of an outcome has been framed as the "central value of a probability distribution, whereas confidence is reflected primarily by its spread" (IPCC, 2007:786). An impact that is more likely to occur is deemed to be a greater cause for vulnerability, as opposed to an impact with a lower likelihood of occurrence.

2.4.1.6   Potential for adaptation

To determine the potential harm that climate change can cause, it is vital to assess the ability of individuals, groups, societies and nature to adapt to negative impacts. The less ability demonstrated to respond in an effective manner to negative impacts, the higher the vulnerability. The IPCC (2007:786) further states that "adaptation assessments need to consider not only the technical feasibility of certain adaptations but also the availability of required resources (which is often reduced in circumstances of poverty), the costs and side effects of adaptation, the knowledge about those adaptations, their timeliness, the (dis-)incentives for adaptation actors to actually implement them, and their compatibility with individual or cultural preferences".

2.4.1.7   Distribution

An important aspect for vulnerability is the distribution of climate change impacts across population groups and regions, as this raises issues of equity. Issues such as income, gender, age and groupings – regional, national and sectoral – are all components that need to be taken into account.

2.4.1.8   Importance of the vulnerable system

The last component of vulnerability that needs to be taken into account is the importance of the vulnerable system that is affected by the adverse impact. If the livelihoods of a group of people depend on the maintained functioning of a particular system, then its impact will be more severely felt than a system that does not play as important a role. In the same way, an ecosystem may be considered important if it contains either endemic or endangered species that are threatened and cannot be replaced.

2.4.1.9   The quantification of social vulnerability

A common process in vulnerability assessment is the quantification of these multidimensional issues using indicators as proxies, which are combined into a composite index allowing diverse variables to be integrated (Hahn *et al.*, 2008). The Water Poverty Index (Lawrence, Meigh and Sullivan, 2002) and Human Development Index (UNDP, 2009) are examples of composite indices calculated using weighted averages of individual indicators. While social vulnerability is generally assessed through qualitative means, the need for quantifying how communities will adapt to

changing environmental conditions has arisen in climate vulnerability assessment. A variety of research has been conducted to bridge the gap between the natural, social and physical sciences to develop new methodologies to adequately deal with the complexities of climate change vulnerability assessment. The Sustainable Livelihoods Approach (Chambers and Conway, 1992) is an approach used to design development planning at a community level, taking into account five types of household assets – natural, physical, social, financial and human capital. While this approach is able to address issues of sensitivity and adaptive capacity to climate change, there is need for a new approach that integrates climate exposures and household adaptation practices to comprehensively evaluate risks on livelihoods from climate change (Hahn *et al.*, 2008).

One approach aimed at integrating these complex dynamics is the Livelihood Vulnerability Index (LVI), which uses multiple indicators to assess exposure to climate variability, current food, water and health resource characteristics and the social and economic characteristics of households. While the IPCC (2001) describes three contributing factors to vulnerability – exposure, sensitivity and adaptive capacity – the LVI focuses on quantifying the strength of current livelihood systems rather than structuring vulnerability around climate projections (Hahn *et al.*, 2008).

The LVI uses a balanced weighted average approach (Sullivan *et al.*, 2002) where seven subcomponents contribute equally to the overall index, including Socio-Demographic Profile, Livelihood Strategies, Social Networks, Health, Food, Water, and Natural Disasters and Climate Variability (Hahn *et al.*, 2008).

2.4.2   Assessing social impacts

In their paper *Assessing Vulnerability for Climate Adaptation*, Downing and Patwardhan *et al.* (2005) establish that the central concern of a vulnerability assessment should be people and the identification of those who need to be protected from the adverse projected climate change variations. As such, they provide a five step process that can be useful in conducting a vulnerability assessment from a social perspective. They further emphasise that vulnerability assessments are a learning experience, and thus the following steps act as a guideline and not as a sequence of steps to be followed mechanically.

It is evident that while vulnerability assessments raise awareness of certain systems to climate change, it also assesses the influence that non-climatic factors have in vulnerability (Fussel and Klein, 2002). As discussed in Section 2.3, a key component in determining individual and social vulnerability is through an evaluation of assets, which is referred to as an 'asset-based approach' to vulnerability (Moser *et al.*, 2008). Central to this approach is the belief that assets are

fundamental to increasing the adaptive capacity of individuals in developing countries, particularly with regards to the urban poor. This approach argues that, in general, city or municipal authorities in developing countries do not provide the necessary infrastructure or services to the urban poor and are reluctant to work with them in development processes. As such, this approach argues that improving asset holdings will not only increase the ability to respond to risks and stresses, it will also increase the capacity of these poor communities in holding their governments, and other actors, to account (Prowse and Scott, 2008).

It is further explained that a measurement of a household's asset, capital or resource base can denote a clear conception of livelihood strategies, which can lead to a close approximation of those who are likely to remain poor in the future (Prowse and Scott, 2008). An asset poverty line, for example, can be developed which is focused on identifying households that lack assets that are required to generate a level of income and expenditure to make them 'non poor' (Carter and Barrett, 2006). Focusing on assets also allows for an understanding of how households respond to risks; the utilisation of assets before and after shocks and stresses can indicate the use of those assets and the degree of reliance on them (Alwang *et al.*, 2001). With a focus on increasing assets, the assets-based approach has a positive perspective in that risk is not only seen as a threat, but also as an opportunity through identifying investment opportunities for asset accumulation.

2.5 Adaptation

The central element of community-based adaptation, as has been identified, is learning about current strategies and assessing current vulnerabilities. These assessments not only focus on the effects of climate, but on the full range of stresses and shocks that are identified by the community (Prowse and Scott, 2008).

According to the IPCC, adaptation comprises a broad range of activities and is defined as an "adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. Various types of adaptation can be distinguished, including anticipatory and reactive adaptation, private and public adaptation, and autonomous and planned adaptation…" (IPCC, 2001a:138). Other definitions of adaptation have restricted the use of this term to "adjustment in social systems, to deliberate changes, to major structural changes in a system or to a subset of climatic stimuli" (Fussel and Klein, 2002, Smit *et al.*, 2000).

Adaptation largely involves the management of the risks identified through the vulnerability assessment, and the manner in which natural and human systems are sensitive to these vulnerabilities should be pivotal in identifying, formulating and evaluating adaptation policies (Downing and Patwwardhan, 2005). The adaptive capacity of a system or community determines its potential to respond to, and reduce, the adverse effects of climate change, both within social and natural systems. It is clear that non-climatic factors affect the adaptive capacity of a system (Fussel and Klein, 2002), thus emphasizing the importance of a comprehensive vulnerability assessment that views the system in its completeness. Determinants of adaptive capacity in social systems can include technology, economic resources, information and skills, infrastructure, institutions and equity (Smit and Pilifosova, 2001; Yohe and Tol, 2002).

If adaptation strategies truly seek to reduce the vulnerability of communities in a sustainable manner, then it is essential for the underlying causes of vulnerability to be tackled. Addressing the unequal distribution of resources is one such example, and it has been argued that issues such as insecure land tenure, and the resulting perceived insecurity, has been a major contributor to large scale mortality and flood impacts of the Ganges low-lying delta areas (Blaikie *et al.*, 1994; Wisner, 1978). While resource distribution and the role of institutions remain highly political in nature, issues such as land reform and wealth distribution are not necessarily realistic adaptation strategies (Adger and Kelly, 1999), although the importance of these changes should not be negated. It is rare that social hierarchies and resource and entitlement inequalities are addressed through the development of adaptation strategies; in fact, it is often the case that external changes such as climatic extremes tend to reinforce those inequalities (Cannon, 1994). Despite this, however, addressing these issues remains fundamental to the sustainable implementation of adaptation strategies. There have been some cases, however, where a radical shift in policy has coincided with the requirements of the elite. In Vietnam, for example, the governments political necessity to retain rural support led to the relatively equitable privatisation of agricultural land (Bardhan, 1996). While changes at this level pose a substantial challenge, it is nevertheless an important component to adequately addressing the underlying causes of social vulnerability.

It is also deemed more efficient to develop adaptation strategies that simultaneously reduce the vulnerability of multiple stressors within a system, as opposed to formulating an independent adaptation strategy for each (Fussel and Klein, 2002), thus it is important for adaptation strategies to be embedded within the existing policy context. Development of these strategies requires an acute dialogue with a variety of stakeholders, where needs and priorities should be identified, mutual learning should be facilitated, and the development of strategies should be compatible with

policy goals including sustainable development, economic diversification and biodiversity conservation (Fussel and Klein, 2002).

It is also important to assess the adaptation strategies proposed, defined by the IPCC as "the practice of identifying options to adapt to climate change and evaluating them in terms of criteria such as availability, benefits, costs, effectiveness, efficiency and feasibility" (IPCC, 2001a:142).

As Wakeford (in Zipplies, 2008) explains, Africa is particularly vulnerable to climate change because of "multiple stresses and low adaptive capacity" (Wakeford in Zipplies, 2008:62). The over-riding concern is that the low income and marginalised communities are poorly equipped and can least afford to adapt to these changes. In the context of South Africa's efforts to reduce inequality and poverty, climate change that is not countered with effective adaptation, has the potential to frustrate development efforts. Approximately 55% of South Africans live in cities, and informal housing settlements, on the periphery of these urban centres, provide meagre shelter for the millions of people who have moved there in search of jobs (Joubert, 2006). But unemployment levels soar and there is no money to buy food and, being newly urbanised, no arable land to grow food. In the midst of a mushrooming population, "intensifying water scarcity and food insecurity paint a bleak picture of the future" (Wakeford in Zipplies, 2008:65).

The effects of climate change are already being experienced in South Africa and are expected to continue (Joubert in Zipplies, 2008), touching on nearly every aspect of life. Extreme weather events have impacted on human health, destroyed homes and damaged infrastructure. In fact, climate change is beginning to shatter the belief that human beings have mastered the environment by demonstrating how utterly dependant we are on natural resources and ecological systems (Wakeford in Zipplies, 2008).

The principles of good climate adaptation practice are only just beginning to emerge. According to the eThekwini Municipal Action Plan (ERM, 2009) it is already clear, however, that successful climate change adaptation:

■ Requires climate change to be integrated into existing strategies and decision making processes in order to ensure long term sustainable development – few new perspectives and analytical tools relating only to climate change are required;

■ Involves the provision of information required to inform decisions, recognising that different stakeholders often have competing goals and processes;

■ Is a multi-lateral and participatory process. Autonomous action is likely to lead to mal-adaptation;

- Involves actions at multiple scales: local actions are ultimately required to implement climate change responses, but these are most effective when they take place within an enabling legislative and financial environment informed by local and international research;

- Preserves the integrity of the environment and the flow of resources and processes from ecosystems providing additional options and buffers;

- Involves institutional and social responses as these tend to be lower cost and are a pre-requisite for responding to physical and biological impacts;

- Should, given the uncertainty over future climate impacts, retain as many adaptation options as possible, and place a premium on flexibility and responsiveness in institutional and programme design. Adaptation options that lock-in technologies or reduce the set of adaptation options should be considered less attractive than those that do not; and

- Prioritises responses that do not, themselves, increase the emissions of greenhouse gases (SEI, 2009).

2.6   Conclusion

While vulnerability may be difficult to assess – from both a qualitative and quantitative perspective – it is crucial in the development of adaptation strategies, as has been demonstrated throughout this research. Questions then need to be raised as to how this information is communicated back into communities and realistic and sustainable implementation strategies developed. For adaptation strategies to be wholly accepted by communities, they need to take into account societal customs and traditional beliefs, while at the same time addressing issues of vulnerability that will have arisen through the vulnerability assessment. Communication techniques need to be informative, relevant, entertaining and inspiring for them to be sustainable, and Chapter 3 will discuss means of development communication with a particular focus on theatre as an efficacious tool for communication.

CHAPTER 3
THEATRE AS A CATALYST FOR CHANGE

3.1   Introduction

Chapter two provided a description of climate change and the need for adaptation strategies, based on social vulnerability assessment. From this analysis it is evident that both climate change dynamics and vulnerability assessments cover a range of social and environmental issues and when seeking to address some of these issues, it is important to have a medium of interaction that is multi-faceted particularly with regards to means of communication. This chapter will discuss the use of theatre as a means of development communication, and thus, as a potential catalyst for change. An overview of development communication will be provided, including previous and alternative notions of development. Theatre for change – as it will be referred to for the purposes of this research - including its underlying principles, its different components, and examples of where it has been used to communicate environmental issues, will also be explored.

3.2   Development communication

Development is commonly understood to be both a process and a goal in bringing about social change to increase the standard of living of people in underdeveloped circumstances. The United Nations Development Programme (UNDP, 1990) maintains that the objective of development is to create an enabling environment for people to enjoy long, healthy and creative lives, to be educated and to enjoy a decent standard of living. However, there is no single accepted interpretation of what 'social change' entails, nor is there a commonly accepted standard with which to measure 'living standards'. In Africa, most governments have chosen to understand development as technological advancement and economic growth, with emphasis on the Gross National Product (GNP) to be used as a measure of this development (Mda, 1993). This, however, brings to light several problems. Scholars such as Hedebro (1982:19) argue that "the road to being a highly developed nation goes through free enterprise and private ownership, and the stress is on rapid economic growth via industrialisation and urbanisation. Very little is said, however, about the distribution of economic growth. The notion is that all citizens will benefit through some trickle-down mechanisms. Exactly how this is going to happen is not made clear". This problem is largely due to the fact that development initiatives have followed the pattern of Western development, without taking into account the dynamics of both the African continent and the African individual. Indeed,   much   of   the   developments   of   the   West   have   largely   been   facilitated   by   the

underdevelopment of Africa, and the dependency that has been created between the vast differences of wealth and technological advancement. Ake (1981:143) supports this notion stating that the "indifference to the causes of economic backwardness… are rooted in the integration of their [African] economy into the Western capitalist system". Little credit has been given to the competencies of the African nation and even less attention has been paid to advancing the African individual as a means to attaining development, and thus, a complete sense of development has failed to occur.

Development communication was the first systematic linking of communication and development in such a way as to establish a model for communication planning in developing nations (Schramm, cited in Stilwell *et al*, 2001). Development communication works within the concept that there must be a communication equation from all involved stakeholders, both internally and externally. Internally, the stakeholders can be described as the community members and the local and traditional leadership, whereas external stakeholders are the development clients, partner agencies, donors and government (Kiraka *et al*, 2007). Mda (1993) maintains that development communication has evolved from a tumultuous history of Western influence and has been structured around undemocratic structures of media institutions which operate in a centralised fashion with a concentration of power, resources and services of the media in urban areas. This means that communication in Africa ultimately serves the needs of a few urban inhabitants, while neglecting those of the vast majority of people living in rural areas. There has been a need to democratise the structures of communication because in their current state they are not conducive to, and are dysfunctional for, development.

There has, however, been a change in understanding about what true development entails. Burkey (1993:35) argues that "development in any meaningful sense must begin with, and within, the individual. Unless motivation comes from within, efforts to promote change will not be sustainable by that individual. That individual will remain under the power of others". This notion takes into account the role that individuals have in development, and that without initiatives being supported by the people themselves, development will never be sustainable. This entails increasing the participation and empowerment of the individual, and is known as the human factor paradigm. The UNDP's *Human Development Reports* define this paradigm as a "process of widening people's choices and the level of their achieved well-being" (Owusu-Ampomah cited in Adjibolosoo, 2004:9). Human factor development recognises that focus must be placed on the composition of the human being in its entirety. This composition includes spiritual capital, moral capital, aesthetic capital, human capital, human abilities and human potentials (Adjibolosoo, 1995).

Spiritual capital is an aspect of the human personality that corresponds to universal principles of laws and human life, while moral capital represents the attitudes of the human heart that are based on those principles. Aesthetic capital is the sense and desire for beauty, often found through the arts, and human capital is the acquired skills and experiences that one can have, coupled with physical and emotional health. Human abilities constitute the capacity of individuals to perform effectively, and human potentials are the human talents that can be employed for human utilisation, whether harnessed or not (Adjibolosoo, 1995).

This implies that if the human being is the focus of development strategies, then a true understanding of all aspects of the human being will be taken into account, and using this as a basis for participation, people will be able to engage more actively and to increase their personal consciousness, thus leading to empowerment and liberation. This further implies that the development of the human being in its totality is a prerequisite for well-being, and to restrict development to only one of these aspects will guarantee the failure of development strategies.

One of the most important factors within this is the issue of spirituality, as it is maintained that spirituality underlies many of the daily decisions people in developing countries make about their own or their community's development (Owusu-Ampomah in Adjibolosoo, 2004). "If development is truly about strengthening people's capacity to determine their *own* values and priorities, and to organise themselves to act on these, then researchers and practitioners must recognise the importance of spirituality in people's lives, seek to understand it, address it openly and give people the opportunity and the power to decide how both their development and their spirituality will and should shape each other" (Beek, 2000:41-42). Taking this into account, development initiatives need to be based on the belief that all people have the right to live a life in a world that has meaning to them (Coetzee, *et al.*, 2001). To live in a world of meaning, however, presupposes an active dialogue between people and their overall reality, as opposed to a static conception of what social reality is. This then implies that development strategies should be grounded in consciousness. It is vital for people to create this world of meaning around them, and to understand the social reality in which they live, "development strategies need to be based on the way in which participants themselves experience social situations" (Coetzee, *et al.*, 2001:125). To be grounded in consciousness, consideration must be given to concealed and invisible structures of interests and forces within society.

As such, Burton (cited in Stilwell *et al.*, 2001: 215) identifies that development communication is the "building of capacity amongst individuals and groups to engage in constructive actions for development". Development communication studies are concerned with how communication can be organised so as to increase participation, achieve self-reliance, promote equity and close

communications gaps (Hedebro, 1982). Participation is identified as a key aspect to creating development communication and Burton (1993) further suggests that if participation is to really release the people's own creative energies for development, it must be much more than the simple mobilisation of labour forces or the coming together of people to hear predetermined plans. Rather, development communication must be a genuine commitment to encourage participation in all aspects and all levels of development work which seeks to "emphasise the quality of life – integration of traditional and modern systems of communication – labour intensive and appropriate technology – self reliance - user oriented strategies – popular participation in development planning and implementation" (Wang and Dissanayake, 1982:7). Rahman (1983:29) supports this notion and further explains the significance of participation in a development context explaining that "praxis, and hence participation, is a continuous educative process – a process of progressive conscientisation. Through collective self-reflection of their experiences and problems, people become more aware of the decisions of their reality and what can be done by themselves to transform it. With this awareness they decide upon and take collective action and analyse its results to promote their awareness (knowledge) further. Thus they move on with progressively advanced knowledge of their evolving reality".

3.2.1 Conscientisation and Critical Pedagogy

This process is known as conscientisation and can be defined as "a process of dialogue which enables the individual to transform himself in relation to his fellows and to act critically towards himself and society" (Mda, 1993:45). This ideology is largely based on the Freirian notion that learning should be about perceiving social, political, and economic contradictions, and then taking action against the oppressive elements of reality in order to achieve true emancipation and liberation from dominant forces (Freire, 1972). To attain this degree of internalisation and understanding indicates the need for intense Socratic questioning of the individual regarding the environment in which they live. This can be attained through the elements identified in the notion of critical pedagogy.

Critical pedagogy evolved out of the desire to give shape and coherence to a theoretical landscape of principles, beliefs and practices that contributed to an emancipatory idea of democratic schooling in the United States in the 20th Century. It was an attempt to bring an array of divergent views and perspectives to the table to invigorate the capacity of radical educators to engage critically with disenfranchised populations due to the impact of capitalism, race and gender (Darder *et al.*, 2003:2). Critical pedagogy is based on the principle that education must engage with and enlarge experiences, with interactive thinking and reflection as central points, and people must be

able to interact freely with their environment in the practice of constructing knowledge. There needs to be a link between the notion of individual and social intelligence with the discourse of democracy and freedom (McLaren, 1989), asserting that for education or institutional change to be effective it must begin with the people themselves, thus challenging the reproduction of a system of social relations that perpetuate existing structures of domination and exploitation. Critical pedagogy is driven by an underlying commitment to the notion that theory, as well as practice, must inform the work of those who seek to transform the oppressive conditions that exist in the world (Darder *et al*, 2003).

It is important to emphasise that there is no formula or "heterogenous representation" of critical pedagogy that exists as all circumstances are different and must be taken into account, but that it is marked by a commitment to an unwavering liberation of oppressed populations (Darder *et al*, 2003:11). As such, there are a number of key principles that need to be taken into consideration, such as cultural politics, political economy, historicity of knowledge, ideology and critique, dialectical theory and hegemony.

To relate critical pedagogy to a development perspective, cultural politics, political economy and dialectical theory have been identified as playing an important role. Cultural politics seeks to both legitimise and challenge experiences that shape histories of socio-economic realities that give meaning to life, which is an important aspect to consider in the developmental field. Linked closely to this is political economy which acknowledges that material conditions within lives contribute to understanding who we are and how we are perceived in society. Dialectical theory then functions to unmask connections between objective knowledge and cultural norms through dynamic interactive elements rather than traditional views of dichotomy (Darder *et al*, 2003). The combination of these three aspects, and the critical questioning that surrounds them, will aid in the process of conscientisation, which will ultimately lead to the empowering of individuals, thus creating a meaningful sense of development.

3.3   Theatre as a tool for communication and change

This section will discuss theatre as a tool for communication and change. It will first discuss the definition of theatre for development and will then look at three tools used in this process: image theatre, simultaneous dramaturgy and forum theatre. Finally it will discuss implications for theatre for development.

3.3.1   Defining 'theatre for development'

Theatre has been scrutinised in its association with development, largely due to the capitalistic driven attitudes that understand the role of theatre as to merely entertain. In many ways, theatre has been turned into a commodity which must emphasise its most available elements to be "saleable" due to conditions intoned in capitalistic living (Mlama, 1991:23). While a large part of theatre is its entertainment component, to limit it to such restrictions is a most regrettable endeavour, and much value will be lost in this process. A capitalistic philosophy of theatre seeks to make a distinction between the performers and the spectators, whereas the existential maxim of theatre for development is to transform the audience into makers and owners of the theatre event and experience (Okagbu cited in Salhi, 1998). As Freire (1972:25) denotes, 'pedagogy of the oppressed' is one "which must be forged with, not for, the oppressed (be they individuals or whole peoples) in the incessant struggle to regain their humanity. This pedagogy makes oppression and its causes objects of reflection by the oppressed, and from their reflection will come their necessary engagement in the struggle for their liberation".

As such, theatre for development is about engendering learning through the use of creative arts, both to inform and to teach, and through the application of traditional and local art and media forms, the "cultural identities of societies are reinforced. In this way, socio-economic and cultural development go hand in hand" (Epskamp, 2006:43). Epskamp (2006) further notes that theatre for development is not viewed on its own, but rather, is ingrained within the wider context of development initiatives and sectors, with its main aim to improve sustainable problem-solving capabilities in communities to enable them to alter their living conditions in a long-lasting manner. Theatre for development can be described as "a process of theatre which deeply involves specific communities in identifying issues of concern, analysing current conditions and causes of a situation, identifying points of change, and analysing how change could happen and/or contributing to the actions implied" (Prentki and Selman, 2000:8). This, in essence, is an ideal of development. While theatre for development can take a variety of different forms, it is better defined by its intentions of personal and social transformation as it draws on participants' experiences to collectively create theatre and engage in discussion of issues through theatrical means.

Mda (1993) suggests that theatre can be used as an effective tool in development communication for the following four reasons:

■   It has the potential to be a democratic medium where audiences play an active role in medium programming, producing and distributing messages;

- It is capable of integrating indigenous and popular systems of communication that already exist in rural areas;

- It makes use of appropriate technology as it is only based on human resources; and

- It uses interpersonal channels, which is found to have more impact than mediated channels of print or electronic media.

Another reason why theatre for development can be used in communication, particularly in Africa, is largely due to the fact that many people in Africa are accustomed and exposed to a theatre where value lies in the ability to express the feelings, aspirations and concerns of the people, and to portray attitudes and values necessary for the continued prosperity of the community (Mlama, 1991). It is for this reason that promoting and cultivating the culture of people can be achieved through the use of theatre. "As an ideological tool, [theatre for development] has the ability to promote and inculcate cultural values of any system" (Mlama, 1991:23).

3.3.2   The tools of Theatre for Development

As such, theatre for development plays a primary role in creating the necessary conscientisation to promote development. "This conscientisation is realised through a process that helps people to identify and understand their problems within the context of a particular social order. Popular theatre provides a means of codifying that social reality. The codification – the theatrical performance – becomes a mirror through which the people can see themselves, their social situation, and the problems they encounter, in a fresh and stimulating way" (Bryam and Moitse, 1985:81). Popular theatre can be understood as work that is comprehensible both for the people as a whole and for the individual; it expands and enriches people's own form of expression, adopting and strengthening the point of view of the most progressive section of the people, rooting itself in tradition and developing this in a positive manner (Leis, 1979). In this context, people are not simply an audience, they are also the actors and creators of the drama, whether they have artistic talent or not, and as such the means of production of theatre should be transferred to the people so they can use it (Boal, 1979). Theatre also raises consciousness as it is a mode of communication that has a life of its own. It is a form of carefully controlled and contrived escapism that allows the audience to take imaginative, and collective, refuge in a more desirable realm of existence than their everyday reality. It engages them in a dramatic fiction that has a connection to their personal situation and circumstance. The potency of this as a tool for development lies in that development workers and extension officers are able to explain the benefits of social phenomena outside of the community members' own experience (Mda, 1993).

One of the main implications for theatre applied in a development context is that participation is essential. In *Theatre of the Oppressed* Boal (1979) establishes that the main aim of theatre in development is to "change the people- "spectators," passive beings in the theatrical phenomenon – into subjects, into actors, into transformers of the dramatic action" (1979:122). In theatre for development, a situation is created whereby the spectator delegates power to the character, who then acts in his place, while the spectator reserves the right to think and feel for himself, which is more often than not in opposition to the character. In this case, an awakening of critical consciousness occurs; "…the spectator delegates no power to the character (or actor) either to act or to think in his place; on the contrary, he himself assumes the protagonic role, changes the dramatic action, tries out solutions, discusses plans for change- in short, trains himself for real action… The liberated spectator, as a whole person, launches into action. No matter that the action is fictional; what matters is that it is action!" (Boal, 1979:122). From this, Boal (1979) coined the term 'spect-actor' which denotes that the participant is not merely a spectator, but an actor as well, thus engaging them fully in the developmental processes that surround them.

There are a number of identified methods within the theatre context that can enable this to occur, including Image Theatre, Simultaneous Dramaturgy, Forum Theatre, Invisible Theatre, Newspaper Theatre and Legislative Theatre to mention a few. The first three will be discussed as they have particular relevance to this study.

3.3.2.1 Image Theatre

In the creation of Image Theatre, participants are asked to express their views about a particular issue without speaking, and rather, to use the bodies of other participants to 'sculpt' them into a group of statues or tableaux, done in three basic steps. Firstly, the participants create a tableau of the existing situation whereby the 'sculptor' engages with the other participants to ensure that the picture accurately denotes the feelings of the whole group about the issue, and involves a process of constant reworking until an image of a collective perspective on a given theme is formed (Boal, 1992). The second step is for the 'sculptor' to re-sculpt the participants into an image that represents how they would like the situation to be, the creation of an *ideal* situation. When this is then agreed upon by the participants, the third step is to create an image depicting how it would be possible to attain this ideal situation. The first grouping is referred to as the *actual image*, the second the *ideal image* and the third the *transitional image* (Boal, 1979).

3.3.2.2 Simultaneous Dramaturgy

Simultaneous Dramaturgy is used to encourage the participation of the community if they are not comfortable to act in a performance themselves. Here, a short scene is planned before hand with a group of actors who then develop the scene to a point of crisis, or the point where the play suddenly needs a solution. The facilitator then stops the performance and asks the audience to offer their own solutions. As solutions are suggested, the actors then improvise those solutions, with the spectators then intervening to correct the actions or words of the actors, who are obliged to act exactly according to the instructions given by the spectators. As such, the audience 'writes' the drama while the actors perform it simultaneously. The spectators' thoughts and suggestions are discussed on stage in a theatrical manner with the help of the actors. This type of theatre creates excitement and eagerness amongst the participants, and thus begins the process of breaking down the walls that divide the actors from the spectators. In doing this the participants are able to bring forward a range of different ideas and solutions to a problem and to collectively see how their ideas would materialise in reality, beginning a debate that is subject to constructive criticism and rectification (Boal, 1979).

3.3.2.3 Forum Theatre

Forum Theatre is closely linked to Simultaneous Dramaturgy in that it involves creating a drama around a problem and engaging the participants to suggest ideas to rectify it, only here the participation is at a much greater level. Instead of stopping the drama at the point where a solution is needed, the drama continues with a conclusion and the participants are asked if they agree with the particular outcomes of the drama, or if they could find a better solution to end it with. The drama will be performed again, exactly as it had been done previously, but now the participants from the audience have the right to stop the drama at any point and replace one of the actors in order to lead the drama in the direction that they deem most appropriate. The actor then steps aside, but remains close to the participant taking their place, to aid the participant with any difficulties they may be having. The participant who intervenes must continue the action of the drama, and the other actors must act in accordance to the new situation but also remain true to their characters. Any of the participants may suggest a solution, but they must perform that action on stage, physically acting and working and not merely suggesting from the safety of their seats. Often what begins to happen is that the participants realise that it is not as easy as it looks to find 'miraculous' solutions to problems, and so their solutions need to be well thought out and placed within the context of the drama (Boal, 1979).

3.3.3   Implications for theatre for development

Within a theatre in a development communication context, consideration must be given to the fact that it is an anomalous process. Each community theatre project needs to take its own unique journey that can never be fully predicted or duplicated (van Erven, 2001). As such, flexibility, the ability to adapt pre-planned structures and schedules to unforeseen developments, cross-cultural sensitivity, and the skills to generate the performances through improvisations are essential qualities for theatre for development to be successful. While participation is not only a method of theatre, it is also a goal, and is aimed at motivating communities out of their apathy and indifference. Initiatives need to be engaging, dynamic, relevant and inspiring. They need to be based on the notion of empowerment, seeking to increase the spiritual, political, social and economic strength of individuals within a community and as such need to be liberating, forming a praxis of action and reflection upon the world in order to transform it.

To achieve this, the role of the facilitator becomes vitally important, as the theatre's effectiveness in development depends greatly on the proficiency of the practitioner (Mda, 1993). They need to not only be well rehearsed in the exercises and games provided by theatre that are used to warm up the participants to increase and encourage the level of participation (Boal, 1992), they also need to have clarity of what development and development communications entail. As such, the development practitioner needs to be a reflective practitioner, one that has the ability to reflect on and consequently, or simultaneously, modify their professional practice, which is in itself reflexive in terms of transparency of the process of selection, reflection and modification that underpin it (Ackroyd, 2006). The term 'reflective practitioner' describes a working, practicing professional who brings to their work a praxis, based on reflection-on-practice and reflexivity-in-practice (Taylor, 2000). The ability to be a reflective practitioner largely depends on three things: knowing-in-action, reflection-on-action and reflection-in-action. Knowing-in-action describes the professional know-how which determines actions and interactions, based on a sound understanding of tools and techniques, and the ability to put those into practice. Reflection-on-action refers to the evaluation of practice, critically thinking back on knowing-in-action to determine its efficacy or to consider alterations needed in practice which might promote better results. Reflection-in-action refers to thinking on your feet, the ability to see what it going on in practice and make immediate decisions to change the direction of the practice. While this is one of the most difficult to achieve, it is also one of the most important aspects of being a practitioner, particularly in the forms of applied drama, where the practice is co-operative, indeterminate, improvised and interactive (O'Neill, 1996). Particularly in development, reflective practice is a process of enlightenment and emancipation, which seeks to empower people to become social agents of change, whereby they expose and then, through their own agency, bring down the forces of social injustice that prevail

within society. The purpose is to equip people with both the knowledge needed to be powerful and a critical consciousness of how power operates (Ackroyd, 2006). This creates an emancipatory praxis, intended not only to understand how participants construct their world but also propose ways in which patterns of power might change.

Theatre presents an excellent way of communicating social messages to people, and provides a forum where these messages can be interrogated and assessed. As such, there is enormous scope for theatre in environmental and climate change communication.

3.4 The use of theatre in creating social change and awareness

This section will discuss the use of theatre in creating social change and awareness. It will start with a discussion of the South African context followed by a discussion of the international context.

3.4.1 South African context

During the 1970s, theatre was used as a powerful political aesthetic that commented on and challenged the evolving social and political environment of South Africa. Theatre practitioners of different races, cultures and classes formed collaborative groups to raise consciousness in a process which was known as 'workshop theatre' (Fleishman, 1990). South African workshop theatre was born in the cities, representing an urban form of cultural expression that was strongly related to traditional performance forms, often with music, dance and narrative all found within a single performance (Fleishman, 1990). This time saw the rise of the Black Consciousness Movement and the term "Black Theatre" (Hauptfleisch and Steadman, 1984:140) was used to describe theatre developed by and for the black majority, through the collaborative work of whites and blacks alike. The formation of *Workshop '71*, *Junction Avenue Theatre Company* (1976) and *The Market Theatre* (1976) contributed to creating a platform for inter-racial theatre and dialogue, and was later termed 'Protest Theatre', 'Resistance Theatre' and 'Struggle Theatre'.

During this time, theatre was found to be a good technique for expressing problems, both politically and work-related, and institutions such as Workers Unions began to use theatre to voice grievances with employees and educate fellow workers (Fleishman, 1990). As the *apartheid* regime began to crumble in the late 1980s, however, and as "movements of urbanisation, globalisation and migration" (Spitezok von Brisinki, 2003:115-116) were on the increase, political motivations of theatre started becoming obsolete.

After the 'days of the struggle' there was a tremendous shift in focus throughout the nation, and while theatre became less popular, it was by no means forgotten. The Workers Unions continued using workshop theatre (Gunner, 2001) and it became popular for township youth to form theatre groups, particularly after the notable success of *Woza Albert!* – perhaps South Africa's most successful play both internationally and locally - that generated awareness about the *apartheid* regime and expressed the social and political views of the oppressed majority (Fleishman, 1996). One such community group was the Sibikwa Community Theatre Project. Originally established to address violence and uncertainty experienced by youth during the turbulent 1970s, their recent productions have focused on "water pollution, waste recycling, violence in the home and youth attitudes toward sexuality and HIV/AIDS" (Spitezok von Brinski, 2003:119). The group has also done outreach work aimed at building and sharing theatre skills with underprivileged youth.

The primary aim of these theatre groups in the 1980s was to use theatre as a means of communication political messages to community members who were in the same situation and wanted the same objectives. After the political struggle, these same groups began to exercise their skills for 'Educational Theatre' and 'Theatre for Development' (Davis and Fuchs, 1996).

The HIV/AIDS pandemic has ravaged most South African communities over the past fifteen years and government and NGOs alike have put considerable effort into communicating messages of awareness and prevention for HIV/AIDS. Companies such as DramAide and Theatre for Life have proven theatre to be a powerful and successful medium for HIV/AIDS communication and continue to create awareness countrywide (arepp: Theatre for Life, 2008; Dalrymple, 1993; DramAide, 1996). Thus, theatre groups, although different in shape and form, continue play a significant role in communication social messages.

More recently, environmental issues have taken to the fore, and theatre has been used to explore issues of water conservation by both the City of Cape Town and the eThekwini Municipality. In the first instance, an industrial theatre group was used to promote water awareness in communities and schools, which was directly linked to several water demand programmes. As a result of this engagement, the campaign was deemed successful, and was measured by the fact that Cape Town's water saving target was exceeded – this proved that awareness initiatives, and use of theatre within them, were vital in changing water-use behaviour and in assisting people in making informed decisions (City of Cape Town, 2009).

In Durban, similar experiences were found with a street theatre performance that discussed a broad spectrum of issues regarding the sewage system, which was designed to serve illiterate communities. The drama is highly interactive and within a period of one year, a total of 550

performance were given within the Durban Metropolitan Area, reaching approximately 40 000 school children and 35 600 adults (eThekwini Municipality, 2009). Performances were held in taxi ranks, shopping centres, hospitals, clinics and councillor ward meetings, generally areas here under-serviced or first-time users of municipal services congregated. In the drama, a local politician is asked to help resolve a sewage blockage problem and through discussions with the local people, it becomes apparent that his perception of water and sewage services is different from that of the local people. Through this interaction and discussion, the audience learns the truth of how waste and water systems work. As the difference of understanding is resolved, relationships between the politician and the locals improves and the audience has a better understanding of municipal services, both in terms of its purpose and the correct manner in which it should be used. As was commented by the Municipality, "whilst the message of the Street Theatre performance is portrayed in an amusing way, it is a serious attempt to obtain the co-operation of residents in keeping the sewers free of blockages, to report blockages, and to refrain from making illegal connections to sewers. The grassroots setting of the play portrays sympathy with under-serviced or first-time users of municipal services" (eThekwini Municipality, 2009: no page).

Environmental theatre is often referred to as 'green theatre' dealing with a wide range of environmental concerns. May (2005:87) suggests that theatres inherent communality "makes it an ideal site for examining the habits of mind that perpetuate unjust and unsustainable paradigms, and/or precipitate cultural transformation". She continues to say that theatre, much like the environmental justice movement, forces the question of human ecology and allows for an examination of the disproportionate impact of environmental degradation on the poor and more disadvantaged members of society. This concept is supported by Heinlein (2006:9) who states that "when a performance is acted out it provides the potential for us to see something about ourselves, as both individuals and social communities".

One of the reasons that theatre is an effective way of discussing environmental issues is because "theatre functions as a field of exchange where stories take flight, moving between the permeable spheres of self and community, then out into the terrain of the lived experience" (May, 2005:90). Stories are a means whereby people and places are connected, and the dramatic form carries meaning that goes above and beyond pure text.

3.4.2   International context

There are numerous examples of theatre movements discussing climate change, including *Speak Out, Weathering Change, The Climate Change Show,* and *Well Worn.* These, and numerous

others have been successful in not only discussing climate change, but in promoting adaptation strategies and inspiring people to take personal action to make a difference. The use of theatre in this form of communication is also being used in tertiary institutions around the world. At the University of the South Pacific, the Institute of Applied Sciences currently has a project that takes a holistic approach, integrated approach to sustainable development through the integration of climate change and variability with biodiversity conservation, which at the same time fostering youth contribution (USP, 2008). In 2007, more than 80 youth from 3 provinces in Fiji were provided with skills in theatre for development and the use of songs, cultural dances, drama in education and awareness raising tools for development. From this initial team, 3 theatre groups were established and have performed climate change related dramas and songs in over 28 villages. It has been noted that people's awareness of climate change impacts on biodiversity and its connectedness to sustainable development have been enhanced through the theatre group outreach programmes. Comments from the audience have included that the use of theatre ignited curiosity and excitement and generated meaningful discussions, especially on such a complex issue such as climate change. In this context, the use of theatre for development is also in keeping with the passing down of history of most Pacific island countries, and it was further expressed that the community youth are now also reviving and maintaining their traditions and cultures (USP, 2008).

The British Council of Israel recently held a forum theatre workshop in Tel Aviv, 2006, with the aim to raise public interest, awareness and understanding about science and technical aspects of climate change. From this workshop, it was commented that "drama is a safe way of getting people to talk about and confront issues while challenging their assumptions... The use of forum theatre to engage audiences with the issues surrounding climate change allows them to view things from a different perspective, to advise the characters and decide the outcome" (Feldman, 2006:3). In the workshop report detailing the outcomes of the event, it was commented that while the Council was aware that combining forum theatre with scientific communication is a new approach for most people, it allowed for the shattering of stereotypes and opened the door to new ways of thinking. This confirms the notions of May (2005:97) when she stated that theatre is a living art subject to social change and that it "possesses a unique capacity to generate new stories that can root us in a sustainable future". One of the most significant outcomes of this workshop was the acknowledgement that scientists discovered that drama is an effective tool for dialogue that has the ability to convey scientific concepts and ideas and is a powerful communication device.

In the United States, theatre has a long standing history of creating a dialogue about people and their environment, dating back to the late 19th Century. During this period, in both America and

Europe, concerns were being raised over the Western politics and popular culture, which occurred in response to an increased awareness of the socio-environmental changes as brought about by the industrial revolution (Heinlein, 2006). At the turn of the 20th Century, most early American drama focused on the expansion and exploitation of the environment that was happening across the land. Plays were written about the gold rush and the effect this had on the land and its native people, frontier plays often sanctioned genocide of Native America people, and stories of expansion and exploitation opened public debates over mining, wilderness preservation, hydropower and urban population (May, 2005). Theatre has always served as a forum where people negotiate and generate relationships into their environments (May, 2005).

In the 1960s, theatre groups became active in what was officially classified as "environmental theatre" when experimentation began to occur within the theatrical space – indoor and outdoor spaces became the focal point for theatre. May (2005) continues to say that this non-traditional staging deconstructed the separation between audience and actor and provided new levels of audience participation and reciprocation – much like the forms of theatre for development discussed earlier. The result of this was not only a deep connection between participants and each other, but also between participants and their natural world.

From then on, environmental theatre started to take shape and theatre makers all worldwide began to take a more active role in communicating issues of environmental concern, and in particular, climate change. While the type of theatre discussed thus far has used a more traditional approach to theatre to communicate these issues, there are more recent cases where people have started using theatre for development techniques to discuss these issues as well. In 2003, local environmental health advocates in the United States took an alternative and more creative method of addressing community's experiences of toxic exposure using Forum Theatre. John Sullivan, the outreach coordinator of the National Institute for Environmental Health Sciences (NIEHS) at the University of Texas, favours the multifaceted and processional nature of Forum Theatre in such situations (Sullivan and Parras, 2008:21). He uses workshops to achieve two aims: discover the experiences of the community and inform them of the science of toxicity. These two components are then used by the group to create images (similar to Image Theatre) and construct a scene depicting the community's reaction to an environmental problem and possible paths of resolution. The scene purposefully does not have a resolution; it is up to the forum (actors and audience) to give the scene closure.

The issue of climate change is often considered to be an issue too big to fit onto the stage, as it is a complex process that occurs predominantly in the natural world. As such, many theatre activists have found it difficult to find an appropriate human story through which to approach it. Earth

Matters on Stage (EMOS) is an ecodrama playwrights festival held in northern California that encourages playwrights to engage in issues that are ecological, civic and personal. They encourage playwrights to produce new work that "put an event of environmental crisis or conflict at the centre of the play... explore issues of environmental justice; interpret "community" to include our ecological community; attempt to give voice or "character" to the land... [or] develop a sense of connection between human and non-human communities" (Fried and May, 2004). In this way, artists are encouraged to find stories that need not necessarily have human characters, but to look at the concepts of characters and communities in a much broader context. This is surely the case for climate change as the threat that it poses to both the human and environmental world is unprecedented, and its communication is vital. As stated by Wilkinson (2007, no page), "if the threat that climate change poses to our world is to be fully communicated, we need much more than dry scientific reports and hand wringing newspaper columns. Like any art form, theatre can ignite the imagination and make the abstract seem personal. Climate change may not be the easiest issue for writers and directors to tackle, but it is arguably the most important." This notion is re-emphasised by Bromley (2009, no page) who states that topics such as climate change and its potential impacts can often be overwhelming. She goes on to say that "this feeling of being overwhelmed all too often leads to denial of what is happening, and/or the ability to make choices and take actions which could help bringing about constructive change." Participatory theatre is a one way of communicating climate change as it functions as "a field of exchange where stories take flight, moving between the permeable spheres of self and community, then out into the terrain of lived experience" (May, 2005:86) and "theatrical styles, devices, characterisations, settings and stories... tell the human story within the ecological story" (May, 2005:93). Perhaps what is important to note here is that, while climate change issues pertain to changes that will happen to the environment, what is more significant is the impact that this will have on the human family. In this sense, human stories of both survival and adaptation need to be told within the environmental context to not only understand what the scientific effects of climate change will be, but to also understand the human dynamic within this – what people think, how they feel and how they respond. In this way, theatre plays a major role in communicating these ideas. In the book *Other People's Shoes*, Walter (2003:103) explains that actors "are the custodians of other people's thoughts, and must locate them and reproduce them as faithfully as possible. This has nothing to do with interpretation or limitation. Accents and mannerisms are not the point. This exercise is to quieten our own ego and let another person speak." This act of emphasising the thoughts and experiences of others allows us to understand more completely the effects of changes and impacts on people – be they social or environmental – and once that understanding and empathy has

occurred, action can be taken to discuss the problem more comprehensively, and to find solutions to it.

3.5   Conclusion

This chapter demonstrated the ways in which theatre can be used as a means of communication within both a socio-developmental and environmental context. It has explicitly expressed the tools that theatre uses and the manner in which these are employed in order to achieve optimum results. What is perhaps most important from this research is to truly understand that theatre's "multivocal, embodied, shapeshifting qualities" (May, 2005:100) make it a felicitous tool for exploring questions of identity and community, of the environment and of the human engagement with it. To this extent, theatre has the ability to reconstitute the world and to re-conceive our notions of community and interaction in such a way that the boundaries between self and other, nature and community, all begin to dissolve. Theatre enables people to discuss issues in a safe environment and to rehearse action for change in a world that is clearly in need of revolution of both action and thought. To this extent, and through the ability of theatre to re-orientate people's behavioural patterns, it should be considered as a pertinent tool in contributing to the mutual sustainability of nature and humanity.

CHAPTER 4
STUDY AREA AND METHODOLOGY

4.1   Introduction

Having discussed the need for adaptation strategies in response to climate change and the use of theatre as a communication tool, as seen in Chapters 2 and 3, it is important to establish the methodology that was undertaken for the purposes of this research. This chapter will discuss the context of the study, specifically the initiatives undertaken by the eThekwini Municipality and the community of Amaoti, located in KwaZulu-Natal. It will discuss the conceptual framework that the study operates within and the methodological tools that were used during the fieldwork to determine the social vulnerability of the community and the use of theatre in communicating potential adaptation strategies. The processes that were followed and the mode of analysis further discussed.

4.2   Study Context: The eThekwini Municipality and the Amaoti community

Durban is the second most populous city in South Africa with over 3 million habitants, the largest within the Province of KwaZulu-Natal. The city of Durban is governed by the eThekwini Metropolitan Municipality, one of 11 districts in KwaZulu-Natal. The Municipality is one of six 'category A', or 'Metropolitan' municipalities in the country, despite the fact that 60-70% of the Municipality remains rural. Durban is unusual among cities worldwide, let alone South Africa, in that it has a municipal government that has developed a locally rooted climate change adaptation plan (Roberts, 2008). This plan comes in the form of several projects currently underway, including the 'Climatic Future Project', which 'aims to address some of the dire consequences of climate change by understanding and responding strategically'. To tackle disaster risk there is a Municipal Climate Protection Programme (MCPP) that aims to put in place proactive responses to ensure a resilient and sustainable city in a changing climate. The Municipality also has a specific plan to protect its natural environments, stemming from an open space planning project 25 years ago, called the eThekwini Environmental Services Management Plan, which aims to ensure the sustained supply of a broad range of environmental goods and services. While the Municipality has initiated a number of its own adaptation and protection programmes, they are also engaged in a number of internationally funded projects, such as ACCCA, which forms the basis of this study.

The Municipality has initiated these programmes based on several studies conducted that sought to determine the impact of climate change on the City (GAA, 2009; Roberts, 2008). Situated on the eastern seaboard of South Africa and experiences a humid, sub-tropical climate. It has been determined that the eThekwini municipal area is especially vulnerable to the impacts of rapidly changing climate dynamics and possible impacts as a result of climate change may include:

■ Increased spread of vector borne diseases (such as malaria, bilharzia and cholera) within the municipal area;

■ Increased temperature variability and exposure to temperature extremes;

■ Increases in the frequency and intensity of floods and droughts;

■ Potentially increased rate of coastal erosion due to sea – level rise leading to loss of habitable space;

■ Potentially reduced food security for resource dependent households and households earning below South Africa's minimum wage; and

■ Increased variability and availability of water due to shifts in rainfall patterns.

While these impacts apply to the entire municipal area, impoverished peri-urban communities, living in informal settlements are especially at risk since more people are at risk to natural disasters where human development is low. These communities are especially vulnerable to increased frequency and intensity of short duration heavy rains with no net increase in average annual rainfall. In this regard, the following potential impacts can be expected:

■ Affected ability of dams to store and capture water for human consumption and industrial use, due to increased sediment loads being carried in by flood events;

■ Changes in the supply and quality of water;

■ Localized flooding, storm water overflow with ground and surface water pollution;

■ Stress on sewage systems; and

■ Increased potential for the development of landslides and mudslides.

In light of this, the Amaoti community, located in the northern parts of the eThekwini Municipality, was selected for case study research to assess vulnerability and develop adaptation strategies to the identified climate change impacts. Amaoti is the largest informal settlement in Durban with an

area covering approximately 700ha, extending from the Phoenix boundary in the south to the boundary of the North Local Operational Entity in the east.

Amaoti is located in the extreme east of the wider Inanda area within the eThekwini Municipality, as indicated in Figure 4.1. Amaoti covers four Municipal Wards; Ward 53, 56, 57 and 59, and within this there are 14 communities: Nigeria, Cuba, Zimbabwe, Palestine, Moscow, Libya, Namibia, Angola, Mozambique, Tanzania, Geneva, Lusaka 1 and Lusaka 2. The total population of Amaoti is 31,253 in 13,088 households, dispersed amongst the 14 communities (Amaoti Enumeration Report, 2005). It is interesting to note that Ward 59 has the highest population density within eThekwini, Ward 56 the 3rd, Ward 53 the 5th and Ward 57 the 27th (eThekwini, 2008).
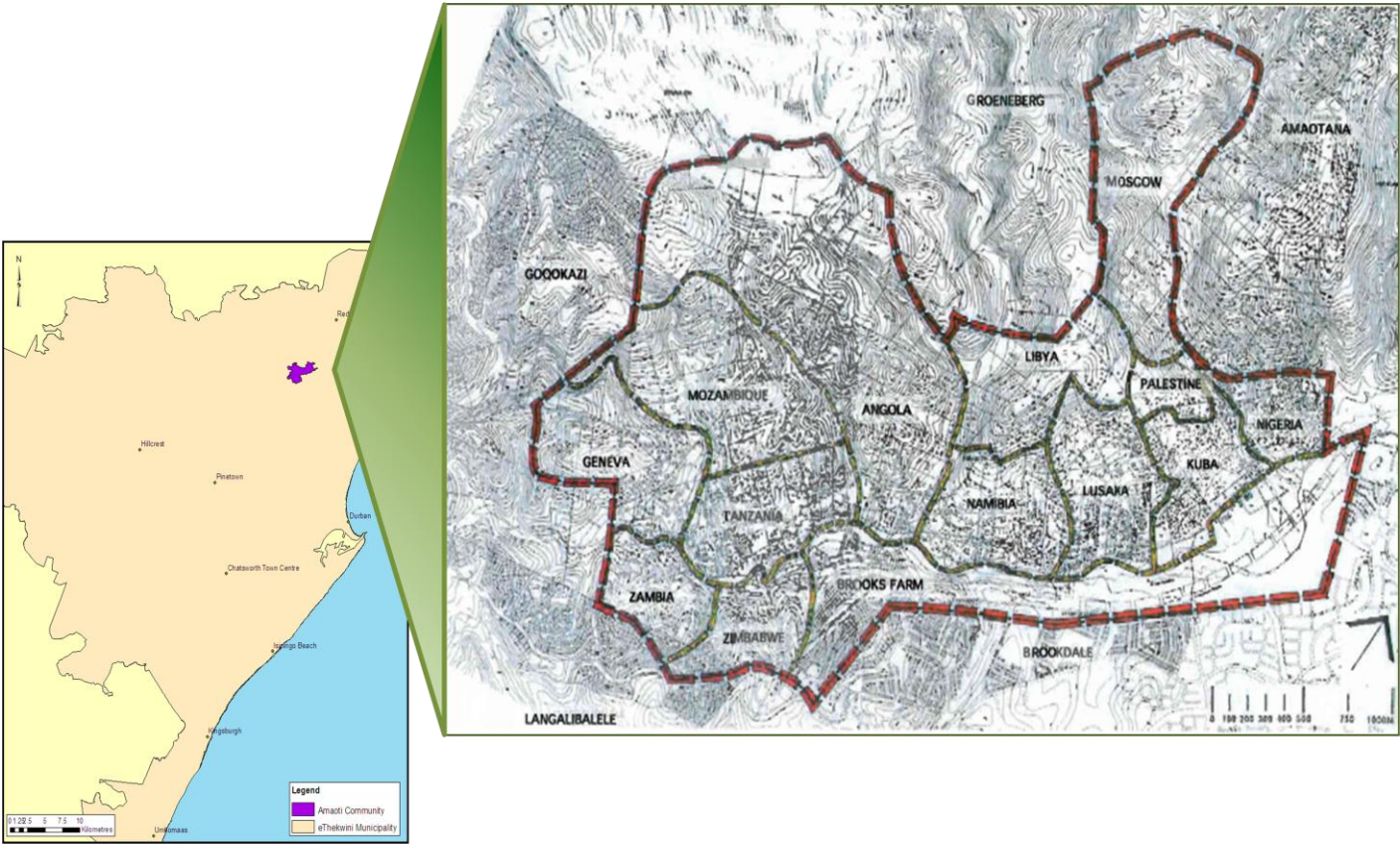
Figure 4.1: Locality map of Amaoti

Most of the development within Amaoti is informal in its nature, with few local supporting facilities and amenities, few formal services and mostly informal and unsurfaced access roads with the exception of the D403. As the largest informal settlement in Durban, Amaoti is densely populated

and is characterised by poor housing, poor sanitation, tenure insecurity and a general lack of other essential services (AER, 2005).

Amaoti, meaning "more wood", derived its name from the densely forested and uninhabited area that it used to cover and late in the 19th Century workers on neighbouring sugar estates would be directed to fetch firewood there. The history of the area is closely linked to the Inanda Mission Reserve and the Qadi chieftainship, and until the 1960s, Amaoti remained a quiet, rural place where land was divided among often prosperous Indian and African freehold farmers and smallholders who were allocated land by the Qadi Chief or his *indunas*.

The various communities of Amaoti have grown largely due to the migration of individuals and families, from areas as far as the Eastern and Western Cape and the Free State, in search of either employment or secure tenure. Some families have settled in Amaoti after being evicted from other settlements within Durban. According to the Amaoti Enumeration Report (2005), 14% of people currently living in the area claim to have been evicted, while 66% claim to have always lived in the area. Land in Amaoti is owned predominantly by the State (99%) and also by private enterprises (1%).

Learning Box 1: Diversity - What's in a name?

There are 14 communities within Amaoti which have interesting names: Nigeria, Cuba, Zimbabwe, Palestine, Moscow, Libya, Namibia, Angola, Mozambique, Tanzania, Geneva, Lusaka 1 and Lusaka 2. Inquiries were made as to how the communities obtained these names and it was found that some represented countries that people were from, such as Zimbabwe, Mozambique, etc. Amaoti houses a wide diversity of people from the rest of the province and southern Africa; understandable considering the location of the community – its northerly position and close proximity to Durban. A common song sung by the youth is in Zulu, English and Portuguese. The less obvious names, such as Palestine and Moscow, had an obscure origin. Apparently, during the *apartheid* era – where black people were sectioned off into less than prime areas and held with a certain disdain – names given to communities were representative of enemies of the state. An interesting tone to set for a community with so few resources and such high vulnerability.
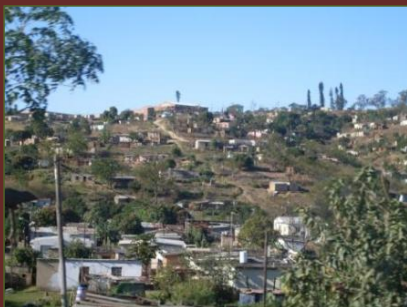
The land in Amaoti is not only used for residential purposes, but for a variety of economic activities as well, including shops, tuck shops, schools, churches and animal rearing. There is also a community hall, police station, clinic and other services present in the area, and while public toilets

and communal water taps do exist, it is noted that their numbers are severely insufficient and they do not meet the need of the community.

It is planned that Amaoti will develop into a high-density area through an *in-situ* upgrade, according to the eThekwini Municipality Slums Clearance Programme. There are currently 5 000 RDP houses in the area and continued development is underway.

To determine the use of theatre as an effective tool for climate change in Amaoti, a methodology was developed that would define interaction within the community. This section will describe the conceptual framework that the study operated within and the different methodological tools that were used. The methodology is comprised of two parts, determining social vulnerability and identifying adaptation options, and developing a play to be performed in the community. Each of these will be discussed, along with the conceptual framework that the study operated within.

4.3   Conceptual Framework: Sustainable Livelihoods Analysis

The sustainable livelihoods approach provided the context in which the study was conducted. The approach is foremost concerned with people, attempting to gain an understanding of strengths that can be converted into livelihoods. The emphasis is on what the poor have rather than what they are lacking, thus placing the focus on people's ability to support themselves both in the present and future (Castro, 2002).

Figure 4.2 depicts the dynamics of the framework in which livelihoods operate and which determine their sustainability.

As Scoones (1998) originally laid out, sustainable livelihoods are achieved through access to a range of livelihood resources, combined in the pursuit of different strategies.

These assets, categorised as human, natural, financial, social and physical assets, are represented as a pentagon, with the centre point representing no assets and the outer perimeters representing the maximum of assets available. The definitions of these categories can be found in more detail in the DFID Sustainable Livelihoods Guidance Sheets (1999). These assets as well as the entire livelihood system are subject to two basic influences. The first is the vulnerability context. This describes the pressure these assets are under – whether they are eroding or strengthening or are under threat of being entirely lost. The vulnerability of the assets directly influences the sustainability of the livelihood. The more vulnerable the assets, the less sustainable the livelihood. The second influence on assets is a collection of structures and processes that define the context and the limitations in which assets can be used. As depicted in the figure, livelihood strategies are

devised to use assets (as influenced by context and vulnerability) to obtain livelihood outcomes (DFID, 1999).
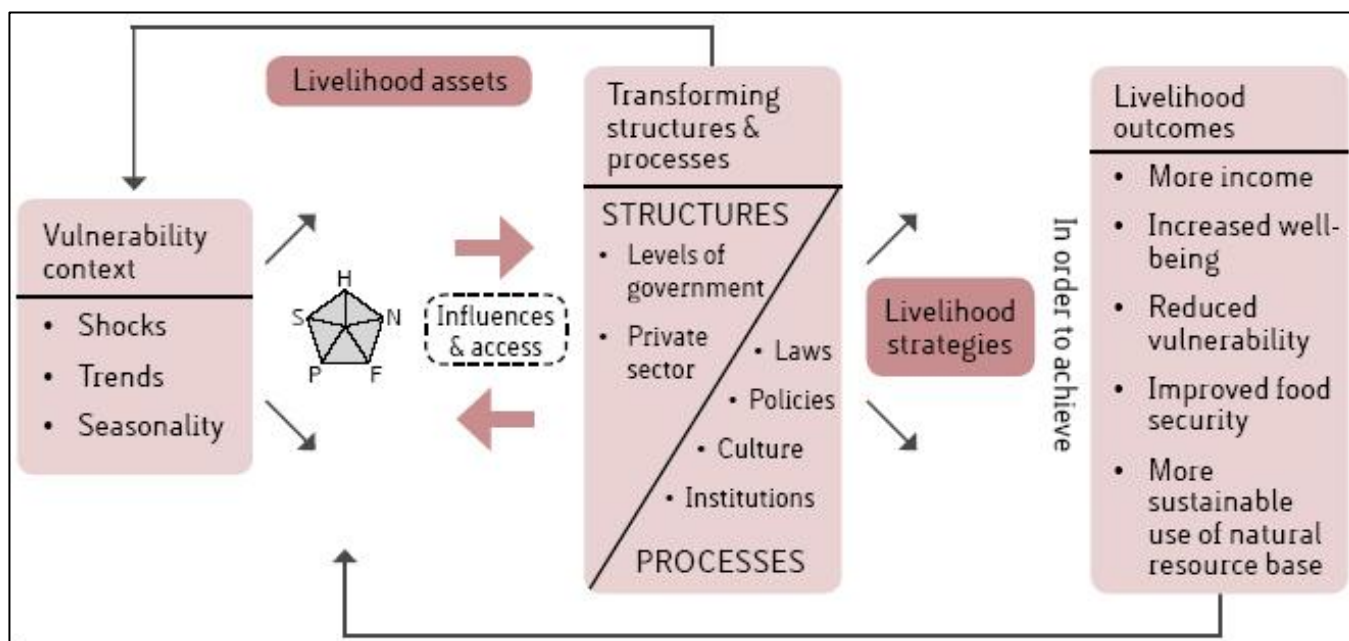
Figure 4.2: Sustainable livelihoods framework

Using the livelihoods framework provided, the assets of the subject community were used in conducting the social vulnerability analysis. Particular attention was given to the sustainability of the natural resource base.

As an application of the transforming processes and structures of the livelihoods framework and given the role of local institutions in livelihoods and climate change adaptation (Agrawal, 2008), relevant local institutions were assessed to some extent, but as suggested by Dolšak and Ostrom (2003) only in the way that they mediate the relationship between social systems and their ecosystems.

Finally, the vulnerability context described in th livelihoods framework were be included in so far as measuring trends in services, recent shocks to the system and seasonality in impacts. However the key ideas of exposure and resilience will be dealt with in the conceptual framework chosen (Turner *et al.*, 2003).

4.4   Fieldwork methodology and analysis

To develop a play that would adequately reflect the issues of climate change within the context of Amaoti, two main steps were taken. Firstly, a vulnerability analysis was conducted to identify areas of social vulnerability that would stand to be exacerbated under the predicted climatic changes. The issues that emerged from this analysis would serve as the focal point for the play. Secondly, a series of drama workshops were held with the Sakhisizwe Group (a local community performing arts group) that explored different types of people and their role in the community. This information was then used to create the actual story of the play – introducing characters and relationships that would frame the vulnerability analysis. Each of these processes is described in greater detail.

4.4.1   Vulnerability analysis

Vulnerability assessments have been applied in a number of contexts and are often utilised by organisations such as United States Agency for International Development (USAID) and the World Food Programme (WFP). To conduct a vulnerability assessment of Amaoti, a method was developed that operated within a livelihoods analysis framework and grounded in livelihoods theory. Vulnerability assessment is defined by set of diverse methods which integrate and consider interactions between people and their physical and social surroundings, according to Hahn *et al.* (2009). It took into account that the interactions between people and their physical and social environments are multidimensional, and thus quantitative methods for assessing vulnerability are commonly made up of various indicators which act of proxies for vulnerability.

The method developed had to allow a composite index to be developed through which numerous variables could be integrated. The approach considered five types of household assets, namely, natural, social, financial, physical and human capital (Chambers and Conway, 1992; Hahn *et al.,* 2009) of the Amaoti community. The indicators used in the vulnerability assessment for the Amaoti community were conceptually similar to those used by Hahn *et al.* (2009) but were adapted to address and adhere to the overall aims of this study which incorporates both qualitative and quantitative aspects.

The vulnerability assessment method developed consisted of five major components, namely, Livelihoods and Demographics, Food Security, Infrastructure and Services, Water and Sanitation, and Social Networks. These categories were determined based on the projected climatic changes for the eThekwini Municipality and the anticipated effects that these will have, based on the work of Dessai (2002), Rotberg (2009), McCarthy, *et al.* (2001), Lenhart (2009) and McGeehn and

Mirabelli (2001). This is described in greater detail in Table 4.1. Once these impacts had been identified, the tools of the method were developed to determine the process of data collection.

Two sets of tools were developed; one set quantitative and the other qualitative. The tools and analysis that were used for each activity are explained below. The results of the quantitative analysis served as the basis for the vulnerability determination, while the qualitative information further explained and supported the quantitative results.

Table 4.1: Projected climatic changes and their impacts

Projected impact	Affected	Rationale	Indicator	Indicator component
Increased heat stress	- Older people - Younger people - Urban poor	Increased mortality and morbidity	- Number of elderly and young people - Number of people below the poverty line	Livelihoods and Demographics
	Transport	Extreme temperature events (heat waves) could cause disruptions to transport - through damage to transport infrastructure (e.g. road pavement and rails).	- Type of transport used - Reliance on transport	Services and infrastructure
	Food production systems	Changes in temperature will affect household crop production	- Number of people involved in household food production - Diversification of food grown	Food Security
Increased vector-borne diseases	Health systems	Increase in disease will put more pressure on health services and infrastructure	- Current coping capacity of health - Access to health facilities	Services and infrastructure
Changes in quality and quantity of water	Water systems	Changes will impact on existing water facilities	- Households with running water - Noticeable changes to water quality - Affect of water on health	Water and Sanitation
Stress on sewage systems	Sanitation systems	Changes will put greater stress on existing sanitation systems	- Number of households with flush toilets	Water and Sanitation
Localised flooding	Existing infrastructure	Flooding and extreme weather events will negatively impact on existing infrastructure and services, particularly	- Number of households with electricity - Reliance on public transport	Services and Infrastructure
Reliance on social networks	Existing social networks	Responses to climate changes will require action from social networks. Adaptive capacity is largely determined by social structures within communities and their ability to adequately respond.	- Number of people involved in social groups - Perceptions of unity within the community	Social networks

4.4.1.1   Quantitative Data Collection - Survey

The first tool was a survey to be conducted among the residents of Amaoti to gather quantitative information about the community on a large scale, which was useful in trying to develop a general understanding of the community. Such information included:

- Demographics, including age, gender, household size, and education levels;

- Stakeholder relationships;

- Food security status;

- Social networks and connections;

- Waste and water issues;

- Existing infrastructure;

- Communication methods; and

- Observed changes in the environment.

These issues were organised into a questionnaire to be administered to the sample population.

Given the time and financial limitations of the study the survey had to be limited to a single ward within Amaoti. Ward 53 was selected because access into the community had been previously granted to the researcher by the Councillor. The survey was, thus, conducted within the boundaries of Ward 53.

The population of Ward 53 is approximately 28 000 (eThekwini, 2008). From this a sample of 250 was chosen, which allowed for a confidence interval of 6.17 with a confidence level of 95% (CRS, 2009). While a confidence interval of 6 is high, it should be borne in mind that this research was not statistically driven and that rather, interest was placed on the emergence of themes and issues that would influence the development of the community theatre. With little emphasis placed on the specific data gathered through the survey, but rather the emergence of themes within the context of the overall study, the high confidence level was not a major concern.

Ward 53 is marked predominantly by a combination of formal and informal settlements, and the survey attempted to gather information from these two areas. An effort was made to use cluster sampling to ensure that different segments of the population were represented (Lohr, 1999), such as women-headed households and informal structures, age differences, etc, The survey was designed with this intention in order to gain a sufficient overall understanding of the community.

However, when the survey was conducted, issues such as safety and accessibility arose that prevented the clustering method from being strictly adhered to. Although this compromised the research generating accurate statistics, the purpose of the survey was to gain sufficient information for emerging themes and in this regard convenience sampling was instead used. Convenience sampling is used in exploratory research where the researcher is interested in getting an inexpensive approximation of the truth. As the name implies, the sample is selected because they are convenient. This non-probability method is often used during preliminary research efforts to get a gross estimate of the results, without incurring the cost or time required to select a random sample (Experiment-Resources.com, 2010).

Four local fieldworkers were trained and subsequently conducted the survey. The survey can be found in Appendix A, along with the descriptive survey results.

The survey was developed according to the five major components outlined in Section 4.1 and Table 4.1, namely, Livelihoods and Demographics, Food Security, Infrastructure and Services, Water and Sanitation, and Social Networks. The information gathered from this primary data was then used for the assessment which acted as proxies for vulnerability. Table 4.2 shows the major components with their associated sub-components. Definition of components and sub-components used is also shown.

A Vulnerability Index (VI) composed of various components and sub-components, was used to analyse the data. The calculation of the VI follows the composite index approach. For the purposes of this study, each sub-component contributed equally to the overall indicator despite each component differing in its number of sub-components. This 'balanced weighted average' approach has been used to develop water vulnerability indicators by Sullivan *et al.* (2002).

The process followed in calculating the overall indicator begins with standardizing each of the various sub-components (GAA, 2009). This is done because each sub-component is measured on a different scale. For example, the Dependency Ratio is measured on a ratio scale while the Education Index is measured on a percentage scale. Equation 1, based on the life expectancy formula used in the Human Development Index (HDI) is shown below:

$$index_{sd} = \frac{s_d - s_{min}}{s_{max} - s_{min}} \qquad (1)$$

Where,

s_d = observed sub-component for Amaoti; and

s_{min} and s_{max} = minimum and maximum values, respectively for each sub-component.

For sub-components measured on a percentage scale, minimum and maximum values were 0 and 100, respectively. Subsequent to standardizing each of the sub-components, each sub-component was averaged using Equation 2 below:

$$M_d = \frac{\sum_{i=1}^{n} index_{s_{di}}}{n}$$
(2)

Where,

M_d = one of the six major component for Amaoti (Livelihoods, Food Security, Infrastructure, Water, Social Networks, Environment);

$index_{s_{di}}$ = the sub-components (indexed by *i)* that make up each major component; and

n = the number of sub-components per major component.

The final step in calculating the overall vulnerability index involves averaging each of the major components as shown in Equation 3 below:

$$VI_d = \frac{\sum_{i=1}^{6} w_{M_i} M d_i}{\sum_{i=1}^{6} w_{M_i}}$$
(3)

Where,

VI_d = overall Vulnerability Index (VI) for Amaoti (equals weighted average of the six major components); and

w_{M_i} = the weights of each sub-component (number of sub-components per major component).

In considering this, Table 4.2 was developed through a consultative process between the statistician at Golder Associates and the researcher. The different components and how they would be measured were formulated under his advice. This process was followed because the researcher did not have a background in statistics and thus relied on experts for guidance in this regard.

To obtain positive results from the survey, a number of actions were taken to ensure reliability and validity. Morse *et al.*, (2002:9) explains that verification "refers to the mechanisms used throughout

the process of research to incrementally contribute to ensuring reliability and validity and, thus, the rigor of the study". It is further explained that this is done through a process of constant reflection, to ensure that errors are identified and corrected before they subvert the analysis.

In this way, validity was ensured through data collection by:

■ Conducting a workshop with the field team conducting the surveys to ensure they understood and felt comfortable with the process; and

■ Holding daily feedback sessions with the fieldworkers to reflect on the surveys conducted during the day and to identify areas of improvement;

In this way, particular attention was paid to ensuring the competence of the field team, which Guba and Lincoln (1981) who explain that it is important for investigators to be adaptable, responsive and sensitive.

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Table 4.2: Major components and sub-components of the vulnerability analysis

Major component	Sub-component	Units	Definition
Livelihoods and demographics	Dependency Ratio	Ratio	The sum of household members aged below 18 and over 60 years divided by the number of household members aged 18 – 59 years.
	Education index	Ratio	Ratio of household members with at least some formal education to members with no education.
	Poverty Index	Percent	Percentage of household members earning below R800/year.
	Crop diversification index	Ratio	Measures the diversity of crops produced by crop producing households.
Infrastructure and services	Distance to nearest medical facility	Percent	Average time it takes a household to get to the closest medical facility.
	Reliance on public transport	Percent	Percentage of respondents relying on public transport.
	Households with electricity	Percent	Percentage of respondents having access to electricity.
Water and Sanitation	Households with running water	Percent	Percentage of respondents with running, potable water.
	Noticeable changes to water quality	Percent	Percentage of respondents who have observed noticeable changes to water quality in the area.
	Respondents health affected by water quality	Percent	Percentage of respondents who perceive water quality to have affected their health.
	Households with flush toilets	Percent	Percentage of respondents with flush toilets
Social Networks	Social groups in the community	Percent	Percentage of respondents belonging to social groups in the community.
	Perceptions of community unity	Percent	Percentage of respondents perceiving the community to be united.

4.4.1.2   *Qualitative Data Collection Tools*

The following tools were used in the qualitative data collection: stakeholder analysis through the use of Venn Diagrams, focus group discussions with existing community groups, household interviews and visits with selected households, rich pictures, interviews with key Municipal stakeholders and theatre for development.

The qualitative data collected was largely done through the use of a variety of Participatory Rural Appraisal (PRA) tools that sought to determine specific pieces of information pertaining to the five selected categories. Three students from the University of KwaZulu-Natal conducted these PRA tools under the guidance of the researcher from June to July 2009 while residing in the community for the duration of the time. To ensure quality in the implementation of the fieldwork, daily telephonic communication occurred with the fieldworkers, briefing meetings were held twice a week to discuss the tools and their application, identifying challenges and means of overcoming these, and a daily review of the work completed.

A stakeholder analysis was conducted at a community meeting using Venn diagrams that showed the key groups within Amaoti and their importance to the functioning of the community. Different sized circles were used to indicate their importance within the community, while the placement of the circles indicated their degree of relevance. The objective of using this tool was to provide a clear understanding of the various stakeholders involved in the community and to provide insight as to how best to engage with them.

Focus group discussions were held with 12 existing community groups that had been identified by the Councillor and formed through different processes. These discussions were facilitated through the use of semi-structured interviews, which were conducted with a fairly open framework, allowing for communication to be conversational and focused (FAO, 2007; Mudhara and Shoko, 2004). These meetings were arranged through liaising with the community structures identified, as well as from recommendations with the Councillor. Meetings were usually held at the organisation's workplace, and the specific work areas of each group were focused on in order to gain insights. A table detailing the results of these discussions can be found in Appendix B.

A total of eight rich pictures were drawn with the 12 community groups described above. The rich picturing process was aimed at identifying current processes, key people and activities as experienced by each group. The groups were asked to symbolically represent different aspects of their lives including their key activities, social networks and both institutional and infrastructural arrangements. They were employed to try and explain often complicated situations by using the symbols to depict more subtle points of view, such as the way people perceived their life and their

role in it (Skelton, 2000). The rich pictures drawn by the community groups can be found in Appendix C.

Interviews were conducted with 24 randomly selected households within Ward 53. Each day households were selected based on security and accessibility and only household heads were conversed with. The interviews aimed at answering a broad set of questions developed around the framework as used for the survey and discussed in Section 4.4.1.1. The interviews were semi-structured in nature and allowed for the interviews to be conversational, allowing the interviewer to both give and receive information (FAO, 2007). The majority of the questions used were formulated ahead of time rather than during the interview itself. At the beginning of the process, four interviews were conducted as a mini-pilot study, and the information gathered in these interviews was not used in the analysis. Information was asked according to the identified categories and then coded, the results of which can be found in Appendix D. At the beginning of each interview, the project was introduced to the household head through the use of a Background Information Document previously prepared, which served to build an initial rapport with the correspondents and elicit cooperation.

The Raw Data

Organisation
-Filing
-Creating a computer database
-Breaking large units into smaller ones

Perusal
-Getting an overall 'sense' of the data
-Jotting down preliminary interpretations

Classification
-Grouping the data into categories or themes
-Finding meaning in the data

Synthesis
-Offering hypothesis or propositions
-Constructing tables, diagrams, hierarchies

The Final Report

Figure 4.3: Data analysis spiral

Once these methods had been implemented, key stakeholder interviews were conducted with representatives of the Water, Health, Housing and Spatial Planning sectors of the eThekwini Municipality. This served as a 'ground-truthing' exercise, where the information gathered from the community was compared with that from the Municipality. This added to the results, providing greater explanation of the infrastructural systems and developmental plans intended for the community, while also understanding community challenges from a different perspective.

Once the data had been collected, it was then analysed through the use of the data analysis spiral (Creswell, 1998) as seen in Figure 4.3. Using this approach, several steps were taken which included:

■ Organising the data into a Microsoft Excel database, based on the different themes identified within each tool used;

■ Perusing the entire data set to get a 'sense' of what it

contains. During this process, notes were recorded suggesting possible categories or interpretations;

- Identifying general categories or themes and then classifying the data accordingly, paying attention to patterns that emerge; and

- Integrating and summarising the data.

The spiral approach involved breaking large or disparate data sets into smaller ones (Leedy, 2005) in an attempt to understand the meaning contained within. For the purposes of this research, the data was sorted according to the five main themes identified previously. It is important, however, to bear in mind that the data obtained was multifaceted and fell into several different categories simultaneously, thus a certain degree of personal interpretation was required to analyse the data effectively.

4.4.2   Theatre for Development

Once the data had been analysed and the areas of vulnerability ranked, it was possible to determine appropriate adaptation strategies that could be implemented within the community. This was done through participatory meetings with 9 key specialists from Golder Associates and the eThekwini Municipality (further discussed in Chapter 5). Once the adaptation strategies had been developed, work was conducted with the Sakhisizwe Performing Arts Group – an established community group in Amaoti focusing on dance and music - to develop the storyline of the play that would allow for the identified vulnerability and adaptation strategies to be framed in a real life situation. A series of workshops were conducted to determine varying aspects of information, and to develop the play *Fish Out of Water* (Appendix E).

There were two intended performances of the play, but due to negative behavioural attitudes only one play occurred. To test the efficacy of the play as a communication tool, a survey was conducted with 20 audience members. This survey can be found in Appendix F. The survey focused on two main aspects: testing to see if the key climate change and adaptation messages of the play were adequately conveyed to the audience members and determining what their opinions were of theatre as a communication tool.

In addition to this, a questionnaire was given to the performers themselves, to determine how their understanding of climate change had changed, and what impact the process of developing and performing in a play had had to them personally. This questionnaire can be found in Appendix G. These aspects are further elaborated on in Chapter 5.

4.5   Conclusion

This chapter has discussed in detail the framework of livelihoods analysis that was used in this study, including the qualitative and quantitative tools that were used to gather information. These tools included vulnerability analysis indicators that were determined through a survey, focus group discussions, household interviews, rich pictures and Venn diagrams. Detail was also given regarding the theatre process that was undertaken to develop a play about climate change adaptation, and how responses to the play were determined. These results form part of the discussion in response to the research questions, as found in Section 1.2, and are further detailed in Chapter 5.

CHAPTER 5
RESULTS

5.1   Introduction

Using the methods described in Chapter 4, the research was conducted to determine how pertinent information for communication is identified, how theatre can be designed to be an effective communication mechanism, how this mechanism can be implemented and evaluated, and to determine if theatre is an effective means to communicating knowledge. From the ground research done, The ground research conducted allowed for the determination of relevant information to be gathered and possible adaptation strategies were identified.

This information, through a series of workshops, was then encapsulated into a play which was performed, and responses to the play assessed. This chapter explains each of the results from the fieldwork conducted.

5.2   Vulnerability assessment

Through using the tools identified in the previous chapter, it was found that the area of greatest vulnerability in Amaoti was water and the lowest vulnerability was social networks, as seen in Table 5.3 and Figure 5.4. The findings of this assessment have been presented according to the five vulnerability components explained in Section 4.4.1.

Table 5.3: Vulnerability index of Amaoti

Component Indicators	Index
Water	0.772
Infrastructure and services	0.754
Demographics and livelihoods	0.513
Food security	0.377
Social Networks	0.281
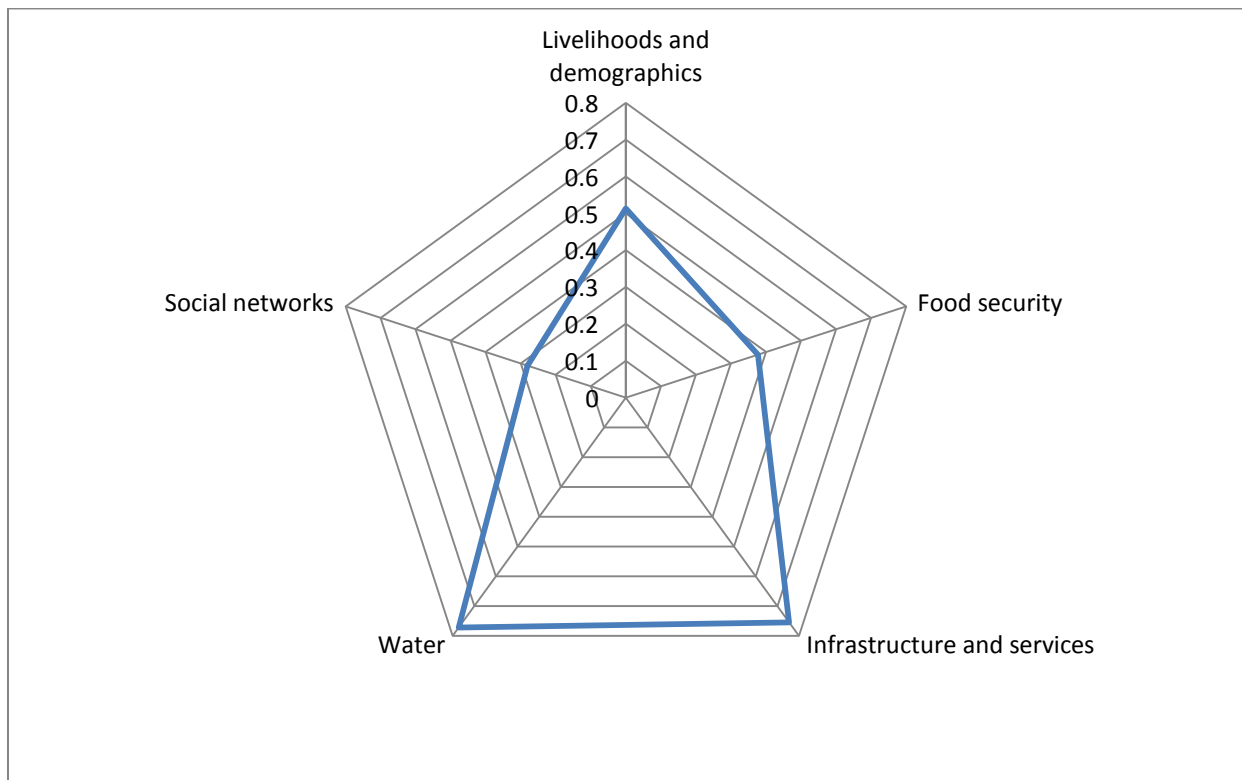
Figure 5.4: Vulnerability of Amaoti

5.2.1 Water and Sanitation

Through the survey, a majority of 89% of the respondents indicated that they do not have running water. As a result, 94% of respondents obtained their water from standpipes with the remainder obtaining water from their neighbours. Thirty percent of the respondents had noticed changes in the water, both in terms of quality and supply, and 26% have observed changes in their health as a result of this.

The study revealed that Amaoti is highly vulnerable to water scarcity. Through the household interviews it was determined that in the early 1980s, water scarcity was not experienced by the community (which had a significantly lower population at the time) and water was collected from fountains, rivers and boreholes. During this time the rivers were kept clean with the help of *Oqonda Policing Forum,* a government supported community based organisation no longer in existence, which aimed at protecting the rivers against pollution. With this system no longer in operation, and with a significant influx of people into the area, access to water swiftly became an issue. According to the household interviews, the large informal settlements within Ward 53 – namely Sigcau and Angola – face the greatest challenges and are most susceptible to water scarcity.

The households were aware of the initiates undertaken by the eThekwini Municipality to rectify the water scarcity problem. According to Khumalo and Blose (2007), in June 2007, a government project named Impilo Engcono was initiated to supply ground water tanks (to hold potable water) free of charge to approximately 1 300 households in the Tanzania and Angola sections of Amaoti, an investment totalling R3 million. The ground tanks were piped into a system and automatically refilled once a day with 200 litres of water, as per national 'free basic water' regulations (DWAF, 2009). Through the ground-truthing exercise with the Municipality, attention was drawn to a key study that indicated that this service was installed with the intent of reducing non-revenue water, and to a significant extent, the project seems to have drastically reduced both the incidence of general water loss and of illegal connections (Wilson, 2008). In a follow-up study that was conducted (Wilson, 2008), only 16% of people reported seeing water flowing from taps without being used, and comment was made water was flowing from malfunctioning leaky taps and tanks of the ground tank project itself. Six percent reported seeing water leaking from underground pipes and 14% noted that people still managed to make illegal connections, significantly lower than reports from other areas (Wilson, Malakoana and Gounden, 2008).

While this project is still in operation, the household interviews determined that there are a number of challenges associated with the tanks. People regarded the tanks as being unsafe, believing that the water in the tanks is contaminated. This belief was the combined product of two main things; cultural beliefs and past experiences. In terms of cultural beliefs, Amaoti is comprised of a wide collection of nationalities and cultures, and with this has been a fair amount of xenophobia. Comment was made that the water tanks had been 'poisoned' or 'cursed' by people from foreign lands, although no specific records were obtained or could be verified. In terms of past experiences, numerous people indicated that they had found dead frogs, cats, dogs and other animals floating in the water and that many of the tanks were vandalised. Tad poles, bugs and snails were a common occurrence. Even though these tanks have been installed, water quantity remains an issue. The household interviews indicated that a majority of respondents felt that the quantity of available water was both inconsistent and decreasing and comment was made that the tanks do not hold enough water to supply the number of people that use them.

Similar accounts of dissatisfaction were found in a study conducted by the University of KwaZulu-Natal, which sought to determine the satisfaction of the community with the new ground tank provision through a survey administered to households who were part of the phase 1 implementation. Out of a total of 240 households, a random sample of 100 households was selected (Wilson, 2008). While 42% of the respondents said they were satisfied with their ground tank service, commensurate with 41% who said that their opinion of eThekwini Water and

Sanitation had improved as a result of the initiative, 45% commented that they were dissatisfied. The three main reasons for this were (Wilson, 2008):

■ Often not enough water (cut-offs without notification and malfunctioning tanks);

■ Water quality issues (responses indicated concern over the tank itself not being clean, water heating up in the tank, and that tanks were ill-designed in term of locking options thus making it easy for enemies to access household water supply with poison); and

■ Leaky taps and tanks/broken valves/ overflow.

While there is no doubt that the ground tanks have been of benefit to a large majority of the community, there have also been a number of issues mentioned, as noted above. Of the people interviewed, 40% commented that their tank ran out of water more than once a week and a significant number commented that there were water cut offs without notification (Wilson, 2008). It was also noted, however, that 84% of people had begun deploying strategies to conserve water for later use, such as storing water in containers and reusing rinsing water. The notion of saving water was confirmed through the focus group discussions with community farming groups who indicated that they have created ponds to collect rainwater during the rainy season for use in their gardens.

The UKZN report further indicates that while the difficulties associated with the ground tanks have been technical in nature, there are also a number of conceptual issues that require attention. There is evidence to suggest that the ground tank service requires a significant mindset shift for the people of Amaoti, and it is not clear that the project has significantly engaged with social implications invoked by the disruption of fundamental patterns of water use (Wilson, 2008).

Furthermore, the same reports comments that there is little evidence that the project fostered a sense of community or community upliftment, but rather, a large percentage of the community felt they were being *forced* through the ground tank service to assume the costs of benefits that would accrue to the Municipality and not to the community itself. There was a suspicion that injustices were embedded in the design of the ground tank project and that the Municipality did not have the best interests of the community at heart (Wilson, 2008).

Issues were also raised regarding water from standpipes. Most of these comments were made during the household interviews conducted with people living in *Sigcau*, and the most recorded comment was that there were not enough standpipes to service all the people in the informal settlement. Through a 'ground-truthing' exercise conducted with representatives from the water sector of the eThekwini Municipality, it was determined that there were a total of 56 standard domestic connections in the entire community (including the other Wards of which this study did

not encompass), and thus the concerns raised in the study can be assumed to be correct (Pfaff, *et al.*, 2009). The lack of standpipes is largely due to the policy of spatial planning with regards to informal settlements. The majority of informal settlements are planned for either greenfields or *in-situ* upgrades, which operate (theoretically) on a five year cycle. As a result, the installation of water connections is not deemed practical, as this infrastructure would be lost once the settlement has been moved. In an attempt to provide people with water access, standpipes are only installed on the outer perimeter of the settlements, thus there are large numbers of people further away than the Government stipulated 200m radius (Pfaff, *et al.*, 2009, DWAF, 2009).

This issue applies not only to water, but to sanitation as well. The survey indicated that only 11% of respondents have flush toilets, with almost 87% indicating use of long drop toilets. 57% indicated that this has not changed in the last 5 years. According to the Municipality (Pfaff, *et al.*, 2009), there are no formal sewage systems in place within the informal settlements. Issues of sanitation are to be addressed through the establishment of communal toilet blocks, of which there is one in *Sigcau.* The communal block has two toilets and showers for both males and females and washing basins, which is supposed to cater for 50 families within a 200m radius (Moodliar, 2009). The issue of sanitation is exacerbated by the lack of policy at a national level that defines access to sanitation, as is the case with water. It was further commented that communal toilets blocks are often built under pressure during election times and are then handed over to the Department of Health (DoH) for maintenance and upkeep. The DoH is supposed to provide toilet paper, cleaning equipment and caretakers to maintain the communal blocks, a service which is supposed to be free to the people (Pfaff, *et al.*, 2009). However, through household interviews and personal observation it was determined that not only are these communal blocks not maintained, they are also not free; there is a fee of 50c per toilet use, 20c for 20l of water, and R2 for the use of sinks to do laundry. There is speculation about who is actually collecting this money – the Municipality specifies that use should be free, but an opportunistic community member has decided otherwise. Comment was made that the system works well in a structured society, but has proved challenging in an unstructured one. Further comment was made that if the settlement is due for an *in-situ* upgrade then they will not receive a communal toilet block.

Interesting observations were also made regarding environmental changes. A majority of 83% of respondents to the survey had noticed weather changes over the last 5 years, e.g. rainfall, temperature, storms, etc. and 76% of those respondents felt that these changes have affected them in some way. Fifty five percent felt that floods had become more common, with 34% indicating they had become more severe as well. The issue of floods was raised repeatedly in household interviews and group discussions. Many of the informal settlements are located within a

floodplain, and thus are subject to floods on an annual basis. It was explained that many of the people living in the informal settlement had intentionally moved there from formal settlements located at the top of the hill. This was mainly done for land ownership – rooms were previously rented at the top of the hill for R300, whereas land in the informal settlements was 'sold' for R500, thus saving them money which is generally in short supply.The informal settlements are located closer to the main road, thus access to services is easier than when living at the top of the hill. This transition is done with full knowledge of the annual floods that occur in the informal settlement (due to its location in a floodplain), but it was commented that when the floods do occur, possessions are simply moved to higher ground and houses are flooded. There seemed to be no real concern expressed at this action and it was treated more as an inconvenience than a severe problem; dealing with the floods have become common and is considered a small price to pay for the opportunity of owning land.

Learning Box 2: The Snake in the Sky

Some people in Amaoti believe that storms and heavy rain are controlled by a giant snake in the sky. This snake is attracted to things that are shiny and look like water, such as the corrugated iron roofs of the informal settlements and some of the houses. When light reflects off the roofs, the snake is drawn to it, bringing with rain and storms. A large number of informal settlements use corrugated iron, thus the snake has been attracted – explaining the heavy rains that have been experienced recently. These rains have damaged a cemetery and a number of houses, so community members are encouraged to cover their roofs with dark material (such as black paint or black plastic bags) to dispel the snake's attraction and send him from the community.

5.2.2   Infrastructure and Services

Almost 85% of the respondents indicated that they have access to electricity and of this, 98% pay their electricity bill through the prepaid system. This figure is considerably higher than the 58% indicated in AER (2005) and was further explained through the household interviews. In the interviews, it was clarified that while a large majority of the community does have access to electricity, there are a considerable amount of illegal connections. This could account for the discrepancy in figures as the survey did not seek to clarify the legality of access due to sensitivity reasons. Generally there is access to a single plug in the household, which is overburdened with connecting plug points and lights. While this is regarded as a common activity, strain is placed on the electricity system and there are often electricity cuts. The only alternative/additional source of energy indicated was firewood (98%) and it was further clarified that this was used predominantly

for cooking purposes. Access to alternative energy sources is difficult depending on where the household is located. If located in the hills, there is access to forests where wood is used as an additional fuel, whereas in the informal settlements, obtaining alternative fuels is limited.

In terms of transport, taxi use was highest at 61% followed by bus use at 34%. The average monthly transport cost was <R100 (43%) followed by R101 – R250 (27%).

Respondents to the survey were asked to rank the development they felt most necessary in the community according to six categories; roads, water services, health and sanitation, communication services, electricity, and education. Housing was not included as it was already considered a needed development, considering the informal nature of the community. The most needed development was ranked as 1, and the least needed as 6, thus it was possible to take the mean scores of each category and determine perceptions of needed development, based on the lowest mean score. The following was recorded.
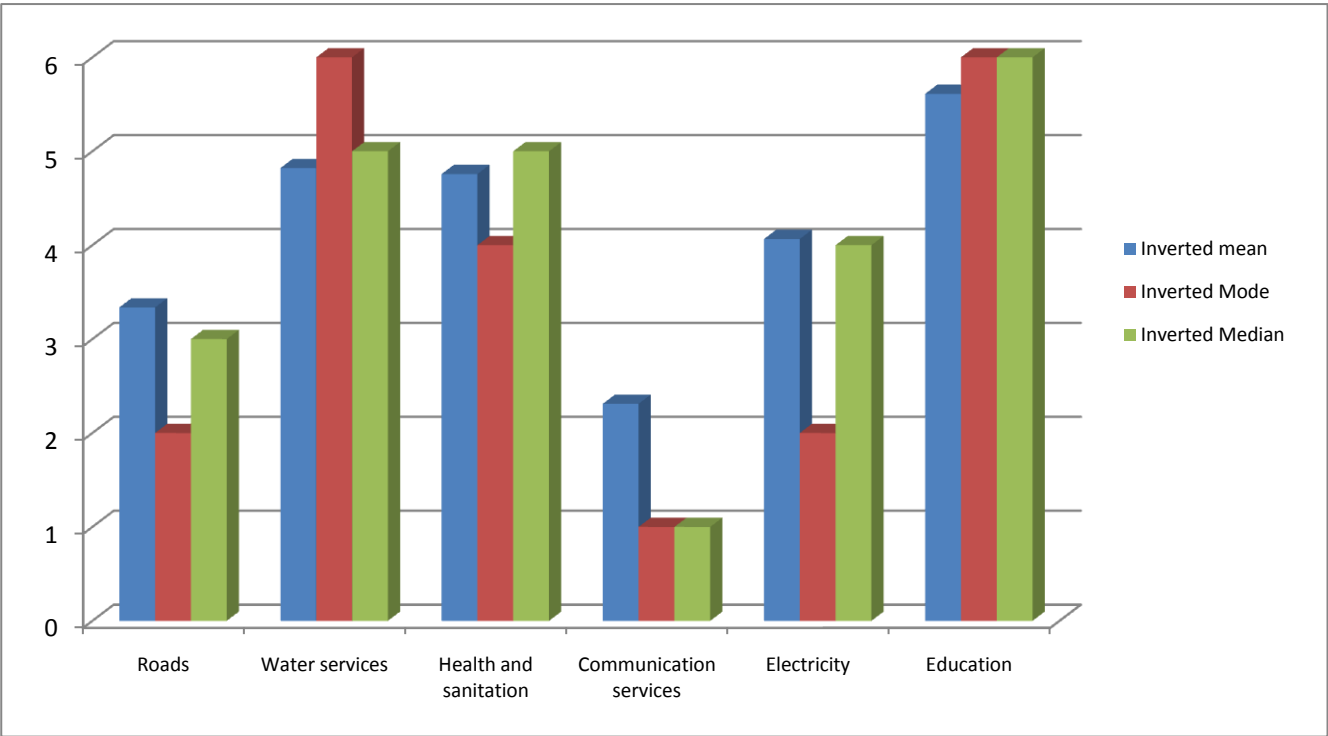
Figure 5.5: Most needed development

As is evident from this, education is considered the most important development. Comment was made that societies cannot function without education, and thus it should supersede any other development activity. This was closely followed by water services and health and sanitation, with comment being made that reliable access to water was necessary and that health facilities needed improvement. This was followed by electricity, roads and communication services respectively.

Only 50% of the respondents felt that there was easy access to clinics/hospitals and only 49% were satisfied with the service provided. Information regarding the general state of health of Amaoti was determined through discussions with the Community Health Workers Group and the Amaoti Clinic (Utmzizi, 2009). The clinic is under capacitated for the amount of people that they care for, ranging from 4200 – 5000 patients per month, according to clinic records. Each nurse sees approximately 30 patients per day and it was commented that with such a high turnover rate, quality of service is jeopardised.

The predominance of cases that they deal with include:

- HIV/AIDS, including treatment for pregnant mothers;

- Tuberculosis;

- Teenage pregnancy;

- Sexually transmitted infections;

- Minor ailments; and

- Chronic ailments, including hypertension, diabetes, epilepsy and asthma.

In terms of water borne diseases, it was noted that there have been instances of cholera outbreaks but that the most predominant water borne disease is bilharzia. This is largely affecting children and it is believed that this is a result of swimming and playing in rivers that are unclean. Water related illness also occur as a result of poor sanitation within the community – during heavy rains the pit toilets flood and contaminate the water, and numerous children get bad diarrhoea, rashes and flesh sores. Diarrhoea contributes approximately 20% of all cases treated at the clinic and it is believed that this is mainly the result of the high prevalence of HIV/AIDS. It is estimated that 50% of all pregnant mothers are infected, most of which are on a dual therapy programme. Since January 2009, a system was implemented whereby seriously ill patients (predominantly HIV/AIDS and TB) would be visited at their homes on a monthly basis with the required medicine, a service offered by the Department of Health. While some people have benefited from this, it has been commented that one of the major challenges in this programme has been the lack of physical addresses in the area and the lack of telephones with which to communicate with people.

It was commented that one reason health conditions within the community are so poor is directly related to the poor living conditions that people are in. Houses, particularly in the Sigcawu area, are extremely close together and there is quick spread of diseases; access to clean water is questionable and there are large numbers of people sharing small rooms. It was further

commented that these conditions have had a significant impact on children – not only has the health of children deteriorated, but there has also been a notable increase in the number of orphans.

5.2.3   Livelihoods and Demographics

The survey determined that the largest age group was 19-35 years (30%) followed by 35-60 years (19%), as presented in Figure 5.6. There were slightly more females than males per household, with 42% males and 58% females.
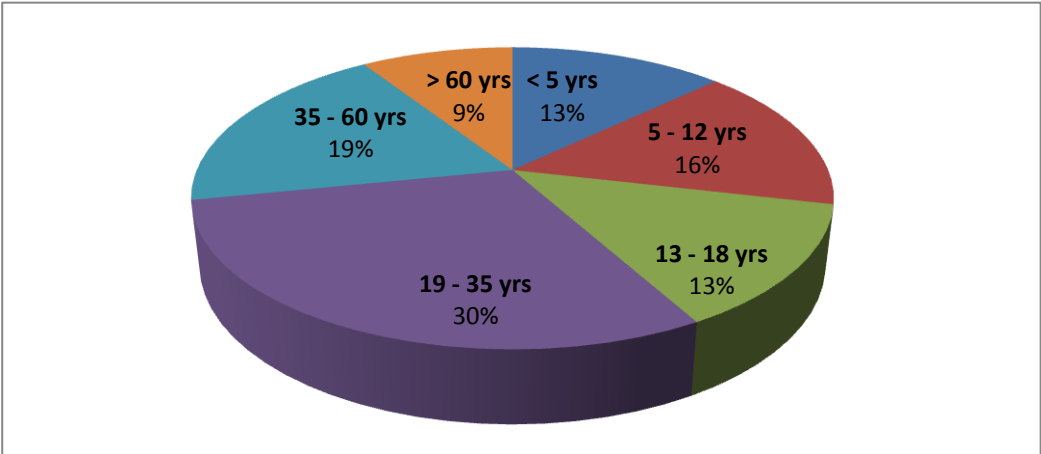
Figure 5.6: Age distribution

The average number of people per household was 3.38, with modal numbers of 2, 3 and 4. In the Amaoti Enumeration Report (AER, 2005), a study conducted in 2005, it was determined that the average number of people per household was 2.4. It is probable that the difference between these numbers can be explained as a result of the population growth, estimated at 1.07% (World Bank, 2009), and the influx of people into the informal settlements as has been expressed (Seedat, 2009).

The sample also indicated that almost 39% of the respondents had primary school education and 39% had a high school education, as seen in Figure 5.7.
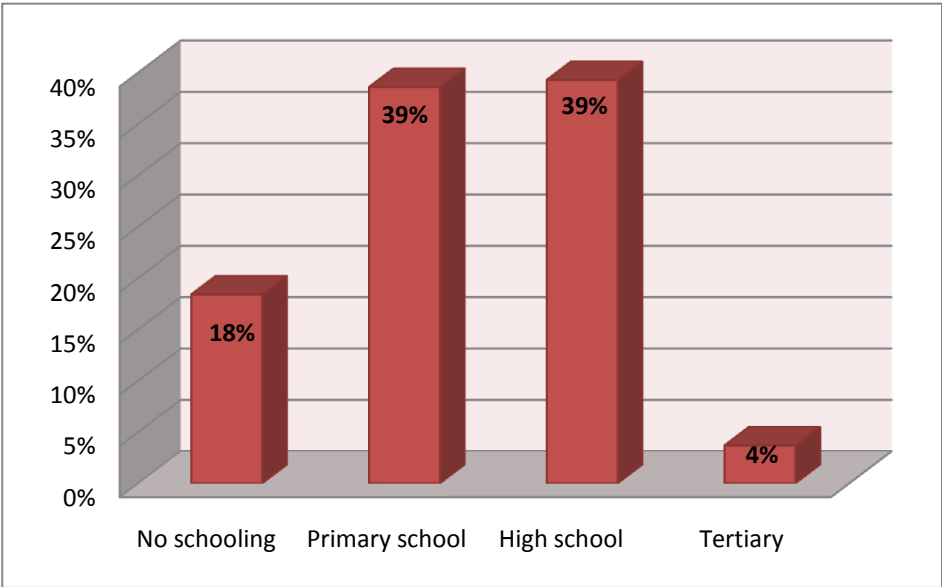
Figure 5.7: Education status

As far as access to educational facilities was concerned, 75% felt that it is easy to attend the closest school (taking on average 56 minutes) and 96% were satisfied with the service provided.

In terms of livelihoods, formal and self employment was found to be at only 49% combined, in comparison with the unemployment status at 51%, as seen in Figure 5.8.
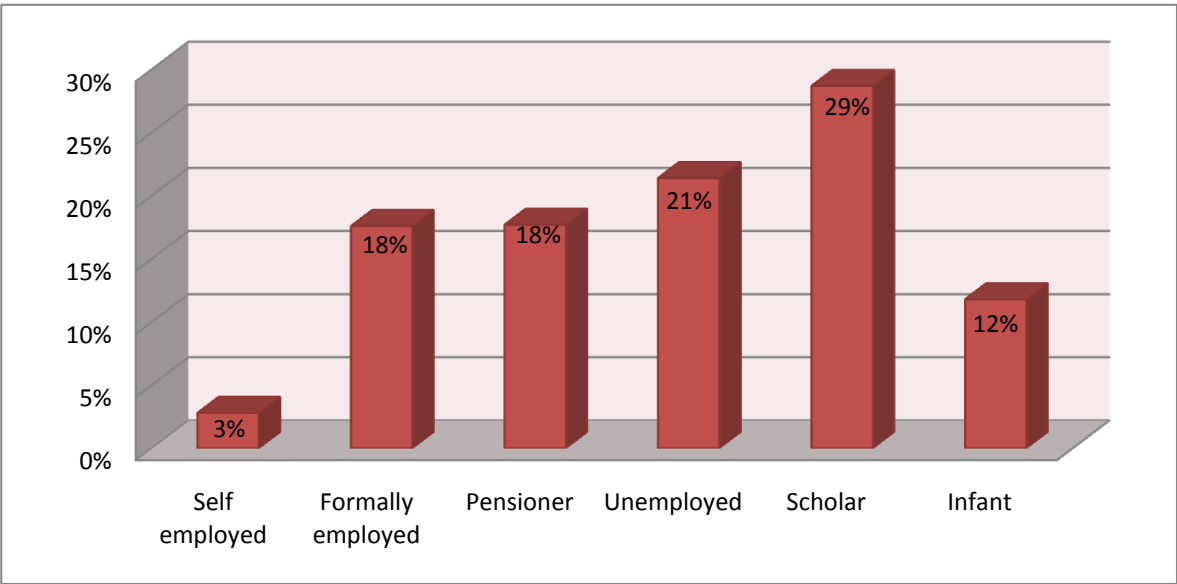
Figure 5.8: Employment status

Of those employed, both self and formally, 27% of the respondents earned less than R800/month, classifying a significant percentage of the population as 'poor' (DWAF, 2009). A further 52% earned R801-R1200/month followed by 27% who earned R1201-R5000/month. A total of 55% relied on a government grant as a main source of income, with 68% of these receiving a social grant and 32% receiving a pension. The social grants comprised disability grants (4%), child grants (89%) and health grants (7%).

This information was confirmed through the household interviews and focus group discussions where it was noted that the majority of people do not have an income, and instead rely on grants. These grants, however, are insufficient to support general household activities, and so people are engaged in other activities to try and create an income. Some people have been able to find what is termed "piece jobs", informal activities that occur irregularly such as vendors, hair salons, clothes sales, etc. Indication was also given that people join community groups to try and increase their income, for example, community farming groups grew crops mainly for sale at the market, rather than to be used as a household commodity. It was also indicated that hard cash was deemed a greater asset than food as this gave people greater purchasing power for commodities that they could not necessarily grow.

5.2.4   Food Security

The survey determined that only 22% of the respondents were involved in household food production. Crop production was indicated as maize (20%) and a variety of vegetables (80%), including cabbages, carrots, tomatoes, spinach, etc. This low rate was explained through the household interviews where comment was made that there is inadequate land space for farming practices to occur, largely due to the nature of peri-urban settlements. While eight of the 25 households interviewed stated that they were involved in farming practices, the majority commented that this was not on their own land. Rather, land was designated for such activities, often facilitated through community farming groups. Lack of space for farming activities is a direct consequence of the nature of peri-urban communities.

The focus group discussions with farming groups indicated that older women are the main participants of such activities, while men and youth remain largely uninvolved. As indicated previously, the majority of produce grown was also sold at local markets and food for households was bought at stores. This reliance on food purchasing represents a vulnerability as the price of food continues to rise in an unstable market recession. According to the National Agricultural Marketing Council (2009) the cost of a basic food basket rose by 14% from July 2008 to July 2009,

indicating an expenditure of a 33% share of the average monthly income of the poorest 30% of the population. It was further indicated that some community groups, such as home-based care groups, have subsistence gardens for their patients; food is grown and put into food parcels for those that are sick, and any extra produce is sold at the market to earn money with which to buy medicines, etc.

5.2.5 Social Networks

The social networks within Amaoti were largely understood through a stakeholder analysis that was conducted in a community meeting. The stakeholder analysis was conducted to determine who important role players in the community were and the degree of influence that they have over activities that occur. This was done through exploring two central questions through the use of a Venn diagram:

■   What role do different organizations/groups play?

■   Who has power within the community to make decisions?

The Venn diagram as drawn by the participants in this meeting is shown in Figure 5.9.

Figure 5.9: Venn diagram of stakeholders in Amaoti

It was stated that the most powerful and influential stakeholder in the community is the ANC and that all other groups and stakeholders fit within it. While these other stakeholders operate under the banner of the ANC, it is important to acknowledge that they also have their own degree of influence in the community, described as follows:

- **Councillors:** Councillors were considered to be the group with the greatest degree of influence in the community as they are generally the coordinators of all events and are able to make changes in the community;

- **Ward Committees:** The Ward Committees were ranked as the second most influential group in the community. Working directly under the Councillors they are seen as the body that can implement action;

- **Community Groups:** The community groups were ranked third as a collective group. It was expressed that although they do not always have the power to implement change in the community, they are representative of a wide variety of people and play an important role in bringing people together. It was further mentioned that the stronger the group is, the greater the ability to take action;

- **Taxi Association and Local Business:** The taxi association was ranked fourth most important and was described as a 'powerful group', controlling movement in and out of the community. The taxi association has a direct connection with local business, which is also an influential group due to their connection to income generating activities;

- **Churches:** Churches were considered to have a fairly strong influence in the community due to the variety of initiatives that they are engaged in. Many churches in the area are directly involved with different sectors of society and have large numbers in their congregations;

- **School Governing Body and Teachers:** School governing bodies were explained to have some control over the education system; an influential position considering the large number of school children in the community. There is a connection between them and teachers, who have direct and consistent influence on the children and youth;

- **Branch Executive Committee (BEC):** This group was rated as having the same degree of influence in the community as the school governing bodies and the teachers. The basic function of this group is to oversee the activities of all other groups, thus they have the ability to act as a communicator between them. This allows them to influence decision and they are closely associated with the Ward Committees;

■ **Scholars:** Scholars were regarded as the final group with influence in the community. While they do not necessarily have the power to immediately change social circumstances, they are representative of a large group.

This information, particularly regarding political leadership, was confirmed through the survey where almost 99% of the respondents agreed that there were community leaders (identified as the Councillor), 95% of which thought they were effective. A majority of 99% of the respondents knew the Councillor in the area whilst 93% thought that she was accessible. A further 85% agreed that the Municipality was actively involved in addressing the needs of the community.

> **Learning Box 3: Active Political Society**
>
> Amaoti is a highly politicized community and the 2009 presidential elections had a major influence on community activities. With a large number of community members sporting ANC President Jacob Zuma t-shirts, it was indicated that priority activities in the community - up until the elections - would involve ANC rallies and door to door campaigning. Any activities that were not directly related to politics subsequently took a back seat. During this time it was advised to delay further community interactions due to the automatic, and undesired, association of the project to partisan politics. It was stated that the ANC is the most influential group in the community and any initiatives or activities must be done with their consent. It was commented, "The ANC is the most important group here. We love the ANC, we are all ANC. Even you, because you are in this community, you are now ANC as well".
>
>

While leadership is one component of social networks, the predominance of community groups is also an important factor to take into account. The survey indicated that 49% belonged to a social group and 84% were members of a religious group. The survey indicated that 95% felt that community members co-operate and work well together on community activities and 98% of respondents felt that the community was united. This statistic, however, was contradicted by the high prevalence of crime in the community. Crime is a serious issue in Amaoti, and the area is under tight police surveillance from both the Amaoti and KwaMashu Police Stations. Although no verifiable statistics were collected, the household interviews indicated theft, rape and physical violence within the community. In response to this, there have been a number of programmes initiated to inspire policemen within the area and to strengthen their unity and capacity. One such programme is currently being run by British Airways in collaboration with the Department of Sports

and Recreation where football is used as a means of uniting policeman and developing their responsive skills. In this case, policeman from England have come out to Amaoti to work with them in sharing experiences and developing skills.

5.2.6   Summary

Through the focus group discussions, the interviews, the survey and overall community interaction that took place through this vulnerability assessment, it was identified that the key issues faced by the community pertained to water and sanitation, and infrastructure and services. While this was critical to recognise in the development of adaptation strategies, a number of other key factors emerged as needing recognition. While these do not define the adaptation strategies, they do indicate what needs to be considered when implementing such strategies. These can be defined as follows:

■ **Risk vs personal aspiration:** It is generally assumed that the predominance of informal settlements in an area is an indication of poverty, as is the case with Amaoti. However, the household interviews revealed people had moved from their more formal settlements to informal settlements due to the issue of land ownership. In the informal settlements people have "bought" land, something which is held in high regard and is an indication of status. The 'purchasing' of this land is done with full awareness of the floods that occur annually, but the ownership of the land is more important than this risk. As such, floods are not seen as a real concern, but rather as an inconvenience, and there appears to be little desire to change living arrangements. This was flagged as a theme to be taken into consideration in the development of the adaptation strategy of the research. Adaptation strategies will need to look at issues of land ownership and further investigations should be made into planned development for the areas, particularly with regards to housing and water drainage.

Leadership and development: There was indication of high confidence in the political leadership of Amaoti, yet an indication of low development. This was also factored into the adaptation strategies developed in Section 5.3.

■ **Issues of distrust:** There are serious issues of distrust within the community which have manifested themselves most predominantly in the resistance to the water tank projects implemented by the Municipality. The distrust has been based largely on two things; experience and belief systems. There have been reported cases of vandalism, dead dogs being thrown into the tanks, and contamination with mud and sand. Belief systems have also exacerbated this situation; Amaoti is made up of a wide collection of customs and nationalities

and these have not been without prejudice. There are beliefs that witch doctors and foreign nationals have poisoned the water, and in general, people are wary of each other. One contributing factor to this has been the high level of migration that has occurred – many people have left their homelands and come to Amaoti in the hope of better employment and other opportunities. There have been reported issues of xenophobia, and this inherent distrust is also observed by the high crime rate, exacerbated by the low economic status of most people in the community. Adaptation strategies will need to take this issue into serious account and ensure that actions are taken to build trust within the community.

- **Health, water and sanitation:** Through the focus group discussions, the most reported cases included bilharzia, with a predominance of treatment for diarrhoea. There is a direct connection between these illnesses and water and sanitation, both regarding water interaction (bilharzia) and water consumption (diarrhoea). Poor water and sanitation services amplify these problems which stand to be severely affected by climate change. This problem is also affected by the reported over capacitated health services and the inability of these services to deal with the volume of cases. Further investigations should be made with health entities to confirm this and to assess the status of service provision in order to determine how this can be improved on. It should also be noted that there are a variety of home-based health care community groups, and consideration should also be given to how these groups could support the health care system while building capacity within the community.

- **Income diversification and government grants:** The survey determined that despite the relatively high unemployment rate, there was only participation in community activities of approximately 50%. It would be assumed that if employment was largely unavailable, people would be engaged in community activities, such as communal gardens, to generate some form of income. However, this is not the case. Instead, the majority of unemployed people rely on government grants as their main source of income and feel no desire to engage in other activities that might increase their livelihood opportunities. This denotes a dangerous level of apathy within the community which is further indicated by the high crime rate. Any interventions within the community will need to address issues of apathy and will need to provide a potential form of income that will alleviate the heavy reliance on government grants.

These implications were taken into account in the development of the adaptation strategies, and in the development of the play.

5.3   Development of adaptation strategies

The central element of community-based adaptation is learning about current strategies and assessing current vulnerabilities. Adaptation largely involves the management of the risks identified through the vulnerability assessment, and the manner in which natural and human systems are sensitive to these vulnerabilities is pivotal in identifying, formulating and evaluating adaptation policies (Downing and Patwardhan, 2005). The adaptive capacity of a system or community determines its potential to respond to, and reduce, the adverse effects of climate change, both within social and natural systems. It is clear that non-climatic factors affect the adaptive capacity of a system (Fussel and Klein, 2002), thus particular attention has been paid to the social dynamics of Amaoti that would be able to increase capacity within the community and sustain interventions potentially implemented. Using Fussel and Klein (2002) as a frame of reference, the responses to vulnerability can be grouped into three main categories and the development of adaptation strategies in response to the vulnerability of Amaoti was based largely on three main components:

■ Exposure;

■ Sensitivity; and

■ Adaptive capacity.

While exposure and sensitivity are common components taken into account in the development of adaptation strategies, adaptive capacity in particular encourages a more forward-thinking vulnerability assessment (Fussel and Klein, 2002). As such, the adaptation strategies were developed with two main objectives; to redress identified vulnerabilities and to increase existing capacity. Several factors have been identified as having significant influence over the advancement of adaptation capacity and include:

■ Strength of social networks;

■ Improvement of enabling infrastructure;

■ Diversification of income generating activities; and

■ Information dissemination.

Taking these factors into account, as well as the current vulnerabilities of Amaoti as gathered through the research, a host of adaptation strategies were identified. This was done through extensive consultative sessions between the researcher, key stakeholders, and representatives of

the eThekwini Municipality, where the information was deliberated on. A series of meetings were held with these stakeholders and a list of adaptation strategies were developed, including:

- Water conservation;

- Greater water access;

- Rainwater harvesting;

- Improvement of sanitation systems;

- Increased storm water drainage;

- Improved health facilities;

- Improved home-based health care services;

- Increased health awareness;

- Land reallocation;

- Climate proof housing; and

- Disaster management planning.

A creative process was followed in the development of these adaptation strategies, linking each strategy to exposure, sensitivity and adaptive capacity. The sum of these discussions is captured in Table 5.4. The identification of these strategies was a key component in the development of the play.

Table 5.4: Identified Adaptation Strategies

Adaptation Strategies	Means of Implementation	Exposure	Sensitivity	Adaptive Capacity
Water and Sanitation				
Water conservation initiatives	Education and awareness campaigns detailing the need for water conservation and identifying simple steps that can be implemented at a household level		With increased awareness, sensitivity to water issues will be reduced	Greater information systems will enhance adaptive capacity
Improvement of interim water provision associated with housing development	Current interim plans associated with housing development need to be revised to include more comprehensive water access plans. This should include increasing the number of standpipes within informal settlements due for up-grade and/or a revised system of water delivery through the use of trucks.	Comprehensive water access systems will reduce negative exposure to decreasing water access	Strategic water access systems will reduce sensitivity of vulnerable groups to decreasing water supply	
Rainwater harvesting technology suited to informal structures	Rainwater harvesting technologies need to be suitably designed for implementation on informal structures. Designs should focus on water harvesting that does not rely on a gutter system. This can serve as a water access interim plan for informal settlements due for housing upgrades.	New technologies will reduce exposure to decreasing water access	Access to additional water sources will reduce sensitivity for household purposes and increase potential for food security plots	New technology will improve local innovations and increase capacity
Rainwater harvesting purification for potable water	Purification systems need to be developed so as to use harvested rainwater for potable use. This should potentially include filtering systems to be developed with rainwater technology and/or basic household strategies that can be employed for purification.	Systems will reduce exposure to lack of water access	Access to additional potable water sources will reduce sensitivity	
Improvement of interim sanitation provision associated with housing development	Current interim plans associated with housing development need to be revised to include more accessible sanitation systems plans. This should include increasing the number of urine diversion toilets allocated within informal settlements due for up-grade and/or a revised system of communal toilets with detailed accountability procedures to ensure their effective functioning.	Comprehensive sanitation systems will reduce exposure to diseases and associated health problems		

Adaptation Strategies	Means of Implementation	Exposure	Sensitivity	Adaptive Capacity
Infrastructure and Services				
Increased storm water drainage	Storm water drainage in Amaoti needs to be increased with the development of roads within the community. Investigations should be made into how this run-off water can be collected and used, for example, developing a system that serves as an irrigation scheme for food security projects.	Increased drainage systems will reduce exposure to floods	Increased drainage systems will reduce sensitivity of structures and vulnerable people to floods	Integrated systems will allow for increased capacity in terms of improvement of food security systems
Improved health facilities	Current health facilities need to be improved including an expansion of the existing clinic with both equipment and staff.		Improved health facilities will reduce sensitivity of health systems and increase access to health services	
Improved home-based health care services	Community groups need to be further capacitated to deliver basic health services to community members. This should take the form of home-based health care groups and selected community members should be trained as care-givers by the Department of Health and provided with necessary facilities to provide localized health services.		Improved health services will reduce sensitivity of vulnerable groups	Community groups will be strengthened through increased capacity and awareness. Potential for income generation and improved livelihood diversification
Increased health awareness	Education and awareness campaigns need to be developed and implemented to promote preventative health measures and home-based health care responses. This should be done through collaborative effort with the Department of Education and the Department of Health.		With increased awareness, sensitivity to health issues will be reduced	Greater information systems will enhance adaptive capacity

Adaptation Strategies	Means of Implementation	Exposure	Sensitivity	Adaptive Capacity
Reallocation of land use - conversion of flood plain land from housing developments to food security plots	Further investigations need to be made regarding the revision of land use classification. Land located in fertile floodplains should be used for communal food security plots, facilitated through functioning community groups. In areas where in-situ developments are planned, investigations should be made into potential greenfield development.	Relocating groups within flood plains will reduce exposure to floods		Conversion of land use will increase adaptive capacity, particularly with regards to increased food security. Potential for income generation and improved livelihood diversification.
Climate-proof housing for future housing developments	Planned housing developments should be revised to create 'climate-proof' houses. This can include houses with built-in rainwater harvesters, household scale food security plots, urine diversion toilets, and even stilted houses for those located in high-flooding zones.	Climate-proof houses will reduce exposure to extreme weather events		Improved housing facilities will increase capacity at a household level
Disaster Management Plan	A disaster management plan needs to be developed with local community structures to identify actions that can be taken during times of extreme weather events that would provide community members with asylum during this time.		Disaster management plans reduce sensitivity of vulnerable groups, providing an emergency response strategy in times of need	

Identification was made of a number of key points, which also emanated from the discussions held with the different stakeholders and based on the findings of the research presented. These included:

- Issues of land ownership and informal housing need to be addressed;

- Concepts such as unity need to be established and attention paid to ensuring strategies are viewed as acceptable;

- Leadership structures need to support the processes being implemented;

- Water collection and storage needs to be implemented to increase water availability. Issues of water safety and cleanliness need to be addressed within this process;

- Functioning community groups should be integrally involved in the implementation of different strategies and efforts should be made to increase capacity within them so as increase human development and reduce reliance on governmental structures;

- Efforts need to be made to either increase income generation or reduce reliance on income availability, including government grants;

- Access to formal credit needs to be enhanced (currently credit systems exist predominantly through informal systems); and

- All processes and procedures need to be understood within the existing framework of the South Spatial Development Plan, and identified strategies need to further inform this development plan.

Subsequent to the development of these adaptation strategies, this information was used to inform the development of the play. Once this had been achieved, the play was performed by a local drama group and a questionnaire was used to determine responses to the play. The play communicated the basic essentials of climate change, while simultaneously highlighting a number of the 'soft' social issues (such as the need for increased unity) as well as promoted the identified adaptation strategies.

5.4   Theatre as a communication tool

To communicate the issues of climate change and the identified adaptation strategies, a 30 minute play entitled *Fish Out of Water* was developed, which can be found in Appendix E.

5.4.1　Development of the play *Fish Out of Water*

The play emerged from a series of workshops held with the Sakhisizwe Performing Arts Group – a community youth group of approximately 25 members, established with assistance from the Department of Arts and Culture. The group, with ages ranging from 14 to 32 years specialised in music and dance, was recommended by the Councillor in an effort to build on existing capacity. The workshops are described in greater detail below. The characters identified would be the protagonists of the play, which would introduce the concept of climate change and discuss potential adaptation strategies. For the purposes of this research, it was determined that the implementation of rainwater harvesters and a disaster management plan would be the focus of the play, as these were two strategies that would be implementable by the community (with relatively low Municipal input) and that could help to alleviate the negative impacts of climate change within the community. To ensure that the play was relevant to the community and representative of the current situation, a series of workshops were held to explore characters and develop a story line for the play. This process is discussed in further detail.

5.4.1.1　*Identification of characters: image theatre*

Characters for the play were identified using image theatre. In this exercise, the group was asked to identify different kinds of people found in the community and to represent these in the form of a tableau. All participants for the exercise had to work together and plan the image that they would create, so as to ensure that this was a representation of the community as a whole. Once different characters had been identified, these were placed within the 'community scene' and each participant had to describe who their character was, providing greater insight into the types of people found within the community. The images created depicted different classes in societies, different activities and different relationships between people. The following characters were identified:

- A Reverend (an old man who tried to keep people together and teach them good ways of life);
- A married couple (husband and wife who were in deeply in love);
- A scholar (who wanted to leave the community to further their education);
- Two thieves (armed with guns they were the 'gangsters' of the community);
- Policemen (who tried to keep the thieves under control);
- The Councillor (an elected representative of the community);
- Three sisters (poor children who lived in the informal settlement, without any parents);
- A single mother who was unemployed and looked after her child and her sister's child;

- A teacher who taught at the local school;

- A young woman who wanted to become a model; and

- An elderly woman who was part of a community farming group.

The group felt that characters were representative of the community in general, demonstrating different people and relationships, and so formed the characters in the play. Once these characters had been established, the participants were asked to depict a scene of a typical day in Amaoti. The setting was mainly at the taxi rank and market, although various places were identified, including individual houses, the school, etc. What emerged from these workshops was the value of family relations – many siblings had a special bond of camaraderie, directly related to the frequent loss of parents within the community. Issues of crime emerged, predominantly related to activities such as drinking alcohol which in turn was related to dissatisfaction with living situations – lack of job opportunities, lack of education, lack of prospect for life improving. What also emerged were points of positive change – religious organisations offered outlets for frustration and offered them an opportunity to work in unison with activities such as the choir.

Figure 5.10: Tableaus created during image theatre workshop

5.4.1.2   Identification of storyline: roleplay

Part of the storyline was developed through a workshop that focused on roleplay. Once the main vulnerability had been identified (through the social vulnerability analysis), participants were asked to explore this topic through role playing, using the key characters they had identified in the previous workshop. The actions that these characters took within the roleplay would provide insight into how people would generally act and thus aspects of the storyline, and the responses of identified key characters, was developed.

Each participant was designated a character and they had to develop a story about themselves – where they lived, what they did, what they thought, what they enjoyed. Once each person had established their character, they were then asked to position themselves around the room and to do an action using water in the evening (in a previous workshop, different water related activities had been explored). This marked the beginning of a role play where the different characters acted out various scenarios and held conversations.

At this point, participants were asked to imagine that the water was suddenly cut off – how would they react? The response was interesting; most people got a bit dramatically frustrated and then immediately settled down, carrying on with their previous discussions and starting new conversations. The newly-wed couple, however, had a different response. When the water was cut off, the husband reacted negatively and the wife went to hug him, and proceeded to act as if would slap her across the face. The participants were then asked to imagine that it was a week later and the water had still not come on. What would they do? Who would they go to? Initially there was a delay in response until a suggestion was made to speak to the councillor. Suddenly, the room erupted and everyone marched to the councillors' house to demand water. The councillor, clearly overwhelmed by the masses of people upon her, promptly retreated into the safe confines of her home announcing that she did not know why the water was off. Everyone then went home.

The participants were then informed that there was one working standpipe in the community, guarded by a municipal worker (acted by the facilitator). Immediately the community rushed to the standpipe and began fighting with the municipal worker, begging for water. The municipal worker responded that she would not help the community until they came to some sort of order. Order, however, did not ensue. Instead, a fight broke out, where the thieves tried to shoot the municipal worker, but the police arrived so they shot him instead; the old church elder was knocked down by a stampede of people fleeing from the scene of the crime; the homeless children went home; the married couple got into a fight; the farmer continued to plea for water; and the councillor remained asleep in her bed.

When the drama was finally stopped, a brief reflection took place to consider the actions that had occurred. It was evident that at no time did the participants in the drama seek to question why the water was off – no inquiries were made to each other, the councillor, or even the municipal worker. Instead, there was a complete reaction of anger and violence. Demands were made, tears were shed, and violence broke out – all over an issue that no-one actually knew anything about. When the participants reflected on this and were asked why this was the case, the only response given was that they were angry.

A number of insights can be gathered from this process. There is a general lack of questioning in the community; it was evident that people were not interested in the root of the problem, or even what could be done about it. Instead, they just expected the problem to be sorted out by someone else. When this failed to occur, violence broke out, indicating that this is probably a common occurrence within the community. The total acceptance of this reaction supports this idea further and the fights were met with complacency rather than shock. This reaction is made worse by the fact that there is limited knowledge of the problem and more people got involved in the fight for the sake of fighting, rather than for the sake of what they are fighting for. While this idea should be explored further, it is likely that is representative of a general attitude within the community and responses of a similar nature can be expected in reality.

The drama group was also extremely interested in 'township dancing' and in a later workshop, a task was set for them to develop a dance about water. No further instructions were given, apart from being told that they could use the previous workshops to guide their dance if they desired. A week later, a dance had been put together titled 'The Tap Dance', involving four people, and a metal tap.

Three of the dancers were dressed in red pants, while the fourth was wearing blue. The one with blue pants stood in the centre of the room and placed a tap in his mouth – he was a standpipe. Township music then started playing and one of the boys in red pants danced his way over to the standpipe, opened the tap, had a drink of water, and died. The water appeared to be poisoned; he clutched his neck after the first sip, shaking profusely and landed spread eagle on the floor. A few seconds later, another boy in red pants danced his way to the tap, ignored the dead person, had a drink of water and suffered the same fate. Finally, the third boy in red danced his way over to the tap, noticed his two dead friends and tried to revive then. Failing to do so, he too drank the water and collapsed onto the floor. At this point 'water' came out of the tap (from questionable sources indeed) and the 'standpipe' did a short dance. He was soon joined by all the other performers, including the boys in red, who broke out into an exuberant group dance, completely unrelated to the tap.

The most interesting aspect of this dance was the water topic they had chosen. At no point had the issue of poisoned water been discussed, and when asked why they had chosen this for their theme, they simply replied 'it is something we have to think about'.

5.4.1.3   *Development of script*

Once these workshops had been conducted, the information was then put alongside the vulnerability information and the identified adaptation strategies to develop a script. A number of key factors that emerged from these workshops included:

- Lack of potable water availability;

- Propensity to floods, particularly within the Sigcawu area;

- Increased storms;

- High levels of poverty;

- Issues of crime and trust;

- Possibility of using rainwater harvesters to collect water;

- Relatively strong leadership;

- The importance of the church in people's lives;

- Importance of family relationships, particularly between siblings;

- Desire to improve life;

- Desire to further education; and

- Enormous performance talent found within the youth, particularly with regards to singing.

This information was then woven into a storyline using the characters and themes that had been identified, with the assistance of local playwright and performer Louise Buchler. The script thus included aspects of the vulnerability analysis, including areas of greatest vulnerability and selected adaptation strategies. The characters were then used to convey this information, using aspects of the storyline that had been developed by the drama group.

Essentially, *Fish Out of Water* is the story of a young man named Cedric Fish who has recently returned to his home town of Amaoti after studying at university for several years. He is back in the community to work on an environmental research project that is investigating the use of rainwater harvesters. Water has become an issue in Amaoti; either there is no water to be found at the standpipes – as the Madondo sisters will testify – or the area is ravaged by fierce storms and floods – like the one that blew the roof off of Sipho's neighbour's house. At the time of Cedric's arrival home, there is a song writing competition, the prize of which is a performance at the FIFA World Cup. While the community is excitedly preparing, Cedric is building a rainwater harvester; drawing the scorn of a past enemy Sbu and the intrigue of his long lost love, Miriam. When the competition begins, there is a terrible flood and Cedric must find a way to get the community to

work together, developing an emergency escape plan that will save them from the storm. When the rains clear and there is no water to drink, Cedric helps the community with his rainwater harvester, winning the hearts of all that participate, and that of his love. Through this process, the community learns that by working together they can better protect themselves against the challenges they face and so they pave the way for a new life in Amaoti.

5.4.2   Rehearsal process

The play was rehearsed over a period of six weeks within the Amaoti community, where nightly workshops were held in the local community centre. The objective of this rehearsal process was not only to develop a play for the community, but also to develop the skills and capacities of the performers themselves. As such, the rehearsal process included a series of games and activities aimed at teaching the performers 'tricks of the trade' and developing their own confidence as performers.

Each rehearsal opened with a warm-up session where focus was placed on three main components:

■   Physical warm-up;

■   Vocal warm-up; and

■   Concentration.

The physical warm-up included understanding the body as a tool for communication, exploring different walks, statures, aspects of body language and physicality. This was a relatively simple process to engage the participants in as most of them were dancers and were familiar with using their bodies to communicate.

The vocal warm-up was more challenging. While the group was comprised of excellent singers, there is a vast difference from singing and enunciating words. Particular attention was placed on improving the articulation of words and projecting voices so as to ensure that the story of the play would be heard. This warm-up involved a series of tongue twisters, accompanied with physical games, projection exercises, testing the range of voices and vocal expressions.

The concentration exercises were extremely important for the rehearsal process; not only did they promote focus and concentration for the participants individually, but also for working together as a group. Often the rehearsal periods were long and difficult to endure and the concentration exercises helped participants to refocus, adding energy and vigour to the process.

Each session also began and ended with a "rolling-in" exercise and a "de-rolling" exercise. Essentially, each participant had to follow a series of steps at the beginning of each rehearsal to 'become' their character, including visualisation and character interrogation. This process was important for two reasons: firstly, it is crucial for actors to separate themselves from their characters so that they remain objective and do not become their characters, secondly, taking the time to process who their characters are, what they do, what they think and how they feel, will allow them to represent certain qualities more truthfully and to represent their character more accurately. This process was then important to reverse at the end of each rehearsal – participants needed to 'de-roll', reminding themselves that they were playing just a character and that this character was not a reflection of themselves. This was particularly important for more controversial characters, such as the gangsters and the local drunk. If there is no separation from the person to the character, then it could potentially be a dangerous situation where the lines of reality are often blurred, and people behave differently from what they normally would. Activities included 'wiping the character away' and discussing how people were feeling during and after the rehearsal process.

Throughout the rehearsal process, participants were also encouraged to take greater ownership of the script by changing the words into something that they would say. While the script was written based on the stories shared by the group and through the vulnerability analysis, language and cultural differences make it difficult to write text that reflect subtle cultural characteristics. Participants were encouraged to change wording without changing meaning, and this was done successfully throughout the play. During the rehearsal process the text was broken down so that each participant understood what information was being conveyed. Once this understanding had occurred, they were then able to say this is a way that had meaning to them. For example, a large section of the Reverend's speech was adlibbed and changed because the actor felt that comfortable with assuming the role of a preacher, and used many of the phrases and mannerisms that are actually used by preachers within the community. Greetings, terms of endearments, and colloquial jargon were changed from English to Zulu by the participants, allowing them to have greater ownership of the script, and thus, of the play as a whole.

5.4.3   Performances

There were two anticipated performances of *Fish Out of Water*, the first at an event organised for International Climate Action Day and a second performance in Amaoti.

International Climate Action Day (ICAD) was held on 24 October 2009, calling for international action in response to climate change, in light of the upcoming UN climate change talks in Copenhagen, December 2009. While events occurred the world over, the eThekwini Municipality, Golder Associates, WESSA, Wildlands Conservation Trust, Eco-Schools, the Climate Action Partnership and On the Edge Enviro-Theatre Co. joined forces to bring a day of theatre and entertainment to the people of Durban. The day, hosted by Trevor Williams from East Coast Radio, included six theatrical performances, each discussing climate change and other environmental issues (a copy of the programme for the event can be found in Appendix H). There were two main reasons for *Fish Out of Water* performing at this event. Firstly, it was an excellent opportunity for the performers to understand the much larger context of climate change and to give them a chance to see other performances of a similar nature. Secondly, it was also an effective way to rehearse for the community performance and determine the responses of the audience to the play. In a sense, this performance was viewed as a 'pilot performance' and would be useful in highlighting points that needed to be worked on for the community performance. The event was well attended with approximately 250-300 people present. For a first performance, the play went very well and the actors managed to carry the story along, despite a few forgotten lines and missed cues. The space was also extremely difficult to work in – located in an open air amphitheatre in the Durban Botanic Gardens (which unfortunately sits directly below a noisy, busy road), sound did not carry well for any of the performances and it was often difficult to hear the dialogue. Despite this, the play and the actors were well received and there was some very positive feedback, including two newspaper articles that commented on the event, as found in Appendix I.

Figure 5.11: Images from *Fish Out of Water*, International Climate Action Day 2009

The second performance was supposed to be in Amaoti, but due to a series of interesting events, it did not happen. After the ICA performance, a performance was arranged in Amaoti for the following week, hoping to keep the momentum of the play going. Without warning, the booking was cancelled and replaced by a governmental event which, it was explained, took preference over a community play. The play was rescheduled for the following week. During this next week, it was learned that six people had been "fired" from the group for 'not arriving on time' and being 'disrespectful'. After much consultation, it was decided that the group would need to establish a set of agreed upon rules, put their differences aside, and work together for the sake of the performance to be held in several days time, after which a new framework of interaction could be created. A rehearsal was held the following day and all except one performer attended (due to unrelated, personal circumstances); that character was replaced and the show went on. On the day of the performance, no-one arrived at the agreed upon time. Within the first hour, a third of the cast arrived. Within the second hour, another third. The others strolled in nonchalantly some time later, and three never arrived at all. This was exacerbated by a total lack of audience, despite the announcements made and messages sent. After much deliberation, the play was cancelled and not rescheduled. While the opportunity to explore people's responses to theatre as a communication tool was lost, a number of vitally important lessons were learned through this process, conclusions that impact the entire premise of the study and not only several of its parts.

A reflection/close-out workshop was held with the performers to understand why the event turned out as it had. The group commented that they felt 'embarrassed' and 'disappointed' about the poor attendance, both from the performers and the community. They also said they felt 'let down' by the performers who never arrived – they had worked hard to put the play together and were sad that they could not perform without them. When asked why they had not arrived, and why everyone had arrived late, an interesting comment made was "we knew the community wouldn't attend, so why should we go? The community is not interested in seeing a play, unless there is something in it for them, like lunch or money". Through discussion, this indicated a problem of a much larger nature – the community was not interested in engaging in anything that did not offer then material or financial gain. In addition to this, it was commented that performing in front of people you know is difficult – people would be jealous, they would think the performers 'were all that' and look at them negatively. This problem was then exacerbated by a series of other events, such as 'my parents made me do work at home', 'my father made me go to church' and 'it was raining'. These results, and the conclusions drawn from them, are further discussed in Section 5.4.5 and Section 6.3.

5.4.4   Audience responses to the play

To determine whether theatre was an effective means of communicating the issues of climate change, a survey was conducted with the audience members at the International Climate Action Day event. The survey sought to determine several things, namely:

- Was the main message of climate change (its general cause and effect) communicated effectively?
- Was the concept of the adaptation strategies understood?
- What did people feel they learned from this experience?
- Was theatre considered an effective means of communication?

Twenty surveys were conducted at ICAD, the responses of which are analysed according to the aforementioned themes.

5.4.4.1   *Was the main message of climate change communicated effectively?*

To determine if the main message of climate change was communicated effectively, the survey asked two key questions: how would you explain climate change based on the information in the play, and what are some of the impacts of climate change that the play mentions? Of the 20 people

surveyed – all of whom had heard of climate change previously - the majority responded that climate change meant changes in the weather and more extreme weather events in the future. From this, impacts would include floods and less drinking water. Interestingly, one respondent commented that climate change meant changing our lifestyles to be in balance with the environment. A number of respondents commented that they could not hear well enough to adequately respond to the first question, but that they were able to denote the imagery of a flood from the physicality of the performance itself. The message of climate change was communicated effectively for this audience. This feedback further supported theatre as an effective means of communication.

5.4.4.2   Was the concept of adaptation strategies understood?

To determine if the adaptation strategies were understood, two questions were asked: what does Cedric encourage the community to do and what does he try put in place to help the community? Essentially there are three adaptation strategies discussed in the play: greater unity, rainwater harvesters and a disaster management plan. From the ICAD performance, the first two were successfully identified with 85% of the people commenting that Cedric tried to "get the community to work together" and also started building a rainwater catching device or rainwater harvester. A further 16 commented that he tried to implement a choir and to encourage people to write songs, but essentially the core adaptation messages came through. The idea of a disaster management plan was not mentioned, but this was a minor component of the overall strategy and the idea of people working together came out with resounding clarity.

5.4.4.3   What did people feel they learned from this experience?

From the ICAD performance, the most repeated expression of learning was that 'unity is strength' and that 'by working together, we can overcome obstacles'. This was clearly the overriding theme for the play but there were a number of deeper insights as well including that climate change affects everyone and that we need to pay more attention to 'forgotten communities'. Others commented that they recognised the difficulty in trying to get people to work together and that they have started to think about the effect they have on the planet. These responses were very positive and demonstrated that the play had made people think about their own circumstances in relation to the greater society.

Learning Box 4: What is African?

One of the responses to the play – made by a representative of the ACCCA project who attended a rehearsal – was that the play was lacking a certain degree of 'Africanity'. It was commented that in this "uniquely sensitive social laboratory crosscut by societal stressors including race, informal accumulation, migration and market failure it is easy for perceptions of external agendas and top-down tutelage to develop". Further concerns were raised that the play did not reflect *African* feelings or *African* voices. This raised an interesting question: what is it to be African? While this question has been asked throughout Africa's tumultuous history of dealing with colonialism, it appears that the question remains. Is 'African' the depiction of traditional, rural life? Is it the imagery of women with pots on their heads and babies on their back? Perhaps with bright coloured beads around their delicate necks and wrists? Is being a 'happy native', a concept that playwright and performer Greg Cotzee explored extensively, the only depiction of what it is to be 'African'? The Amaoti context is unique: it is a rough, underdeveloped township that houses more people than it can hold, people from a variety of different backgrounds and social realities who gather in impoverished states with the hope of earning a living. There are no 'happy natives' here, no farm lands, no impala springing in the background or any other imagery that denotes a romanticised rural, 'African', life. In fact, Amaoti represents a growing phenomenon in South Africa – a blend of urban, township, traditional people, wrought with poor infrastructure, poor education and high levels of disunity and crime. The performers from *Fish Out of Water* - people who have grown up in the community themselves - resoundingly commented that the play was an accurate depiction of life in Amaoti, a representation of themselves. While it may not have been a representation of conventional, out-dated thoughts of "Africanity", it appears to have been an accurate representation all the same. As Spitezok von Brisinski (2003:126) comments, "in light of the transformations South Africa has undergone since democratisation, it seems relevant to conceptualise the conjunction of arts and community in new ways by looking at their symbolic function of creating meaning and developing identity, along with the interventionist functions of social and artistic engagement". If we are to address issues such as climate change through recognising and accepting the realities in which people exist, perhaps it is important that we redefine our perceptions and alter our preconceived notions, and indeed caution against "perceptions of external agendas' and 'top-down tutelage'. Perhaps the meritless, disempowering limits that have been placed on what it means to be 'African' need to be questioned and dissolved.

5.4.4.4   *Was theatre considered an effective means of communication?*

All of the respondents from ICAD indicated that they thought theatre was an effective means of communicating climate change issues, commenting that it is both 'entertaining and memorable'. All of the respondents thoroughly enjoyed the play, with the majority commenting that the singing was their favourite part, along with the 'flood scene' where everyone learned that they needed to work together. The majority of respondents also commented that the play was a true depiction of life and that, in particular, the challenges experienced by townships and informal settlements is very real and well captured in the play. The only respondent to believe the play was not a true depiction of life commented that 'most people don't care about the future'. This was an interesting comment to make because it is very true, and this was one reason that the play was conducted – to help people think about their future and to take the necessary steps in dealing with the challenges we are faced with. The most lovable character in the play was commented to be Cedric, mainly because of his valiant efforts to bring the community together and his ability to teach people new

things. Almost all the respondents noted that if they were in the play, they would like to be Cedric and do for their communities what he did for Amaoti. Other likeable characters were Miriam, the Reverend and Mr Maphisa, the local drunk, with comments that they were inquisitive and eager to learn, faithful and interesting, respectively.

5.4.5 Performer responses to the play

Through the literature provided, it was explained that a major component of theatre for development is the degree to which concepts and learning can be internalised, particularly by the participants in the process. As Rahman (1983:29) stated, participation is a "continuous educative process – a process of progressive conscientisation" and the degree to which this has been achieved was important to determine. A questionnaire was developed for the performers in the play which sought to determine the following:

- Were the concepts of climate change understood?

- Was theatre considered an effective means of communication?

- What was thought of the rehearsal process?

- Had this process impacted them in some way?

A total of 14 people responded to the questionnaire which was analysed according to these questions.

5.4.5.1 Were the concepts of climate change understood?

Eighty percent of the performers had heard about climate change previously, mainly from school and various media forms, and explained it as a change in weather patterns which negatively impacts on weather systems, resulting in heavy rains, thunderstorms, floods and extreme temperatures. Reference was frequently given to global warming and from the responses it was evident that the main components of climate change had been understood sufficiently.

5.4.5.2 Was theatre considered an effective means of communication?

All of the respondents indicated that they thought theatre was an effective means of communication with reasons being 'drama makes it easy to understand', 'you can actually see the actions' and 'it gives you the knowledge of climate change and ways to solve it'. All of the

respondents felt that people would learn from this drama commenting that 'when people see things happen to other people, they think about what it would be like if it happened to them', 'by doing actions and saying things, it makes it easy for people to understand', and 'it is entertaining'. In addition to this, all respondents felt that the play was an accurate reflection of the community, which would help people to understand the message of the play – further comment was made that the characters were people you would find anywhere and the play showed the hard life of people in townships and in particular, Amaoti. Through comments repeated throughout the responses, it was indicated that one of the key successes of the play was that it showed the suffering of some people in townships and shows that 'real' way that people interact. It was further indicated that a number of the impacts discussed in the play (namely that of water issues) is already happening in the community, so people would be able to relate to this idea. Perhaps one of the most succinct responses to whether theatre is an effective means of communication was this; 'drama is a good way to communicate because it can make you laugh and be emotionally involved (love), and this helps you to concentrate on the real meaning of the play, which is working together'.

5.4.5.3   *What was thought of the rehearsal process?*

Most of the performers stated that they enjoyed the rehearsal process, in particular the warm-ups, although they commented it was often long and difficult and frustrating when people did not remember their lines. Most people commented that their favourite part was when they had the opportunity to perform. Interestingly, one of the favourite parts of the rehearsal process was when the play was switched from English into Zulu – for the ICAD performance, the audience was predominantly English speaking, and so the play was performed in English. When rehearsals were conducted for the Amaoti performance, effort was made to translate the play into Zulu, considering that most people would be Zulu speaking. This was an interesting rehearsal as it was the first time that it forced the performers to understand the words that they were saying instead of just memorising them – the rehearsal was filled with laughter and debate as people struggled to find the right words in Zulu. As one of the respondents commented, 'we didn't know how to say the words in Zulu – it was hard, but good and interesting'. Another point that was repeated throughout the responses was that one of the worst parts of the rehearsal process was the disrespect that the performers showed to each other by not arriving on time and losing focusing during the rehearsals. This lack of respect seemed to manifest itself more and more as the play progressed, finally culminating in the cancellation of the community performance. While this initially was viewed as a very negative component of the research, it ultimately allowed for some key conclusions to drawn from the study as a whole, which is further discussed in Section 6.3.

5.4.5.4 Has this process affected them in some way?

There were a number of interesting personal learning points that happened through this process that has affected the way people view themselves as individuals and the way they view themselves within the community. Most people commented that they learned they were good performers and that they had the ability to perform on stage in front of people, which is something they had not previously known. Comment was made that they had found a talent they did not know they had and that they trusted themselves more. A particularly interesting comment was 'I learned that I wasn't doing anything to help the community, and by doing so, I was actually making it worse'. Perhaps most interesting were the comments made regarding how their perspective of the community, and their role it, had changed as a result of the process of this play. One point resounded starkly: for the community to overcome the obstacles they were facing, they need to act in unity, and the respondents felt that they were part of this process. Comments were made stating 'we have to work together to overcome the challenges we face', 'we need to act in unity to make a difference' and that this included them; 'I will be able to contribute to serious matters' and 'I can help the community'. Even more specific was this comment, '… before I used to look after myself when there was no water, I would go to the standpipe with many buckets not noticing that everybody else needs some. I will now only take one bucket and let other people have water too'. Further to this, some of the responses gave recognition to an understanding of the whole, commenting, '…people should learn how to work together, there should be less fighting, we need to learn how to listen to each other, we need to put our pride aside and learn how to work as a team'.

In addition to this, as was determined in the close-out workshop, the performers were inspired to continue with the drama group and felt that they could perform an important role in terms of communicating messages to the community. While it will be interesting to see if this idea is actually implemented, consideration was given to a number of important things that needed to occur for the group to be sustained. Firstly, issues were raised that parents were not involved in the process and thus either did not believe, or care, that they were in a play. To sustain the drama group, a meeting would need to be held with all the parents to explain to them what their objective was and to elicit their support. Secondly, the group would need to develop a contract, a binding agreement with its members with rules and means of interaction. All of these points provided insights into the process, the conclusions of which are further discussed in the following chapter.

5.5   Conclusion

This chapter has discussed the results of the research, based on the methodology that was discussed in Chapter 4. It has given an overview of the social vulnerability analysis that was conducted, and this informed the development of a play. The process of developing the play was also discussed, including the script, rehearsal process and performances, and through this a number of key learning points were found. The following chapter will discuss these learning points to a greater extent, understanding them more comprehensively and drawing conclusions from them that relate to both the main research questions and the literature provided.

CHAPTER 6
DISCUSSION AND CONCLUSIONS

6.1   Introduction

Chapters two through five have gone into great detail discussing concepts of climate change impacts, social vulnerability, adaptation strategies and theatre as a communication tool, though both literature and practical fieldwork. This chapter will focus on linking these components together and drawing conclusions from them, in response to the research objective and subsequent research questions, as discussed in Chapter 1. It will provide reflections on the work conducted and recommendations for research that has emerged from this process.

6.2   Research Objectives

The main research objective for this study was to demonstrate how theatre can be used in the translation of knowledge for climate change adaptation. In light of this, five key research questions were developed, pertaining to how to determine information that needs to be communicated, if theatre is an effective means of communication, how theatre should be designed to make it effective, how this should be implemented and finally, how it should be evaluated. Each of these questions will be explored in greater detail.

6.2.1   What information, based on expert and community knowledge, needs to be communicated to communities?

The information that needed to be communicated can simply be described as: what changes are going to happen, how is this going to affect the community, and what can be done about it? The specific identification of information was established in three processes. The first was to examine the projected impacts of climate change and assess the areas that were likely to be affected. From this, five key areas were identified; Water and Sanitation, Livelihoods and Demographics, Services and Infrastructure, Food Security and Social Networks. The indicators used in the vulnerability assessment for the Amaoti community were conceptually similar to those used by Hahn *et al.* (2009) but were adapted to address and adhere to the overall aims of this study (as discussed in Section 4.4.4.1). This proved a successful approach for two reasons; it identified the first set of information that needed to be communicated – impacts - and it provided a framework to determine

how those impacts would be felt within the community – resilience and vulnerability – which became the second piece of information communicated. Through this vulnerability analysis it was determined that Amaoti was particularly vulnerable to water access and that there were issues of disunity that needed to be addressed. In addition to this, the third process was to determine adaptation strategies and through an analysis it was determined that rainwater harvesters and an emergency response plan were the two most appropriate strategies to communicate. This process was effective in determining what information needed to be communicated; it provided a sound framework in which to operate in and a relatively simple process to follow in terms of defining vulnerability. This information gathered was undoubtedly correct, as the vulnerabilities identified were in line with those determined in projections, and respondents to the play agreed that the play depicted a true sense of life – the challenges faced were real. While there is definite room for improvement in terms of the application of the tools, processes could have been better understood and techniques refined, it is recommended that studies of a similar nature use this social vulnerability framework to identify knowledge that needs to be communicated.

6.2.2 How can theatre be designed to render it an effective communication mechanism?

As Mda (1993) suggests, theatre is made effective as a communication tool when participants play an active role in producing and distributing messages, and when it integrates systems of communication that already exist in particular areas. Both of these components were successfully achieved – the storyline, characters, circumstance and points of change were all identified through the participation of community members, and the play drew on the talents and communication styles already existing within the community through the drama group. Through the feedback received from audience members and participants, it was concluded that the play was a true depiction of society and thus was appropriate and relevant to the target audience, making it more effective. Comment was made that the play depicted true life in townships, both with regards to the challenges that are faced, the characters that are found, and the way that people interact. As Mda (1993) states, theatre should engage audience members in a dramatic fiction that has a connection to their personal situation and circumstance. To understand personal situations, it is recommended (for studies with a similar context) that a social vulnerability assessment be conducted, much as it was in this case. This analysis helped to understand the functioning of the community in a comprehensive manner, understanding how systems were inter-related and impacted on each other, which could then be codified into a theatrical performance. As Bryam and Moitse (1985) state, it is through this codification that people can view the performance as a reflection on

themselves, allowing them to see their social situation in a fresh way. In addition to this, focus should also be placed on gathering personal stories from community members, something that could have been done to a greater extent in this research. Stories aid in understanding people's feelings and emotions about situations which can be extremely useful when developing characters and relationships for a play of this manner. To a certain extent this was achieved through the various drama workshops that were held prior to the creation of the play, and this proved a useful tool in identifying the more subtle aspects of what needed to be included in the play to make it an effective means of communication.

6.2.3   How can such a communication mechanism be implemented?

The implementation of this theatrical production was both successful and not. It was successful because it drew on existing talents and capacities from within the community, mainly from the Sakisizwe Drama Group, and thus it was possible to use this group to understand the community better, through subtle drama techniques and interactive participation. As a result, the process has been deeply engrained in the participants and rendered the production successful in terms of its ability to communicate the core messages. On the other hand, this means of implementation was not successful because the group itself was clearly disunified, resulting in the cancellation of the final performance. It is evident that further research needs to be conducted in terms of how to get people to pro-actively participate and to address issues of complete apathy, a much larger notion which is further discussed in Section 6.3. In this sense, having a once-off performance placed a large amount of pressure on the performers in terms of their required commitment – something that several of them were evidently not familiar with. In reflection, it would have been more effective to work with several groups and engage with them through the drama techniques on a workshop basis, instead of having a once-off production. This would have meant that more people would have been involved in the process and thus more information would have been gathered, rendering the information communicated more accepted and the identified strategies more sustainable. Given the dynamics of this research, however, such an implementation would not have been possible.

Through this research, the importance of good facilitation has also been understood and the influence this can have on the success or failure of the process, as explained by both Mda (1993) and Boal (1992). While literature suggests that the facilitator needs to promote a process of "enlightenment and emancipation" (Ackroyd, 2006), little cognisance is given as to how difficult this actually is. The proficiency of the facilitator is vital, particularly with regards to familiarity with the

exercises and games, and to conduct a process such as this requires significant experience and understanding.

In addition to this, from the information obtained in the close-out workshop, it was evident that a key factor in implementing the theatre process was buy-in from family members, particularly parents, who would support the initiative. Without the support of family members, challenges were experienced in terms of arriving on time, and particular emphasis needs to be placed on determining the people who need to be adequately informed of the process, its objectives and its means if implementation, so that this process can be transparent and supported by all parties involved.

6.2.4   How can such an implementation be evaluated?

The evaluation of this implementation was predominantly done through the use of questionnaires distributed to audience members and performers. The main objective was to identify if theatre was an effective means of communication by evaluating how much of the information was retained. The results from this questionnaire were very positive and indicated that theatre was an effective communication tool, but in many ways this is a very superficial form of evaluation. Because the surveys were conducted immediately after the performance, the information of the play was still fresh in respondents' minds. It would be interesting to conduct the same survey again after a period of several months to determine if the information had been remembered and if this knowledge had subsequently changed any behavioural patterns. Such an evaluation would be able to support the claim of theatre as an effective means of communication with greater conviction. It is recommended that this be done with future evaluative research.

More interesting, and probably more authentic, was the evaluation of the performers, who provided deeper insights into the process. Considering the significant involvement they had in the process, more action should have been taken to record their reflections throughout – reflection sessions should have been held more frequently and more attention paid to monitoring their personal development, as well as the techniques of the facilitator. While this was the intention at the beginning of the process, as the workshops progressed the researcher recognised the difficulty in implementing the technique - there was inconsistency within the group and the concept of reflection had to be explained fairly regularly, thus detracting from the organic process of reflection that should have occurred. This was an important lesson learned regarding the facilitation of reflection and as O'Neil, (1995) comments, reflection-on-action is an integral part the process and allows for critical thinking to determine the efficacy of the process and consider if alterations

need to be made to promote better results. In this sense, workshops could have been structured to include various reflections, the results of which could have been analysed and better understanding made of their learning styles. It is possible that there could have been greater ownership of the performance itself had this occurred; this should be investigated further and future workshops developed accordingly.

6.2.5   Is theatre an effective way to communicate that knowledge?

The play *Fish Out of Water* was developed to communicate the information identified, and a survey was conducted to determine responses to it. From the information gathered, it was overwhelmingly confirmed that theatre is an effective way to communicate knowledge of this nature. Epskamp (2006) suggests that theatre can engender learning largely due to the cultural identities of society being reinforced. In *Fish Out of Water*, these 'cultural identities' were first identified through the workshops and then reinforced in the play by using the characters to instigate change and action within the storyline. In this way, the developmental concepts were being promoted by key figures for the community while bearing in mind the socio-economic and cultural circumstances. Prentki and Selman (2000:8) state that theatre for development can be described as "a process of theatre which deeply involves specific communities in identifying issues of concern, analysing current conditions and causes of a situation, identifying points of change, and analysing how change could happen and/or contributing to the actions implied". This process of events is directly followed in the play – Cedric identifies floods and water as a concern in Amaoti, studies the context in which these changes are happening, identifies rainwater harvesting technologies and working together as possible points of change, and then is faced with the putting these plans into motion while dealing with the different reactions from the community. Not only was this evident in the play, but the whole process for this research has been guided by this. The very essence of the play was formed on the participants' – both those involved in the vulnerability analysis and the theatre production – collective experiences of life and challenges in Amaoti. This and the positive feedback from the performance, further support theatre as an effective means of communication.

In addition to the reflections conveyed by audience members to the play, the reflections of the performers themselves were particularly interesting. The performers went through an intensive period of workshopping, rehearsal and performance that was coloured by obstacles along the way, and through their comments on how the play had changed their view of the community and their role in it, a key learning was made. Here it was evident that the process started the inroads of more cognitive thinking of the individual in relation to his community, as Mda (1993) states, "the process of dialogue which enables the individual to transform himself in relation to his fellows and to act

critically towards himself and society". While this was certainly not achieved in its entirety, it can be concluded that this process has been initiated and has the potential to sustain and perpetuate it to a much deeper level. It was also evident that the play had caused a level of internalisation that had caused an individual to view the community in a different light, recognise the challenges that it was facing and decide on personal action in response to this. Rahman (1983:29) states, "through collective self-reflection of their experiences and problems, people become more aware of the decisions of their reality and what can be done by themselves to transform it". This has clearly been seen with both the performers of the play, and the audience members who saw the play. It is acknowledged that by the end of the research project, action identified by the theatre project has not occurred, but what matters is that the process lends itself to encouraging holistic thinking that inspires action. As Boal (1979:122) explains, "No matter that the action is fictional; what matters is that it is action!"

6.3   Conclusions

The fieldwork conducted provided an enormous learning experience in terms of the actual implementation of the tools and processes suggested by literature. While literature can be understood, theories conceptualised and strategic interventions mapped out, the actual conducting of the work proved to be a very different endeavour. Challenges were faced on all counts; communications with local structures were sparse, community institutions disorganised, language barriers difficult to overcome and tools harder to implement than initially thought. But there was an unexpected drive, an inspirational source of conviction that sought to overcome these challenges, and through this came a deeper understanding of how interactions should be implemented. This was also a frustrating process as the lessons learned generally occurred after the time when they were needed, leaving nothing more than a vein speculation of how it could have been done differently. In particular, the theatre processes were extremely difficult to facilitate and the skills, experience and quick-thinking required to be effective should not be underestimated; it is a challenging role and one that requires strong guidance and experience. That said, there are also a number of opportunities that rise from this type of fieldwork; processes can be explorative, interesting stories can be shared and genuine work can emerge, all of which contribute to a rich learning experience.

Perhaps the greatest learning experience, however, occurred during the cancellation of the final performance. The whole experience raised so many questions that went far beyond the scope of this research. The participants who never arrived for the performance demonstrated a complete disrespect for time – as had been evidenced throughout the rehearsal process – and further to this,

a total failure in honouring their commitment to both the process and to the others in the play. There was an overwhelmingly nonchalant and apathetic attitude that said 'we are coming, we are on our way', a phrase that gets repeated continuously until eventually the realisation is made that it is just a lie. As a result, there is the complete dismissal of the concept that you have to be somewhere at a particular time to fulfil a responsibility that you have willingly committed yourself to. While this study has made general recommendations for further research, its true recommendation is this: research needs to be conducted into understanding why people are so despondent to opportunities that present themselves, why there is a complete lack of ability to commit to a process and adhere to some of the basic principles of human engagement that exist. The conclusions of this study force questions to be raised regarding the psychological state of our society – how can there be such disinterest in the progression of our communities? Is this the true result of the legacies of our past and the turbulent present we currently find ourselves in – a complete lack of empowerment that drives us to the point of sabotaging processes that seek to encourage that very same empowerment? Interestingly, these questions were only raised after the failed attempt of the community performance, and at certain points throughout the rehearsal process. At the ICAD performance, these difficulties were not experienced; performers were ready on time and generally accountable for their actions. Why is it that when there is the lure of *going somewhere else*, people are participative, cooperative and responsible, and yet fail to manifest these same qualities when the activity takes place on their doorstep? Serious questions need to be raised about how we can address this; how we determine what creates this apathy and disinterest that ultimately prevents us from engaging with anything positive, and then what we can do to overcome it. While investigating the use of theatre in climate change communication is interesting and the efforts made in environmental and developmental education is unquestionably important, none of these endeavours will be rendered successful unless we address the fundamental root of the moralistic, and arguably spiritual, degradation of our societies.

While these were the initial thoughts from the process, a number of important factors were raised in the close-out workshop held with the performers. In this discussion, issues were raised that reaffirmed these challenges at a much deeper level – the general irresponsiveness of the community to any events that did not offer material or financial gain pose a significant threat to the sustainability of current initiatives and to stimulating new opportunities. This attitude perpetuates the apathy that was evident in some of the performers themselves, and unfortunately, because of this attitude, the efforts of those who were driven and motivated were stifled. It was a stark realisation of the power of negativity - people who are disinterested, unconcerned, and awaiting the next hand out seem to control the activities of everyone else, and their apathy determines the lack of implementation of activities in the community, at the expense of those who are motivated and

inspired to cause change. This idea needs to be investigated further, we need to understand it and address the real issues in an attempt to bringing about positive social change.

This research has been an intensely informative process and has contributed to learning on several fronts. In response to the main research objective, to demonstrate how theatre can be used in the translation of knowledge for climate change adaptation, the process undertaken was proven effective based on the accurately identified vulnerabilities and the successful development and performance on the play *Fish Out of Water.* As a result of this, the ways in which theatre for development can be used as a means of communication within both a socio-developmental and environmental context has been demonstrated; issues of social cohesion and unity were explored within the concept of climate and environmental change, which was positively received by audience members and performers alike. Theatre has proven to be a tool that promotes the dynamic thinking of current problems and ways in which these may be overcome. It has explored questions of identity and community, of the environment and of the human engagement with it, to the point where cognitive recognition is given to required action and ideas as to how this may be undertaken are considered. If used properly, it can be a most efficacious instrument in creating understanding and inspiring action.

Further to this, the research has also highlighted a number of fundamental issues that need to be addressed to successfully implement environmental, or any other developmental communication. Further research should be conducted into understanding notions of apathy; what the causes are and potential ways that this can be overcome. If the purpose of life and society is understood to be the generation of creative processes which serve to release the gems of human potential, then there needs to be a greater understanding of how this is done and more efforts placed to ensure that this successful occurs. It is only as individuals begin to cultivate their innate capacities, so the community around them is transformed, and impetus is given to an ever-advancing civilization.

REFERENCES

Ackroyd, J. 2006. **Research Methodologies for Drama Education.** Oakhill Trentham Books: UK.

Adger, W and Kelly, P. 1999. Assessing Vulnerability to Climate Change and Facilitating Adaptation. CSERGE Working Paper GEC 99-07. Climatic Research Unit and Centre for Social and Economic Research on the Global Environment, University of East Anglia and University College London.

Adger, WN and Kelly, PM. 1998. Social vulnerability to climate change and the architecture of entitlements. Presented at IPCC Workshop on Adaptation to Climatic Variability and Change, San José, Costa Rica, 29 March - 1 April 1998. *Mitigation and Adaptation Strategies for Global Change*, 3, in press.

Adjibolosoo, S (ed.). 2004. **The International Development Programme of Activities: What Are We Doing Wrong?** Bloomington: 1st Books Library.

Adjibolosoo, S. 1995. **The Human Factor in Developing Africa**. Westport, Cape Town: Praeger.

Advancing Capacity to support Climate Change Adaptation (ACCCA).2009. *Project Overview.* http://www.acccaproject.org/accca/. [2009, 2 February].

Agrawal, A. 2008. Proposed Framework on the Role of Local Institutions in Adaptation to Climate Change, Washington D.C., USA: The Social Development Department, The World Bank.

Ake, C. 1981. **A Political Economy of Africa**. London: Harlow Longman.

Alwang, J, Siegel, P, and Jorgensen, S. 2001. *Vulnerability: A View from Different Disciplines*, World Bank Social Protection Discussion Paper Series 0115, Washington DC: Social Protection Unit, Human Development Network, World Bank.

Amaoti Enumeration Report (2005). **Amaoti Enumeration and Mobilisation Exercise**, A Partnership between eThekwini Municipality and South Africa Homeless Peoples Federation. Enumeration report submitted by Project Facilitator on behalf of the eThekwini Municipality Housing Unit, Homeless Peoples Federation and Amaoti Community, and Community Organisation Urban Resource Centre/SDI, 25 May 2005.

arepp:Theatre for Life. 2009. *Theatre for Life: Training.* http://www.arepp.org.za. [2009, 1 November].

Asian Cities Climate Change Resilience Network (ACCCRN). 2009. *Overview of Projects,* www.rockfound.org/initiatives/climate/071509accrn_brochure.pdf. [2009, 1 November].

Bardhan, P. 1996. Efficiency, equity and poverty alleviation: policy issues in less developed Countrie. *Economic Journal,* 106:1344-1356.

Beek, K. 2000. *Spirituality: A Development Taboo*, **Development in Practice**. 10(1):31-43.

Bjorkman, I. 1990. '*Mother, Sing for Me': People's Theatre in Kenya,* **The Journal of Modern African Studies**, 28(1):153-155.

Blaikie, P, Cannon, T, Davis, I, and Wisner, B. 1994. **At Risk: Natural Hazards, People's Vulnerability and Disasters**. London: Routledge.

Boal, A. 1979. **Theatre of the Oppressed**. London: Pluto Press.

Boal, A. 1992. **Games for Actors and Non-Actors**. London: Routledge.

Bohle, H, Downing, T, and Watts, MJ. 1994. *Climate change and social vulnerability: Toward a sociology and geography of food insecurity*. **Global Environmental Change**, 4:37–48.

Boughton, DA, Smitz, ER, and O'Neill, RV. 1999. *Regional Vulnerability: A Conceptual Framework*. **Ecosystem Health**, 5:312–322.

Bromley, M. 2009. "Climate Change North" [Online]. Available: www.climatechangenorth.ca/section-1p/LP_15_HI_Ms_play.html [2009, 25 February].

Burkey, S. 1993. **People First: A Guide to Self-Reliant, Participatory Rural Development**. Zed Books Ltd: London.

Burns, M and Weaver, A. 2009. **Exploring Sustainability Science**. Sun Press: Stellenbosch.

Burton, I., Huq, S., Lim, B., Pilifosova, O., and Schipper, E., 2002. *From impacts assessment to adaptation priorities: the shaping of adaptation policy*. **Climate Policy**, 2:145-159.

Byram, M and Moitse, F. 1985. *Theatre as an Educational Tool for Extension Work: A Training Strategy*, unpublished paper presented at the International Conference on Theatre for Develoment, Maseru, Lesotho, 24 February – 2 March.

Cannon, T. 1994. *Vulnerability analysis and the explanation of natural disasters*', in **Disasters Development and Environment**, ed. A Varley, Pg. 13-30. John Wiley, Chichester.

Carney, D.*et al.* 1999. **Livelihoods Approaches Compared.** UK Department for International Development.

Carter, M and Barret, C. 2006. The Economics of Poverty Traps and Persistent Poverty: An Assest-Based Approach. **Journal of Development Studies**, 42(2):178-99.

Castro, A. 2002. **Sustainable Livelihoods Analysis: An Introduction**, Public Goods and Public Bads in Nature: From landscapes to Genomes in South Asia, South Asia Consortium, Syracuse and Cornell Universities. February 23, 2002.

Castro, AP. 2002. 'Sustainable Livelihoods Analysis: An Introduction'. Paper delivered at the South Asia Consortium, Syracuse and Cornell Universities. Public Goods and Public Bads in Nature: From Landscapes to Genomes in South Asia.

Chambers, R and Conway, G. 1992. *Sustainable rural livelihoods: practical concepts for the 21st century,* IDS Discussion Paper 296, Brighton: IDS

Chambers, R. 1989. *Editorial Introduction: Vulnerability, Coping and Policy*. **IDS Bulletin**, 20(2):1-7.

City of Cape Town. 2009. http://www.capetown.gov.za/en/Water/Pages/Awards.aspx. [2009, 19 November].

Coetzee, J, Graff, F, Hendricks, F and Wood, G. 2001. **Development – Theory, Policy and Practice**. Oxford: University Press.

Cornwall, A and Jewkes, R. 1995. *What Is Participatory Research?* in **Social Science and Medicine**, 41:1667-1676.

Creative Research Systems (CRS). 2009. The Survey System, www.surveysystem.com/sscalc.htm. Accessed 23 March 2009.

Creswell, J. W. 1998. **Qualitative inquiry and research design: Choosing among five traditions**. Thousand Oaks, CA: Sage.

Cutter, SL. 1993. **Living with Risk**. London: Edgar Arnold.

Dalrymple, L. 1993. **A drama approach to AIDS education: A report on Zululand Teams**. Empangeni: University of Zululand.

Darder, A, Baltodano, M and Torres, R. 2003. **The Critical Pedagogy Reader**. Routledge Falmer: London.

Davis, G and Fuchs, A. ed. 1996. **Theatre and Change in South Africa**. Amsterdam: Harwood Academic Publishers GmbH.

Denton, F, Sokona, T, Thomas, JP, 2000. Climate change and sustainable development strategies in the making: what should west African countries expect?: OECD, ENDA-TM, Dakar, Senegal.

Department for International Development (DFID). 1999. Sustainable Livelihoods Guidance Sheets.

Department of Environment and Tourism (DEAT). 2009. *Climate Change.* http://www.deat.gov.za/Documents/Documents/2003May26/climate_change_conventions_260520 03.html. [2009, 4 August].

Department of Water Affairs (DWAF). 2009. Free Basic Water Regulations. www.dwaf.gov.za. [2009, 6 August].

Dessai, S. 2003. Heat stress and mortality in Lisbon Part II, An Assessment on the potential impacts of climate change, **International Journal of Biometeorol**. 48:37-44.

Dilley, M. and Boudreau, TE. 2001. Coming to terms with vulnerability: a critique of the food security definition. *Food Policy,* 26: 229–247.

Dolšak, N, and Ostrom, E, eds. 2003. **The Commons in the New Millennium: Challenges and Adaptations**. Cambridge, MA: MIT Press.

Downing, T and Patwardhan, A. 2005. "Assessing Vulnerability for Climate Change". Technical Paper 3. www.unep.org/Themes/climatechange/docs/UNEPAdaptationSourcebook.doc. Accessed 23 March 2009.

DramAide. 1996. **Lifeskills Education**. (un-published).

Ellis, F. 2000. **Rural Livelihoods and Diversity in Developing Countries**. Oxford: Oxford University Press.

Environmental Resources Management. 2009. *Municipal Adaptation Plan – Health and Water*. Final draft document prepared for the eThekwini Municipality.

Epskamp, K. 2006. **Theatre for Development: An Introduction to Context, Applications and Training**. ZED Books: London.

eThekwini Municipality. 2008. *Ward Profiles.* http://www.durban.gov.za/durban/government/ward_profiles. [2008, 2 February].

eThekwini Municipality. 2009. *Water and Sanitation.* http://www.durban.gov.za/durban/services/water_and_sanitation/education. [2009, 3 October].

Experiment-Resources.com. 2010. "Convenience Sampling".[Online] Available at www.experiment-resources.com. [2010, 10 February].

Feldman, S. 2006. Workshop Report, 6-8 March 2006, Israel ARC Forum Theatre and the British Council [Online]. Available: www.britishcouncil.org [2009, 2 February].

Fleishman, M. 1990. *Workshop Theatre as an oppositional form,* **South African Theatre Journal**, 4(1):88–118.

Fleishman, M. 1996. *Physical Images in the South African Theatre.* Davis, G and Fuchs, A. ed. **Theatre and Change in South Africa**. Amsterdam: Harwood Academic Publishers GmbH.

Food and Agricultural Organisation (FAO). 2007. *The Community's Toolbox: The Ideas, Methods and Tool for Participatory Development.* Corporate Document Repository. www.fao.org. [2007, 12 July].

Freire, P. 1972. **Pedagogy of the Oppressed**. Penguin: London.

Fried, L and May, T. 2004. "Playwrights Guidelines." Earth Matters On Stage: An Ecodrama Playwrights Festival [Online]. Available: www.humboldt.edu/-emos/ [2009, 12 March].

Fussel, H, and Klein, R. 2002. Assessing Vulnerability and Adaptation to Climate Change: An Evolution of Conceptual Thinking. Paper presented at the UNDP Expert Group Meeting on "Integrating Disaster Reduction and Adaptation to Climate Change" Havana, Cuba, 17–19 June 2002

Golder Associates Africa (GAA). 2009. Internal Reports – 10612-8991-Social Vulnerability Assessment to Climate Change.

Guba, E and Lincoln, Y. 1981. **Effective evaluation: Improving the usefulness of evaluation results through responsive and naturalistic approaches**, San Francisco, CA: Jossey-Bass.

Gunner, L. ed. 2001. **Politics and Performance: Theatre, poetry and song in southern Africa**. Johannesburg: Witwatersrand Press.

Hahn, M.B., Riederer, A.M. & Foster, S.O., 2009. *The Livelihood Vulnerability Index: A pragmatic approach to assessing risks from climate variability and change—A case study in Mozambique*, **Global Environmental Change**, 19(1):74-88.

Hauptfleisch, T and Steadman, I. ed. 1984. **South African Theatre: Four plays and an introduction**. Pretoria: Kagiso Publishers.

Hedebro, G. 1982. **Communication and Social Change in Developing Nations**. Ames: The Iowa State University Press.

Heinlein, K. 2006. *Green Theatre: Proto-Environmental Drama and the Performance of Ecological Values in Contemporary Western Theatre*. Dissertation submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College in partial fulfilment of the requirements for the degree of Doctor of Philosophy in the Department of Theatre [Online]. Available: http://etd.lsu.edu/docs/available/etd-11162006-175114/unrestricted/Heinlein_dis.pdf [2009, 2 March].

Huq, S and Ayers, J. 2007. **Critical List: The 100 Nations Most Vulnerable to Climate Change**, IIED Sustainable Development Opinion, December. London: International Institute for Environment and Development.

Intergovernmental Panel on Climate Change (IPCC), 2001. **Climate Change 2001: Impacts, adaptation and vulnerability, Third Assessment Report of the IPCC**. Summary for Policy Makers. WMO, Geneva.

Intergovernmental Panel on Climate Change (IPCC), 2001a. **Climate Change 2001: Synthesis Report**. Cambridge: Cambridge University Press.

Inter-governmental Panel on Climate Change (IPCC). 2007. **Fourth Assessment Report, Impacts, Adaptation and Vulnerability**, Working Group II Report. Geneva: IPCC.

Joubert, L. 2006. **Scorched: South Africa's changing climate**. Wits University Press: Johannesburg.

Joubert, L. 2008. **Boiling Point. People in a changing climate**. Johannesburg: Wits University Press.

Kay, JJ, Foster, J. 1999. **About Teaching Systems Thinking** in Savage, G, Roe, P (eds), Proceedings of the HKK conference, 14-16 June, 1999, University of Waterloo, Onatrio.

Khumalo, T and Blose, G. (2007). "R3 million Water Project for Amaoti", article written for the eThekwini Municipality Website – The Official Site of the City of Durban. http://www.durban.gov.za/durban. Accessed 13 January 2009.

Kikar, GA, 2000. *Synthesis report for the vulnerability and adaptation assessment section: South African country study on climate change.* Proceedings of the Presentation at the Workshop on Measuring the Impacts of Climate Change on Indian and Brazilian Agriculture. World Bank, Washington DC, 5-7 May.

Kiraka, R, Manning, K and Armstrong, A. 2007. *Managing International Development Agencies (IDAs): The Significance of External Stakeholders* in **The International Journal of Knowledge, Culture and Change Management,** 4:75-87.

Lawrence, P, Meigh, J, Sullivan, C. 2002. **The Water Poverty Indec: an International Comparison**. Keele Economics Research Papers: Keele University.

Leedy, P.D. and Ormrod, J.L. 2005. **Practical Research: Planning and Design**. New Jersey: Pearson Education International.

Leis, R. 1979. *The Popular Theatre and Development in Latin America* in **Educational Broadcasting International**, 12(1).

Lenhart, J. 2009. Empowering social networks to localise climate strategies in impoverished urban communities: Examining the basic urban services strategy in Kenya, Fifth Urban Research Symposium 2009.

Lohr, S. 1999. **Sampling: Design and Analysis**. Duxbury Press

May, T. 2005. *Greening the Theatre: Taking Ecocriticism from Page to Stage* in **Journal of Interdisciplinary Studies**. Fall 2005:84-103.

McCarthy, J, Canziani, O, Leary, N, Dokken, D, and White, K. 2001. **Climate Change 2001: Impacts, Adaptation and Vulnerability**, Contribution of Working Group II to the Third Assessment Report of the IPCC, Cambridge University Press, Cambridge.

McCarthy, JJ, Canziani, OF, Leary, NA, Dokken, DJ and White, KS (eds.). 2001. **Climate Change 2001: Impacts, Adaptation and Vulnerability**. Cambridge: Cambridge University Press.

McGeehn, M and Mirabelli, M. 2001. The potential impacts of climate variability and change on temperature related morbidity and mortality in the United States, **Environmental Health Perspectives**, Vol 109, Supplement 2, May 2001.

McLaren, P. **Life in Schools: An Introduction to Critical Pedagogy and the Foundations of Education**. Longman: New York.

Mda, Z. 1993. **When People Play People: Development Communication Through Theatre**. Witwatersrand University Press: Johannesburg.

Mlama, P. 1991. **Culture and Development: The Popular Theatre Approach in Africa**. Motala: Nordiska Afrika Institutet.

Moodliar, S. 2009. Personal Communications, 14 September 2009. Water Services, eThekwini Municipality.

Morse, J, Barrett, M, Mayan, M, Olsonik, K, and Spiers, J. 2002. Verification and validity in qualitative research, **International Journal of Qualitative Methods**, 1 (2), Spring 2002.

Moser, C. 1998. *The Asset Vulnerability Framework: Reassessing Urban Poverty Reduction Strategies*, **World Development***, 25(1):1-19.

Mudhara, M and Shoko, T. 2004. **A Handbook of PRA Techniques**. Training Manual developed for CRS, World Vision International and CARE, July 2004.

Niemeyer, S, Petts, J and Hobson, K. 2005. *Rapid climate change and society: assessing responses and thresholds*, **Risk Analysis***, 25:1443-1456.

O'Neill, C. 1996. *Into the Labyrinth: Theory and Research in Drama*, in Taylor, P. (ed) **Researching Drama and Arts Education: Paradigms and Possibilities**. Falmer: London.

Parry, M. L., T. R. Carter, and M. Hulme. 1996. What is a dangerous climate change?. *Global Environmental Change,* 6: 1–6.

Pfaff, B, Tooley, G, Govender, V. 2009. Personal Communications, 7 September 2009. Water Services, eThekwini Municipality.

Prentki, T. and Selman, J. 2000. **Popular Theatre in Political Culture: Britain and Canada in Focus**. Intellect Books: Portland, OR.

Preston, B, Abbs, D, Beveridge, B, Brooke, C, Gorddard, R, Hunt, G, Justus, M, Kinrade, P, Macadam, I, Measham, T, McInnes, K, Morrison, C, O'Grady, J, Smith, T, Withycombe, G. 2007. Spatial Approaches for Assessing Vulnerability and Consequences in Climate Change Assessments. Modelling and Simulation Society of Australia and New Zealand. Conference Paper.

Prowse, M and Scott, L. 2008. *Assets and Adaptation: An Emerging Debate,* **IDS Bulletin***, 39(4): 42-52.

Rahman, M. 1983. **Theory and Practice of Participatory Action Research**. WEP10/WP. ILO: Geneva.

Ravindranath, N and Sathaye, J. 2002. **Climate Change and Developing Countries**. Kluwer Academic Publishers, Netherlands.

Richmond, B. 2006. *Systems Thinking – Critical Thinking Skills for 1990's and Beyond*, **System Dynamics Review**, 9(2):113-133.

Roberts, D. 2008. *Thinking globally, acting locally – institutionalizing climate change at the local government level in Durban, South Africa,* **Environment and Urbanization**, 20(2):521-537.

Rotberg, F. 2009. Social networks and rural adaptation to climate change: a Bangladesh case study, Climate Change: Global Risks, Challenges and Decisions, IOP Conference Series: **Earth and Environmental Science**, 6:1-8.

Salhi, K. 1998. **African Theatre for Development: Art for Self-Determination**. Intellect Books: Exeter.

Schneider, SH, Kuntz-Duriseti, K and Azar, C. 2000. *Costing non-linearities, surprises, and irreversible events*, **Pacific-Asian Journal of Energy**, 10:81-106.

Schramm, W. 1964. **Mass Media and National Development**, Stanford University Press and UNESCO: Stanford.

Scoones, I. 1998. Sustainable Rural Livelihoods A Framework for Analysis, Available at: http://www.sarpn.org.za/documents/d0001493/P1833-Sustainable-rurallivelihoods_IDS-paper72.pdf]. [Accessed August 12, 2009].

Sen, AK. 1981. **Poverty and Famines: an Essay on Entitlement and Deprivation**. Clarendon: Oxford.

Skelton, D. 2000. *Real World "Messes": Possibilities for Teaching IT through a Soft Systems Viewpoint*. Eastern Institute of Technology, New Zealand, NACCQ. www.naccq.ac.nz. Accessed 12 July 2007.

Smit, B and Pilifosova, O. 2001. *Adaptation to Climate Change in the Context of Sustainable Development and Equity*. In: JJ McCarthy, OF Canziani, NA Leary, DJ Dokken, and K S White (eds.): **Climate Change 2001: Impacts, Adaptation and Vulnerability**. Cambridge: Cambridge University Press, Chapt. 18.

Smit, B, Burton, I, Klein, RJT and Wandel, J. 2000. *An anatomy of adaptation to climate change and variability*. **Climatic Change**, 45: 223–251.

Spitezok von Brisinski, M. 2003. *Rethinking Community Theatre: Performing arts communities in post-apartheid South Africa*. **South African Theatre Journal**, 17:114–127.

Stilwell, C, Leach, A and Burton, S (eds). 2001. **Knowledge, Information and Development: An African Perspective**. University of Natal: Pietermaritzburg.

Stockholm Environment Institute (SEI). 2009. *Risk and Vulnerability Programme – Poverty and Vulnerability*. www.vulnerabilitynet.org Accessed 17 February 2009.

Sullivan, C.A. Meigh J.R. and Acreman M.C. 2002. Scoping Study on the Identification of Hot Spots – Areas of high vulnerability to climatic variability and change identified using a Climate Vulnerability Index. Report to Dialogue on Water and Climate, CEH Wallingford, UK.

Sullivan, J and Parras, J. 2008. *Environmental Justice and Augusto Boal's Theatre of the Oppressed: A Unique Community Tool for Outreach, Communication, Education and Advocacy* in **Theory in Action**, 1(2). April 2008

Taylor, P. 2000. **The Classroom Drama: Action, Reflection, Transformation**. Routledge Falmer: London.

Thomas, D, Osbahr, H, Twyman, C, Adger, N, Hewitson, B. 2005. *Adaptations to climate change amongst natural resource-dependant societies in the developing world: across the Southern African climate gradient*. Tyndall Centre for Climate Change Research. Technical Report 35, November 2005.

Turner, B, Kasperson, R, Matson, P, McCarthy, J, Corell, R, Christensen, L, Eckley, N, Kasperson, J, Luers, A, Martello, M, Polsky, C, Pulsipher, A, Schiller, A. 2003. A framework for vulnerability analysis in sustainability science. Proceedings of the National Academy of Sciences of the United States of America, 100(14), 8074-8079.

United Nations Department of Humanitarian Affairs (UNDHA). 1993. *Internationally Agreed Glossary of Basic Terms related to Disaster Management.* DNA/93/36, United Nations Department of Humanitarian Affairs, Geneva, Switzerland.

United Nations Development Programme (UNDP). 1990. **Human Development Report**. United Nations Development Programme.

United Nations Development Programme (UNDP). 2009. **Human Development Report – Overcoming Barriers: Human Mobility and Development**. United Nations Development Programme.

United Nations Framework Convention on Climate Change (UNFCCC), 1992. http://unfccc.int/essential_background/convention/background/items/1353.php. Accessed 24 March 2009.

United States Agency for International Development (USAID). 2007. *Adapting to Cimate Variability and Change – A Guidance Manual for Development Planning.* August 2007, USAID.

University of the South Pacific (USP). 2008. "Youth encouraged to participate and use Theatre arts as a information medium" [Online]. Available: www.usp.ac.fj/news/story [2009, 25 February].

van Erven, E. 2001. **Community Theatre: Global Perspectives**. Routledge: London.

Walter, H. 2003. **Other Peoples Shoes**. Nick Hern Books: United Kingdom.

Wang, G and Dissanayake, W. 1982. *The Study of Indigenous Communication Systems in Development: Phased Out or Phased In?* in **Media Asia**, 9(1).

Watson, RT, Zinyoera, MC, and Moss, RH. 1996. *Climate Change 1995: Impacts, Adaptations and Mitigation of Climate Change: Scientific-Technical Analysis*. Contributions of the Working Group II to the Second Assessment Report of the Inter-governmental Panel on Climate Change. Cambridge: Cambridge University Press.

Watson, RT, Zinyoera, MC, and Moss, RH. 1998. **The Regional Impacts of Climate Change: An Assessment of Vulnerability. A Special Report of IPCC Working Group II**. Cambridge: Cambridge University Press.

Watts, MJ and Bohle, HG. 1993. The space of vulnerability: the causal structure of hunger and famine, *Progress in Human Geography,* 17: 43-67.

Wilkinson, C. 2007. "It's time to confront climate change on stage" [Online]. Available: www.guardian.co.uk/theatre [2009, 25 February].

Wilson, Z, Malakoana, M and Gounden, T. 2008. *Trusting Consumers: Involving Communities in Water Service Decision-Making in Durban, South Africa*, **Water SA**, 34(2):44.

Wilson, Z. 2008. **Assessment of Customer Satisfaction of FBW Ground Tank Service in Amaoti Informal Settlement, Section 1**. Draft report compiled with research assistance by Sandile Mbatha and Nhlanhla Ngema for the University of KwaZulu-Natal and the eThekwini Municipality.

Wisner, BG. 1978. An appeal for a significantly comparative method in disaster research, **Disasters***,* 2:80-82.

Yohe, G. and Tol, RSJ. 2002. Indicators for social and economic coping capacity - moving toward a working definition of adaptive capacity, **Global Environmental Change***,* 12: 25–40.

Zipplies, R. 2008. **Bending the Curve: Your guide to tackling climate change in South Africa**. Africa Geographic: Cape Town.

APPENDIX A

Household Survey and Results

House No/address/ Community: _____Interviewers name:_____

1. HOUSEHOLD INFORMATION							
How many members are in your household?							
Household member (Please answer for each household member below)	1 (head)	2	3	4	5	6	7
Age (yrs) (refer to key below)							
Highest level of education attained (refer to key)							
Gender							
Employment status (Please tick the relevant box for each household member)							
Self-employed	❏	❏	❏	❏	❏	❏	❏
Employee	❏	❏	❏	❏	❏	❏	❏
Pensioner	❏	❏	❏	❏	❏	❏	❏
Unemployed	❏	❏	❏	❏	❏	❏	❏
Scholar	❏	❏	❏	❏	❏	❏	❏
Infant	❏	❏	❏	❏	❏	❏	❏
How much is your monthly income? (refer to key below)							
Who is your employer?							
If you are not employed, do you receive a pension or social grant?	❏Yes ❏No	❏Yes ❏No	❏Yes ❏No	❏Yes ❏No	❏Yes ❏No	❏Yes ❏No	❏Yes ❏No
If yes, which do you receive?	❏Pension ❏Grant	❏Pension ❏Grant	❏Pension ❏Grant	❏Pension ❏Grant	❏Pension ❏Grant	❏Pension ❏Grant	❏Pension ❏Grant
Which grant (refer to key below)?							

Date: _____

Key: **income**: 0-800 = 1; 801-1200 = 2; 1201-5000 = 3; 5001 and more = 4   **Age**: <5yr=1; 5-12= 2; 13-18= 3; 19-35= 4, 35-60= 5, <60=6 **Grants**: Disability grant = 1; child grant = 2, health grant = 3
Education: no schooling = 1, primary school = 2, high school = 3; tertiary = 4

2. STAKEHOLDER INFORMATION

How long have you lived in Amaoti?	
Are there community leaders in Amaoti?	❑ Yes ❑ No ❑ I don't know
Who are these leaders?	
Do you think they are effective?	❑ Yes ❑ No
Do you know the Councilor for your area?	❑ Yes ❑ No
Do you think s/he is accessible?	❑ Yes ❑ No
Do you think the Municipality is involved in the community and addressing the needs of the people?	❑ Yes ❑ No Comments:
Do community members co-operate and work well together on community activities?	❑ Yes ❑ No

3. FOOD SECURITY

Do you produce your own food?	❑ Yes ❑ No
If yes, what kind of food do you produce?	
Have you noticed any of the following changes? If yes, mark the box with an X. ❑ Changes in the soil ❑ Changes in rainfall patterns ❑ Changes in the amount of produce ❑ Increase in diseases ❑ Increase in pests ❑ Increase in temperature <u>Comments:</u>	
Have you made any of the following changes to your food production? ❑ Changed planting season ❑ Changed crop variety ❑ Changed livestock **Other**:	
How have these changes impacted you? For example, there are improved yields?	

4. SOCIAL INFORMATION	
Do you belong to any social groups? If so, which ones?	
Where does your community group meet, how often and when?	
Do you think the community is united?	
Are you friendly to each other?	
What development would you most like to see in the community? Rank the following options 1 – 6, with 1 being the most important.	❑ Roads ❑ Communication services ❑ Water services ❑ Electricity ❑ Health and sanitation ❑ Education Comments:
How far away is nearest clinic/hospital?	
Is it easy to get to the clinic/ hospital?	
Are you happy with the service provided?	
How far away is the nearest school, crèches, or educational facility?	
Is it easy to get there?	
Are you happy with the service provided?	
Are you a part of a religious group?	❑ Yes ❑ No
What are the household interests?	❑ Sport ❑ Politics ❑ Music ❑ Drama Other:

5. WASTE AND WATER	
Do you have running water in your household?	❑ Yes ❑ No
If you do not have running water, where do you get your water from?	
Do you use the same water source for your drinking water and your household water?	❑ Yes ❑ No
Have you noticed any changes in the water supply or the condition of the water?	
Have you noticed any changes in your health because of your water?	
What type of toilet do you have?	❑ Flush ❑ Long-drop Other:
How do you dispose of your household waste?	
Has this changed over the past 5 years?	
Are there any waste disposal sites near your house?	❑ Yes ❑ No
Have you noticed any changes with the waste sites, e.g. increased size or smell?	
Have you noticed an increase in pests such as rats, flies or mosquitoes in your area?	❑ Yes ❑ No
If yes, has any action been taken against these pests?	

Comments and observations:

_____
_____
_____
_____
_____
_____
_____
_____
_____

6. INFRASTRUCTURAL INFORMATION	
Do you have electricity?	❏ Yes ❏ No
How is your electricity bill paid?	❏ Meter ❏ Prepaid
Do you have alternative/additional source of energy?	❏ Firewood ❏ Solar system
What kind of house do you live in? What is it made from?	
What kind of transport do you use?	❏ Taxi ❏ Bus ❏ Own car ❏ Other:
How often do you use it?	
On average, how much money do you spend on transport monthly?	❏ Less than R100 ❏ R101 – R250 ❏ R260 – R500 ❏ R501+

7. COMMUNICATION	
What communication devices do you have in your household?	❏ Radio ❏ TV Other:
Is anyone in the household interested in music, dance or drama?	
Has anyone been involved in any of these?	
Do you think using the drama is a good way to communicate?	

Comments and observations:

_____
_____
_____
_____

8. CHANGES IN THE ENVIRONMENT	
Have you noticed any weather changes over the last 5 years, e.g. rainfall, temperature, storms, etc?	
If yes, have these changes affected you in any way?	
What actions have you taken to reduce the effect that these changes have?	
Have you noticed any changes in the general environment (to the soil, trees, grass, etc)?	
Have you noticed any changes in the river or water sources?	
What impact would change in water patterns or sources have for you?	
What strategies can/do you put in place to protect yourself from these changes?	
Have droughts become more common in your area?	❑ Yes ❑ No ❑ I don't know Comment:
Have floods become more common in your area?	❑ Yes ❑ No ❑ I don't know Comment:
Has the severity of these droughts changed?	❑ Yes ❑ No ❑ I don't know
Has the severity of these floods changed?	❑ Yes ❑ No ❑ I don't know

Comments and observations:

_____
_____
_____
_____
_____

From the survey conducted with 250 people, the average number of members per household was 3.38. The modal members per household were 2, 3, and 4 members. The modal age group was 19-35 years (29.9%0 followed by 35-60 years (19.1%). There were more females than males per household i.e. 41.6% males and 58.4% females. The sample also indicated that 38.6% of the respondents had primary schooling and 39.3% had a high school education. The modal employment status was 28.7% scholar followed by 21.4% unemployed. 51.5% of the respondents earned R801-R1200 followed by 27% who earned R0-R800. 55.1% of the respondents received a pension or a social grant. Of those that did receive some kind of grant, 67.8% of the them received a social grant and 32.2% received a pension. The modal type of grant was the child grant (88.6%).

The average number of years respondents lived in Amaoti was 12.33 yrs. 98.8% of the respondents agreed that there are community leaders whilst 94.7% thought the community leaders were effective. A majority 99.2% of the respondents knew the councillor in the area whilst 92.6% thought that the councillor was accessible. 85.4% of the respondents agreed that the Municipality is involved in the community and addressing the needs of the people whilst 97.9% agreed that community members co-operate and work well together on community activities.

A modal 78% of the respondents disagreed that they produce their own food whilst the modal food that was produced was maize (20.2%). 25.5% and 20.8% have noticed Changes in rainfall patterns and Increase in temperature. As a result, 66.7% have made changes to their crop variety.

50.7% and 49.3% of the respondents stated "no" and "yes" to whether or not they belonged to any social groups. 94.5% though that the community is united whilst 91.8% of them thought that the community are friendly to each other. The modal development that the community would like to see was roads and communication services. 53.7% of the respondents felt that it was easy to get to the clinic/hospital and 49% of them are happy with the service provided. 51% disagreed with this. As far as the school/educational facility is concerned, 75.1% felt that it is easy to get there and 96.3% are happy with the services provided. 83.8% are members of a religious group and 33.3% and 26.5% of the respondents indicated music and sports as household interests. The average amount of time taken to get to a health institution/clinic and a educational institution/school is 60.99 minutes and 56.14 minutes.

A majority of 88.8% of the respondents do not have running water and 94.1% of the respondents used the same source for their drinking water and household water. 69.1% of the respondents have not noticed any changes in the water supply or the condition of the water. 73.7% have not noticed any changes in your health because of your water. 86.7% of the respondents have a long drop toilet and 57% indicated that this has not changed in the last 5 years. 52.5% indicated that there are waste disposal sites near their houses and 54.8% have noticed changes with the waste sites. 63.7% have noticed an increase in pests such as rats, flies or mosquitoes in their area. Only 52.4% agreed that action has been taken against these pests.

A vast 84.8% of the respondents indicated that they do have electricity and 98.5% pay their electricity bill through the prepaid system. The only alternative/additional source of energy was firewood (98.7%). The modal type of transport was taxi (61.4%) followed by bus (33.7%). The average monthly transport cost was "<R100" (42.7%) followed by "R101-R250" (27.2%).

The modal communication devices that respondents have in their household was radio (67.9%) followed by TV(32.1%). 74.1% of the respondents are interested in music, dance or drama whilst 44.3% have been involved in these areas. 82.7% of the respondents felt that the drama is a good way to communicate.

A majority of 82.7% of the sample have noticed any weather changes over the last 5 years, e.g. rainfall, temperature, storms, etc. and 75.5% of the respondents felt that these changes have affected them in some way. Only 40.2% have noticed changes in the general environment (to the soil, trees, grass, etc) and 32.9% have noticed changes in the river or water sources. 41.1% felt that droughts had become more common in their area and 55.8% felt that floods have become more common their area. 55.4% felt that the severity of the droughts had not changed whilst 48.3% felt that the severity of the floods had not changed.

APPENDIX B

Focus Group Discussion Tables

	Community Health Workers	Community Policing Forum	Lungisani indlela Christian Organisation	Paralegal Group	Sibanisezwe Youth Development
Group description	• 21 members • Started in 1987 • Provide basic education • Care for the sick in the community	• 15 members • Keep the community safe	• Supports Amaoti community • Operates under Amaoti Community Church • Teenage empowerment • Training and care centre • Family and child support • Help the poor • Sponsors soccer	• 3 members • Provide legal advice to community members	• 21 members • Focus on youth empowerment
Social networks	• Local clinic	• ANC councillor • ANC • ANC Youth League • ANC Women's League	• Schools • Community Church • Durban companies and residents	• Legal Aid Board • Department of Social Development • SAPS • Civic Office • University of KwaZulu-Natal • eThekwini Municipality • CCMA • Department of Labour • Amaoti community	• Department of Labour • Christian organisation • Amaoti Revival Soccer Association • TAFTA • Councillor • Amaoti community
Income	• No income	• No income	• Sponsors	• No income	• No income
Water and Climate change	• They have noticed extreme temperatures • Tank water is contaminated	• Water from tanks is contaminated	• Water quantity is decreasing becoming more scarce	• Water scarcity • Contaminations of tank water	• Illegal connections • Water tanks created conflicts within the community
Challenges	• Not trained • Lack of equipment	• High crime rate	• Increase in the number of vulnerable people	• Lack of resources	• Lack of communication with Councillor • Crime

	ANC Women's League	Sakhisizwe Organisation	Amaoti Revival Soccer Association	Echibini Church	Sigcawu Committee
Group description	• 15 members • Women empowerment	• Music • Dance • Drama • Registered in 2004	• Soccer association	• Help the sick	
Social networks	• Councillor • ANC • ANC youth League	• Department of Arts and culture • Neighbouring communities	• Youth • Lungisani indlela Christian organisation • Councillor	• Community	Amaoti clinic
Income	• No income	• Department of Arts and Culture	• No income	• Spaza shops • Donations from the church • Money from patients	Sale of vegetables, clothing Spaza shops Hairdressers Government grants
Water and climate change	• Unhappy about water tanks • Water not safe		• Floods	• Piped water	
Challenges	• Lack of cooperation amongst members	• Lack of community participation • Electricity cuts disrupts practices	• Roads get eroded	• Overcharge for water by municipality	HIV/AIDS and TB

APPENDIX C
Rich Pictures
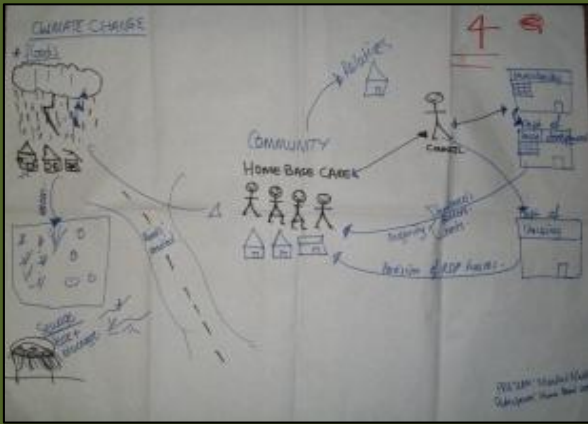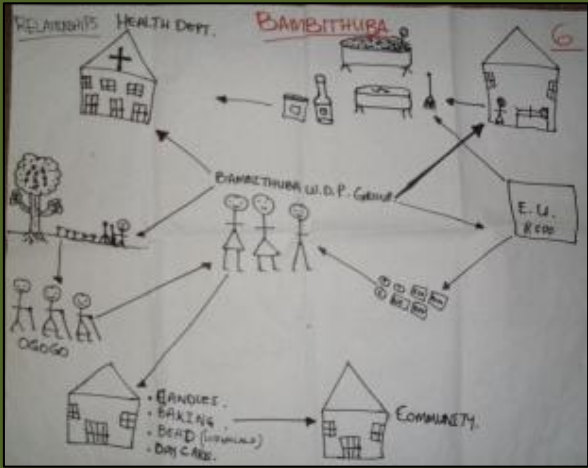
APPENDIX D
Coded Household Interviews

#	Water Access — Type: Inhouse Tap	Standpipe	Tank	Other	Volume: Plenty	Scarce	Quality: Good	Poor	Water Tank: Safe	Contaminated	Comments	Toilet: Flush	Long Drop	Other	Clinic: Near	Far	Issues: Poor Service	Medicine	Other	Diseases: Diarrhoea	HIV/AIDS	TB	Malaria	Bilharzia	Other	Heavy rain	Increase in floods	Increase in storms	Comment	Responses	Crime: Low	High	Unemployed	Farming: Space	No space	Comm. Rel.: Strong	Poor	Comments
1		1						1					1						Poor service	1						1			Water flows into house			1						
2			1													1						1	1		Malnutrition	1	1											1
3				River		1					Tanks not used; long distance to water			1													1		Damaged buildings			1			1			Youth apathy
4				Illegal connections							Water is wasted, drums don't provide enough		1													1									1			1
5		1										1																										
6																1			No ambulance									1	Loss of life						1		1	
7			Neighbours																																	1	1	
8				1							Go to Phoenix		1																							1		
9	1											1									1	1																
10	1											1									1		1												1			
11			Neighbours																No sewage			1	1												1			
12													1									1						1	Damaged buildings								1	Graves in house
13				Neighbour, standpipe is far											1	1					1	1		1											1			
14																										1	1	1								1		
15			1					1					1									1			Plenty mosquitos	1	1										1	
16		1						1					1							1	1						1											
17	1							1					1			1									Mosquitos		1	Damaged buildings									
18		1					1					1														1	1							1				
19	1											1														1							1			1		
20			Neighbour								Tadpoles, bugs, snails		1						Neighbours child uses toilet		1	1				1												
21																														Use rainwater harvester			1					
22		1																								1			Damaged buildings							1	1	
23		1						1			1 tap supplies whole settlement		Rent toilet or use bush				1									1								1				
24													1													1			Damages house						1			
Totals	4	7	2	6	0	6	3	2	0	3	0	2	12	0	1	3	1	0	5	7	6	0	1	0	11	11	5	0	0	0	7	6	9	4	6	3	0

APPENDIX E
Fish Out of Water

FISH OUT OF WATER

A Play in One Act by Louise Anne Buchler and Kiara Worth

Performed by the Sakhisizwe Drama Group, Amaoti, 2009

The scene opens with the narrators who direct their speeches to the audience. In the background is a tableau of women gathered around a standpipe – some washing clothes – others waiting in a queue, some just sitting – there are also images of the community – men playing games (cards, etc.). General scenes you would expect on an ordinary day in Amaoti.

Narrator:

KwaSuka Sukela *(once upon a time)* there existed a community – not unlike any other community – in fact much the same. This community was called Amaoti and was close to Durban – the city of plenty…

The story is interrupted by one of the ladies in the tableau who laughing exclaims sarcastically

Lady:

Yebo! Plenty crime, plenty unemployment, Plenty! Huh! Suka wena!

Narrator:

(Irritated) Are you telling the story? Ssshh! *(She gives her a filthy look before returning to her position.)* Anyway, what I was saying before I was so rudely interrupted is that Amaoti was no different to any other community in South Africa. It was made up of the same types of people you would expect to find anywhere else. Let me show you – (*As she says this the tableaus come to life – moving and chatting)* Here we have the Madondo sisters – Alicia, Miriam and Thandeka…

Narrator 2:

or as Sipho down at the shebeen likes to call them "the Witches of Amaoti" – none of them have ever been married, so they all live together in Sigcau, finding odd jobs to make their way through life. Every day they come to collect water at the standpipe, along with many other people…

Thandeka:

Kuyashisa kakhulu! Likhipa inhlanzi emanzini! *(It is so hot it takes the fish right out of the water!)*

Miriam:

Water? What water? Every day we come here, stand in this queue for over an hour while people do their laundry, wash their hair. By the time we get to the front there's either no water, or it's so murky that you wouldn't want to use it anyway!

Alicia:

Well, I'd rather stand here and get what I can then use those water tanks down the road. Do you know, Sipho told me that his neighbor was sick for three days after drinking that water.

Thandeka:

Sipho…?

Alicia:

It's not what you think. He came into the shop the today to get some materials for his house – he told me that his roof blew off in the storm yesterday and his house is completely flooded.

Miriam:

You know, you just can't win. Either there's no water to drink at all, or there's so much water that it destroys everything. I just don't get it. It's so extreme. You'd think there was way of balancing it out.

Thandeka:

Well, I don't know. *(To Alicia)* But it's nice to see that you've forgiven Sipho…

Alicia:

I have not forgiven him! Hau hau hau – the shame! Can you think of anything more embarrassing? First he asks me to marry him and then he tells me he made a terrible mistake – that he was drunk and not conscious and that I tried to force him to marry me! I mean really – do I look like the type of woman who would be so desperate as to pull a stunt like that! Huh! That Sipho Ngcobo must watch his back – making a fool out of me.

Miriam:

Please Alicia, there are plenty more fish in the sea – and quite honestly we are tired of this story. Everyday the same – everyday you go on and on about Sipho. It is too hot and I am too tired to listen any more. Start pumping, let's see if there's any water. (*They mime pumping water from the pipe as Thandeka stares up at the sky squinting and wiping sweat from her brow*)

Thandeka:

(She spots someone approaching and looks panicked) Quickly Alicia – quickly – it is Mrs. Mtolo and you know how she likes to go on and on and on. Last time she trapped me for almost an hour – quickly pump faster (*Alicia frantically and comically begins pumping the water only to have it run out as Mrs. Mtolo arrives*)

Alicia, Miriam and Thandeka:

Good morning Mrs. Mtolo! How are you today! You look lovely as ever.

Mrs. Mtolo:

(She shuffles past them with her bucket uncharacteristically quiet – as if she is troubled and the weight of the world is on her shoulders. The sisters watch her surprised that the community chatterbox is so silent. Suddenly she begins to weep softly at first then growing louder – her body wracked with the sobbing. The sisters gather around her.)

Thandeka:

Hau – Mrs. Mtolo –what is the matter? Why are you crying? Just now your tears will make a flood and wash us all away and then what will we do?

There is no response. Mrs. Mtolo continues to sob Thandeka pushes a reluctant Miriam forward to try to comfort the weeping woman

Miriam:

Ma, please speak to us. What has upset you? Please speak to us!

Mrs. Mtolo:

I hate it here. We are being punished – everyday we must suffer. My daughter Tolo is so sick – she always gets sick when the rain comes, her temperature is very high and her tummy is upset all the time – I am so scared she is going to die. There's not even a proper toilet for her and I can't afford to pay 50 cents every time to use those communal ones. I tried to get her to the clinic but she is too weak and so I walked there myself to get her medicine and on the way I was robbed by three boys – I have no money and no medicine and soon it will rain again and where will we go? I can't carry everything.

Alicia:

What about your husband Mrs. Mtolo?

Mrs. Mtolo:

That rubbish? He is never home – always at the shebeen drinking and drinking – he doesn't care about us. I have resorted to hiding money from him – just so that we can buy a little food – otherwise he drinks it all! And then these scabengas steal from me – and Tola is so sick and she is getting worse. It is the water – it is cursed – it will poison us all.

Thandeka:

Please Mrs. Mtolo – don't speak like that. It will get better. The good Lord will provide for us – he always does. We just need to have faith.

Mrs. Mtolo dries her eyes and gets up

Mrs. Mtolo:

Faith in what? When I was a child things were not like this. The seasons were the seasons – the rains nourished the land and the sun made things grow, that is how we survived! We didn't have storms that destroyed our homes and water that poisoned our children. I used to pray for some explanation for all these changes, I prayed for help when things started to get bad, but no one is listening to us – no one cares. (*She begins to walk away – exits stage left*)

Miriam:

(*Noticing that Mrs. Mtolo has left her bucket*) Mrs. Mtolo – your bucket – you left it – Mrs. Mtolo! (*She runs out after her. Thandeka and Alicia gather their buckets and shrug their shoulders*)

Alicia:

Do you think she is right Thandeka? Do you think God has forgotten us?

Thandeka:

(*Shaking her head*) No Alicia, we are being tested with the rain and the heat – but our reward is in heaven. Come now – let's get home – it's going to rain. (*The sisters exit to the market*)

The narrators watch them exit then turn back to the audience.

Narrator:

Life is hard for most in Amaoti – and it doesn't help with such bad weather. One day it is so hot and the sun beats down on our corrugated iron roofs and it is like we are being roasted alive. Then suddenly the rain - that comes for days on end and floods and we have to move until the sun returns and dries it all up again.

Narrator 2:

And then there are days when there is no water to wash or to bathe – and we are thirsty and hot and the standpipe is empty and then we wish for rain – just a little. But, despite this, Amaoti is a regular place with regular people all trying to make a living.

(The scene that ensues is an improvised one, where the group becomes various traders and vendors selling their wares – we also have the usual tsotsi types perhaps selling drugs or stolen merchandise. The scene makes use of the other members of the group who til now have been frozen in tableaus).

Narrator 2:

Like any other community you have the usual suspects: Mrs. Moloi and her flame-roasted mielies – with a secret spice she got from Trevor from Mozambique.

Narrator:

Then there are the Moyo brothers from Zimbabwe who sell wood sculptures at a stall in Smith Street.

Narrator 2:

There is the local drunk – Mr. Maphisa who tells everyone that he once wrestled open the jaws of a crocodile to save his niece from being eaten – what doesn't make sense it that Mr. Maphisa was born in Egoli's city centre and until coming to Durban had never so much as seen a frog!

Narrator:

There is Mama Sekeleni who looks after 8 orphaned children and often goes hungry herself so that they may be fed, and then there are the prostitutes who frequent Sipho's shebeen. Days are usually the same; the same business, the same people, the same trading of strange weather stories, until one day an unexpected visitor arrives back in the community…

Cedric Fish:

Sawubona mama. One mielie cob please, I want to see if they still taste as good as when I was a boy.

Mrs. Moloi:

Hau! Cedric! Is that you? My boy! You've come home! And look at you… an educated man from university! Hau, your gogo has told me everything! We are so proud of you! She will be so happy to know you are home… Eish, you know things are tough these days, we need strong men at home to help us…

Cedric Fish:

Actually Mrs. Moloi, I'm here for work. I'm going to be doing some research in Amaoti for my degree – they call it a research project. I just arrived now and I'll be here for a few weeks.

Mrs. Moloi:

Research? Sho, who's the clever boy, eh? Well, however long you are here, I know your gogo will be happy to see you. You must go to her now. Here, take these mielies – a welcome home present for our son!

Cedric Fish:

Thank you, Mrs. Moloi. I appreciate the gift, I know times are tough. That's why I'm here. It's good to be home. I'll see you later…

(Cedric starts to walk off. During the scene, a small gang of boys has been watching Cedric, clearly remembering him from some time in the past. They stop him as he begins to walk past).

Sbu:

Well, well, well. If it isn't Cedric Fish, the boy who thought he was too good for this place and ran off to the city to live the rich life.

Cedric:

Hello Sbu. It's been a long time. You look well.

Sbu:

Huh! *(Sarcastically)* How nice of you to say so. What are you doing here, Fish? Did the city get too much for you? Did they realize you were just another boy from the township and send you back?

Cedric:

Actually, I'm here on work. I'm involved with environmental projects through my university and we're trying to find a way to deal with these storms. I hear they've been bad lately…

Sbu:

You *hear*? Oh, how good of you to listen to the hardships of Amaoti! You hear stories in your fancy university while we're out here dealing with it - the storms, the sick people, the broken houses. That's your problem Fish – you always thought that you were better than us. You think you can just come back here, having betrayed us, and fix all the problems we got? Who do you think you are, hey?

Cedric:

It's not like that, Sbu. I didn't betray you or reject Amaoti; I went away because I had the chance to make something of my life. I'm not pretending to be able to fix everything here, I'm just trying to see what could help the community.

Sbu:

Well, we'll see. Times have changed since you were last here. People might not be as forgiving as they once were. Watch your back.

Narrator:

As we said before – Amaoti has its fair share of problems – but what it lacks in wealth, health and drinking water it makes up for in faith. So it was on this particular day that Albert 'Goodwill' Nthuli ran into the market excitedly and called for everyone's…

(The riffraff sulk off to another stall. Cedric is about to leave but sees Albert standing on a beer crate and turns to listen)

Albert:

Attention Everyone! Attention! (*his voice is very soft and no-one even hears him over the general noise – he tries again to draw their attention before shouting at the top of his lungs – everyone stops what they are doing and gather around him – he continues*) Reverend Hlopa has sent an important message – there is to be a music competition! All musicians are to write an original song about the changes in the weather and in one week's time perform it for a panel of judges at St Joseph's Church! We will be competing against people from Ntuzuma and KwaMashu. The person who comes up with the best song will perform at the opening ceremony of the FIFA World Cup in 2010 and receive free tickets to watch the game!

(Eruption of joyous cheers. There is immediate chatter among the crowd)

Crowd 1:

A song about the weather? Why? What does that have to do with FIFA?

Albert:

I'm not entirely sure, but it says here that Durban is the only city in the whole country to go "carbon neutral" for the event! I don't know what that is, but it must be something good! They left us these pamphlets to explain it more. Everyone is to have one and read about it. Here, pass them around…

Crowd 1:

It says here… climate change? I've never heard of this before. What are they talking about?

Cedric:

Excuse me, Mr. Nthuli, but I think I can help. Friends, my name is Cedric Fish. I was born here in Amaoti and I have been studying at the university in Durban. I have been working with the eThekwini Municipality doing some research on the strange weather we have seen, the big storms, the water shortages. This is the result of this thing called climate change. It is something that the whole world is experiencing. Scientists are finding that there has been a rise in temperature and that this is changing all the weather patterns. It is a very serious thing – they believe that there will be even bigger changes in the future, and these changes will bring disease and hardship for our people. That is why they are asking for our help.

Crowd 2:

Our help? What is this? If the weather is changing, there is nothing that we can do! We can barely support ourselves now, and we are expected to deal with this? Suka!

Sbu:

The madala is right. Why should we believe you? You who left Amaoti when you could've stayed to help!

Cedric:

Friends, I know this is difficult to believe, but you must. These storms are going to get worse and we need to protect ourselves against them. There are many things we can do. I am here to teach you about rainwater harvesters, it's a system that we can use to catch the rain during the storms and save it for when there is none.

Sbu:

Ha ha! Now you want to poison us! Don't you know what happened with the water tanks they brought last time? Poisoned! I found a dead frog in the tank once and Mr. Ramaphosa has been sick for days!

Cedric:

No, this is different. I know about those tanks and that is not what I am suggesting. The Municipality is trying to equip us with ways to protect ourselves. I am going to build a rainwater harvester and show you all how it works. You will see…

(During this time Miriam, has been listening intently)

Miriam:

What does this have to do with the music competition?

Cedric:

(Cedric stares at Miriam, remembering her from the past. He says quietly) Miriam?

Miriam:

I said, what does this have to do with the competition?

Cedric:

Uh, well… this competition is about how communities can deal with this thing called climate change. What they can do to make themselves stronger. They want you to work together to find ways of dealing with these challenges, and then to sing about it.

Albert:

*(A bit flustered having lost the focus of attention, he regains control of the competition, clears his throat)*Yes, well, it says here that there will be a meeting tonight, 17:00 at St Josephs to discuss it further. But in the mean time, people must prepare their music for the competition! Anyone can enter! One song! FIFA! Eh heh. *(Caught up in his own excitement starts to run off)* Thandeka! You must help me write a song…

The crowd disperses, there is loud chatter.

It is the next day. The scene changes to outside Cedric's house where he is busy building a rainwater harvester. Miriam approaches him.

Miriam:

Hello Cedric.

Cedric:

Miriam! Hello, it's been a long time.

Miriam:

It has. There is much to catch up on. I was listening to what you were saying in the market yesterday and at the church last night, about climate change. Do you really think there's a way that we can stop what's happening with these storms and the water?

Cedric:

Stop? No. But this community is strong - we can learn to deal with it, you know, come up with systems so that the impact won't be so great. That's what I'm trying to do with this rainwater harvester.

Miriam:

How does it work?

Cedric:

Well, it's pretty simple actually. One of the problems is not enough water. But at the same time, we're surrounded by water. So, we need a way to catch the water and save it. You connect this to the gutter of your house, the water runs through and collects in this tank, and then you can use the water around the house. The best is to start a small vegetable garden and use this to water it. That way you can grow extra food and save water.

Miriam:

It's so simple. I knew there was a way of balancing it out. But you know it's going to be difficult to convince everyone about this.

Cedric:

You're right, I can see that already. The thing is, difficulties are only overcome when people work together. If we want to change things in Amaoti then we need to support and help each other. We need to build trust.

Miriam:

So what are you going to do with this rainwater harvester?

Cedric:

I need to build it and test it out. I need to make sure that people can build them in their own houses. If everyone has their own little system of water, then there will be less stress at the standpipe.

Miriam:

You say it hooks up to a gutter? That wouldn't work at my house, we barely have a roof never mind a gutter! In Sigcau, you build your house out of what you can.

Cedric:

That's another problem. All the houses in Sigcau flood regularly, right? *(She nods)* That's because they're located in what's called a floodplain. It's where all the runoff water gathers. The best would be to move all those houses to safer ground, but in the meantime we're trying to figure out what we can do to help with the water problem.

Miriam:

Well, I support you Cedric. I think it's about time that we started working towards something positive in this community.

Cedric:

Thanks Miriam.

(They part – Miriam exits – the parting is awkward and flirtatious – it is apparent they fancy one another. Just then Sbu and his cronies appear looking smug)

Sbu:

I see what you're trying to do, Fish. It'll never work.

Cedric:

Sbu. The only thing I'm trying to do is help the people of this community by…

Sbu:

You're not trying to help! You're just trying to change things because you have no respect for the way we do things around here. Life is what it is. Nothing you do can ever change that.

Cedric:

People are suffering, Sbu. Things have to change. We have to find a way to make things better.

Sbu:

Better? With some piece of plastic and a song? You're a joke! We'll see how far you get.

At this point the scene shifts to St Josephs with Reverend Hlopa welcoming his flock to the competition.

Reverend Hlopa

Friends – it brings me great joy to welcome you to this competition and to the selection of one artist who will proudly represent Amaoti at the FIFA World Cup celebrations! I look forward to hearing you sing! *(Everyone applauds and what follows is the audition narrated by the narrator.)*

Narrator 2:

What followed was some of the worst singing Amaoti had ever encountered. Mrs. Khumalo's voice was so high pitched it had been known to break glasses, Mr. Maphisa was so drunk and off key that people blocked their ears, and Mrs. Dlamini's voice was so terrible that Sipho said:

Sipho:

The cats outside my shebeen sing better than that!

Narrator:

One by one the hopeful competitors took to the small church podium to belt out their tune and as the afternoon progressed everyone became more and more discouraged by the lack of talent and the terrible heat.

Narrator 2:

The crowd began to speak noisily and Cedric, who had been watching the auditions from the back approached Reverend Hlopa with a proposal while the clouds outside grew dark and full.

Cedric Fish:

(Clearing his throat) Forgive me reverend – I was passing through and happened to hear your auditions. May I introduce myself? I am Cedric Fish and I believe I can be of assistance. I would like to try have them sing together.

Reverend Hlopa:

(Wearily) Go home young man, it is of no use. There is no talent to be found in Amaoti – everyone sounded so terrible singing on their own – they will sound even worse together. Besides the rains have come early and soon the flood plain will wash everything away – and the people will more important things to deal with than some silly competition.

Cedric Fish:

Forgive my presumption Reverend – but you cannot cancel the competition – it is my experience that in times like these people need a distraction. They need hope – in much the same way we need water and sunshine to survive. Let me work with your community – I would like to conduct a choir if you will let me. Please.

Reverend Hlopa:

Alright Mr. Fish. I will give you one week with them – if you can get them to sound anything like a choir, I will not cancel the competition. But be warned – you have your work cut out for you.

Narrator:

As if on cue – the heavens opened and the thunder clapped and the rain began to fall hard. It was a storm like they had never seen before!

Narrator 2:

They tried to open the door but the wind was too strong and what lay outside was terrifying. The people rushed to the centre of the church, screaming. Suddenly the windows broke and a flood of water gushed in, washing people aside. Amidst the noise, Cedric tried to speak…

Cedric:

Everyone! Try to stay calm! We need to work together…

Sbu:

Shut up! This is your fault! Your cursed competition brought this on us!

Cedric:

No! It's not true. But whatever the reason, we have to work together to get out of this alive! Mrs. Mtolo, grab my hand! Everyone, we have to get to higher ground! Grab your belongings quickly and form a chain leading to the back door… Quickly!

Narrator:

Cedric fought against the water, helping people to grab their belongings, joining hands for strength and getting people to work together. Soon a chain formed and people were working together to make sure that everyone made it to safer ground. Only Sbu refused to join the chain, struggling to get to the door…

Miriam:

Thankdeka, quickly hold onto my arm – we need to get out of here.

Mr. Maphisa:

The roof is blowing off! We are going to die!

Sipho:

Mr. Maphisa calm down – I will give you a free shot of Bells when we get out of here!

Narrator 2:

Just then there was a tremendous crash at the front of the church – the wind and rain combined had blown down the heavy wooden doors and beneath them a lonely figure was screaming for help!

Sbu:

Help me! Please someone help me! My leg is trapped and I can't get out! Help!

Narrator:

Without a moment's hesitation Cedric rushed to help the trapped Sbu – with tremendous strength and courage he pulled him from the wreckage and carried him to safety.

(The scene just described is acted out in slow motion comically – the rescued Sbu emerges held in Cedric's arms like a baby and crying like one too!)

Felicia Mbuza Unsubtle:

And in local news Amaoti has made headlines in the media this week. With terrible storms – the result of climate change - homes and roads have been destroyed. The local church was damaged and Mr Sbu Mzimang was rescued by the courageous Cedric Fish who pulled him out from under a collapsed door. Residents of Amaoti are upset but are putting together plans to prevent such a disaster from happening again. Here we have Cedric Fish – a man with a plan. Welcome Mr. Fish – could you please tell us more about what is going on here today?

Cedric:

Thanks Felicia. As you can see Amaoti has fallen victim to the weather. Using my training I am – with the help of this community putting into action a plan to help residents and to prevent this from occurring again.

Felicia:

Could you tell me a bit more about how you plan to help?

Cedric:

Well, we are working with the Municipality to develop an emergency plan, so that when these floods happen, people know where to go and what to do. We need to have a place where people can take their belongings, and know that they will be safe. We are working out the details of this with the Councillor and we will have a plan soon. We are also trying to make sure more people have water – that's why I've been building this rainwater harvester. There are still a few things that I need to sort out, but once I do, it'll help a lot…

(Just before the camera is about to stop rolling Sbu comes hobbling along towards the camera crew)

Sbu:

Wait! Please Felicia Wait!

Felicia:

(Looking flustered) We seem to have a resident longing to talk to us – come friend – what do you have to say?

Sbu:

Hau hau hau Felicia – this is a proud day in our community and we owe it all to this man. Cedric – I am sorry for the words I said – if it wasn't for you I would have died in that church. I see now that you have come to help us because you care about this community and you have not forgotten your roots. Thank you my friend. Thank you.

(In the background the crowd who have stopped to watch Sbu break into loud applause and cheering! Felicia and camera man exit to join the community)

Reverend Hlopa:

Mr. Fish, I really appreciate what you are doing for us but I thought you were here to help with the choir. How is this helping to get a song and a choir together in time for the competition?

Mr. Fish:

Oh but I am helping, Reverend. This is all part of the plan.

As if on cue the voice of Miriam carries across the stage as she begins to sing a song – soon everyone joins her working as they sing. The voices are melodious and work well together. Reverend Hlopa is gob smacked.

Cedric beams at Miriam and she smiles at him.

Narrator:

Soon the big day of the competition was upon them and everyone gathered in their Sunday best to compete against some of the best singers in the INK area.

Narrator 2:

The Church was packed to capacity and despite the rain outside everyone was happy and excited. Even Mrs. Mtolo had returned and sat alongside the Madondo sisters. And then finally the Amaoti choir took to the stage as Reverend Hlopa said a quiet prayer to the heavens.

Narrator:

Mr. Fish did not look worried at all – in fact he had a huge smile on his face. The crowd sat on the edge of their seats as Miriam led the choir to the podium. They had rehearsed all night and were ready to perform…

Miriam begins the song and the others follow – the sound produced is melodic and beautiful – full of melody and harmony in perfect balance. Rival competitors mime expressions of disappointment – realizing that they have been beaten. Reverend Hlopa – jumps up and joins them enthusiastically waving his hands to the heaven;s clearly a miracle has occurred.

After the song Reverend Hlopha takes to the podium as everyone is seated to present the results of the competition.

Reverend Hlopha:

(With much enthusiasm) Hau! Praise be to God! What rousing performances today – particularly from the Amaoti choir, under the guidance of Mr. Fish. They have performed a miracle! Congratulations to all of you. I now call Mr. Magidigidi to the stage to announce the winners of our competition.

Mr. Magidigidi:

Thank you Reverend and thank you all. Until a few moments ago I was uncertain as to who should win as you were all so good – but then the Amaoti Choir sang. Never before have I heard such amazing voices and what a beautiful song. Congratulations Amaoti you are the winners - you have written a brilliant song and you have shown us the power of working together!

Loud cheering and applause and fading to silence and slow motion as Miriam and Mr. Fish meet centre Stage.

Cedric:

My lovely Miriam, thank you for your help

Miriam:

I have watched you Cedric working with all the people in this community. I have seen how your ideas have brought unity and purpose to our lives. We do not have much here but we have hope and now because of you we have choice. Before the rain just meant problems but instead of just accepting it you brought us these ideas and taught us that together anything is possible. I knew there was a way forward – I just did not know how. Oh and Cedric…

Cedric:

Yes Miriam?

Miriam:

I love you. I always have. Ever since we were at school together.

Cedric:

To tell the truth – I feel the same way Miriam. Climate change was not the only purpose for my visit! Can I take you out sometime?

Miriam:

I would love that! Yes! (*They embrace*)

Reverend Hlopa:

Congratulations Mr. Fish – you were a success in the end – but tell me how did you do it?

Mr. Fish:

Reverend, I too grew up in this community. I have seen how the weather patterns grow worse every year and how people suffered. When people live with poverty and hopelessness, bad things happen. We are like fish out of water – struggling to survive. Then I thought, what if we worked WITH the weather and each other? Just like the choir – when people sang alone it sounded terrible, but together they created the most beautiful music.

Narrator:

And so that brings me to the end of the story but not the end of Amaoti. The community continued to work together and came up with more ideas and more plans to help each other. Life improved and people were a lot happier.

Narrator 2:

People even started growing their own food and enjoyed a delicious feast of vegetables! Bridges of distrust were rebuilt in this spirit of community. Now if you will please excuse us – we are off to the kick off for the 2010 Soccer world cup. LA DUMA! (*The narrators exit and Alicia, Miriam and Thandeka enter*)

Alicia:

Eish! I am so in love! Sipho is such a darling. Do you know last night he said that he is going to start saving for my lobola!

Miriam:

(Laughing) It will probably take him fifty years!

Alicia:

You will be laughing the other side of your face if Cedric were to do that to you! I am so happy for you my sister – maybe we can have a double wedding! Double the guests, double the food, double the fun!

Miriam:

Calm down Alicia! We have only been on one date! No one is talking about marriage yet!

They suddenly notice Thandeka who is looking at the heavens – unlike our first encounter with her she looks peaceful and expectant – happy even.

Alicia:

Hau Thandeka! Don't feel left out – your sisters will find you a nice husband. I hear Mr. Maphisa is on the market! *(Both Miriam and Alicia cackle with laughter but Thandeka is quiet as if she has not even heard them)* Why are you looking like that? Hau Thandeka you must know we are joking…

Thandeka:

Let's rejoice sisters…it's going to rain soon.

Musical interlude

THE END

APPENDIX F
Audience Questionnaire

We are trying to determine what you think about the use of theatre in climate change communication, with particular reference to the community theatre piece *'Fish Out of Water'*. Please share your thoughts with us by answering the questions below and on the back of the page.

Thank you for your input!

1. **Did you enjoy the play? What was your favourite part?**

    _____
    _____
    _____
    _____

2. **Who was your favourite character and why?**

    _____
    _____
    _____

3. **If you were in the play, which character would you like to be and why?**

    _____
    _____
    _____

4. **Do you think the play shows what is happening in real life?**

    _____
    _____

5. **What is the play about?**

    _____
    _____
    _____

6. **Have you heard of climate change before?**

    _____

7. **How would you explain climate change, based on what Cedric has said in the play?**

    _____
    _____
    _____

8. **What are some of the impacts or challenges of climate change that Cedric mentions?**

    _____

_____

_____

9.   **What does Cedric encourage the community to do in order to overcome these challenges?**

_____

_____

_____

10.   **What does Cedric try to put in place to help the community?**

_____

_____

_____

11.   **Do you think you have learnt something from this play and if so, what?**

_____

_____

_____

12.   **Do you think this play was a good way of discussing climate change?**

_____

_____

APPENDIX G

Performer Questionnaire

1.   **What is the play about?**

_____
_____
_____

2.   **Had you heard of climate change before you became part of the play?**

_____

3.   **How would you explain what climate change is?**

_____

_____
_____

4.   **What are some of the impacts or challenges of climate change that the play discusses?**

_____
_____
_____

5.   **Do you think the play shows what is happening in real life?**

_____
_____

6.   **Do you think others will learn from this play? What do you think will make it easy for to them learn?**

_____
_____
_____
_____

7.   **What part of the play do you think the audience will like the best?**

_____
_____
_____

8.   **Do you think that drama was a good way to learn about climate change?**

_____
_____

_____

9. **Did you enjoy the rehearsal process? What was your favourite part?**

_____
_____
_____

10. **What was your worst part about the rehearsal process?**

_____
_____
_____

11. **What have you learned about yourself during this process?**

_____
_____
_____

12. **Has the play changed the way you think about the community and your role in it? How? Why?**

_____
_____
_____
_____

APPENDIX H

International Climate Action Day programme

Performing for Change

Inspiring Climate Change Action

This December, the world's leaders will meet in Copenhagen for the UN Climate Change talks. In preparation for these talks, people around the world are joining forces to take a stand against carbon emissions and ensure that the treaties signed reflect the interests of people suffering the most. In support of this, eThekwini Municipality, Golder Associates, WESSA, Wildlands Conservation Trust, Eco-Schools, the Climate Action Partnership and On the Edge Enviro-Theatre Co. have joined forces to bring you a day of theatre and entertainment as we do our bit to celebrate International Climate Action Day.

Saturday, 24 October 2009

14:00, Durban Botanical Gardens

Take a stand against Climate Change – join us for a day of entertainment and learning through the performing arts!

Featuring: local community and school performances with a special guest appearance of Ellis Pearson, the theater legend, and hosted by East Coast Radio's Trevor Williams.

Performing for Change Programme

Saturday, 24 October 2009, 14:00 – 17:00
Outdoor Amphitheatre, Durban Botanical Gardens
[In the event of rain, performances will be held in the Visitors Complex Hall]

The entertaining and informative program, hosted by Trevor Williams, is designed for people of all ages and uses the arts to explore a variety of challenges facing our planet, from climate change to environmental issues to genetically modified foods. Set in the beautiful Botanical Gardens, join us for a day of environmental fun – and bring a pillow so you're comfortable during our exciting line up.

Welcome – Meagan Lewis, Environmental Management Department, eThekwini Municipality.

Fish Out of Water – Sukhazwe Drama Group, Amaoti. A community theatre production about climate change adaptation, written by Louise Buchler and Kiara Worth, Golder Associates.

African Storytelling – Phelani Primary School. A collection of African Tales told by Nomfundo Ngcobo.

What on Earth? – Gordon Road Girls Primary School. Water – what would we do without it? A school theatre production written by Peter Court.

Food for Thought / UnFood? – On the Edge. An educational, interactive performance creating awareness around the issue of genetically modified foods. Performed and written by Gareth Pretorius and Thato Oliphant.

Theatre of Survival: Grassroots Climate Change Communication – Golder Associates. Bridging communication gaps and making climate change real. Written and performed by Kiara Worth.

Little Tree - Only by growing trees can we save the earth and develop properly. Written and performed by Ellis Pearson and Sizmo Mtshali.

Tickets cost R5 and all proceeds will be used to support local climate change initiatives within the eThekwini Municipality

Tickets can be purchased on the day, or at WESSA (Davenport Rd), the Environmental Management Department (166 KE Masinga Road), the Hemp Shop at Earth Mother, and the Corner Café.

For more information contact:

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Meagan Lewis, eThekwini Municipality
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Don't miss this never to be repeated event!

We look forward to seeing you there!

APPENDIX I

Fish Out of Water in the media

Community theatre is alive and well

Before the busy festive season, community artists get a spot in the footlights, writes Janet van Eeden

OCTOBER was a relatively quiet month on the theatrical front. Many thespians were catching their collective breaths after the Hilton Arts Festival and preparing themselves for the festive season.

Durban's popular Kickstart have been hard at work rehearsing *My Fair Lady* as well as *Peter Pan*. These two musicals will be performed at the Playhouse in Durban during the holidays.

For lovers of serious drama, the award-winning play *Kiss of The Spider Woman* by Argentinian Manuel Puig will run at the Catalina Theatre in Durban from 29th October until 15th November.

Directed by Clare Mortimer and starring Darren King and Lorenzo Macdonald, it promises to be a goodie.

Since October was quiet theatrically, I have highlighted some community-oriented events recently. As October 24 was Climate Action Day an afternoon of performances aimed at creating awareness was offered to the public under the title, Performing for Change. Reviewer Louise Buchler reports on this event which also featured one of her plays.

"The eThekwini Municipality, along with Golder Associates, Wessa, Wildlands Conservation Trust, Eco Schools, The Climate Action Partnership and On the Edge Enviro-Action Theatre Company joined forces to celebrate Climate Action Day," reports Buchler.

"It was hosted by Sat Coast Radio's Trevor Williams along with event organisers Morgan Lewis and Klara Worth. The event opened with FoodforThought/Cotiani, a fun physical theatre piece developed to create awareness of energy by its creators, Gareth Pretorius and Thato Oliphant.

"This was followed by African Storytelling, delightfully narrated by Nonhlanhla Ngcobo. *Fish Out of Water* followed," which was written by Buchler in collaboration with Klara Worth and

The organiser of Climate Action Day and performer in the one-woman show, Theatre for Survival, Klara Worth educates and entertains a captive audience.

the Sakhisizwe Drama Group.

Buchler continues: "This performance explores the impact of climate change on the community of Amanzimtoti and seeks to identify adaptation strategies to cope with the change in weather. The piece was vividly brought to life by the talented group of first-time performers under the direction of Klara Worth.

"Gordon Road Girls Primary School then entertained the audience with their rendition of *What On Earth* written by Peter Court. This play contemplated a world without water.

"A one-woman show, *Theatre for Survival*, performed by Klara Worth, followed. This skilful performer explored how best to communicate issues of climate change to communities.

"The final play was, for me, the highlight of the event," Buchler reports.

The Sakhisizwe Drama Group perform in *Fish Out of Water*, a play which explores the effects of climate change on a community.

tion Campaign in the late '80s and '90s.

I asked journalist Brendon Bosworth to convey his impressions of a time very different to the present.

"*Out of Step* at the Durban Art Gallery is a testament to bravery," Bosworth writes. "The exhibition celebrates the 25th anniversary of the End Conscription Campaign (ECC), an organisation of conscientious objectors who risked incarceration and their lives to oppose the apartheid war machine and encourage other white men to defy the draft.

"The ECC's posters, pamphlets, stickers and T-shirts are on display. A poster depicting a soldier sitting dejectedly with his head on his arms, proclaims 'Botha, it's Garvol'. Jean Sinclair, founder of the Black Sash, stares resolutely from an enlarged black and white shot, holding a placard: 'No Call-Up for an Apartheid Republic.' A bright yellow T-shirt defiantly states: Troops Out of the Townships.

"It's a moving history lesson for someone like me, who spent the '80s as an oblivious tyke cocooned in suburbia. I leave better informed about venerable figures such as the late Dr Ivan Toms, a founding member of the ECC and later Cape Town's director of health... Most importantly, it's a reminder that even in the darkest

Dr Richard Steele, a former ECC activist, relives memories of a harsher time at the ECC exhibition.

"Elliz Pearson and Sthimo Mtolo's piece, *Little Tree*, dealt masterfully with deforestation through development, using both humour and pathos to educate the audience."

An art exhibition, *Out of Step*, at the Durban Art Gallery in October, explored the work of the End Conscrip-

times, there are those who refuse to bow to tyranny," Bosworth concludes.

Yet another worthy community-based effort was the launch of the KZN branch of the SA National Community Theatre Association (Sancta) at the Catalina Theatre in Durban this past month. National chairperson Noel McDonald reports.

"Sancta used to be Aartdraf', the one-set festival arm of the Association of Amateur Performing Arts 25 years ago," says McDonald.

"I launched the new body in 2000 with a new name, making it multicultural and multilingual at our first festival at Wits," explains McDonald.

"We concentrate on the production of mainly new South African works. We run extensive educational courses as well as creating an annual play festival. Sancta hosts a new South African one-act playwriting competition each year... We have opened a branch in Durban," McDonald says.

"The branch co-ordinator is Wesley Bisegwe, who performed in the Sancta festival in 2007.

"We look forward to... introducing our 10th annual Sancta Festival plans for 2010 and hope to have many entries from KZN. For information on the launch, please contact Wesley on 072 413 6484 or visit the website

www.sancta.org.za"

In Pietermaritzburg, the Brooklyn Centre is hosting an exhibition of African art and craft for the week ending November 9. Zannie van Heerden, chief education specialist, visual arts & design at the KZN Department of Education and author of the book Zulu Beadery, will be available to sign copies. Also on display will be the latest works from the Rorke's Drift Centre, traditional baskets from the Vukani Museum in Eshowe and work from several local projects. Phone Deanne Lawrence for details and directions at: 033 344 3084.

Finally, for South African fine art lovers, the Sanlam Art Collection will exhibit 60 key works at the Durban Art Gallery at the City Hall from November 17 until January 2010.

● E-mail janet@januaceden.com or janetvee@iafrica.net to pass on arts news in KZN.

Climate change in theatre spotlight

THEMBA KHUMALO

A DAY of theatre and entertainment was held to celebrate International Climate Day at the Botanical Gardens Amphitheatre recently.

It was held ahead of the United Nations climate change talks, which took place in Copenhagen.

The day was organised by the City with the help of Golder Associates, the Wildlife and Environment Society of South Africa, Wildlands Conservation Trust, Eco Schools, the Climate Action Partnership and On the Edge Enviro-Theatre Company.

Meggan Lewis, of the City's Environmental Management Department, said, "We can all play a role to save our planet by doing little things such as saving electricity, using water wisely and recycling.

'Drastic'

"We have seen a drastic change in weather patterns and a rise in sea levels and temperatures. The weather is getting erratic," she said.

Lewis said, "Dealing with climate change is not a problem for politicians only.

We need to acknowledge we have this problem."

She thanked all involved in making the day a success.

Theatre was used to explore issues facing the planet, from climate change to environmental matters and genetically modified foods.

Rob Hounsome, of Golder Associates, said, "The feedback we have received has been positive. People felt the plays were a good way to communicate issues about climate change."

Melusi Ndima, of the Students in Free Enterprise (Sife) network, said, "It is important we attend such days because climate change affects future generation and it is up to us to ensure this does not continue.

"That is why as Sife at the Durban University of Technology we have begun a campaign to educate students about the importance of saving electricity," he said.

"We learned a lot, which we will implement in our own programmes and take the message to fellow students," he said.

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