

**IMPACT OF DISASTERS ON PUBLIC HEALTH: AN
INVESTIGATION OF DISASTER MANAGEMENT
REQUIREMENTS IN THE RURAL MUNICIPALITY OF
NDWEDWE**

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DEDICATED

TO

MY LATE PARENTS, NANA AND KHALADI

XABA

FOR INSTILLING GOOD VALUES OF LIFE

DECLARATION

I certify that the whole dissertation, unless specifically indicated to the contrary in the text is my own work. It is submitted as the dissertation component in partial fulfillment of the requirements for the degree of Masters of Public Health Law in the Faculty of Law, University of KwaZulu Natal, with the year of submission of the dissertation.

I declare that this research has not previously been submitted for a degree or diploma to any other tertiary institution.

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List of Abbreviations

| | |
|---------------|---|
| WHO | World Health Organisation |
| IDP | Integrated Development Plan |
| MIIP | Municipal Infrastructure Investment Plan |
| MIG | Municipal Infrastructure Grant |
| CHARM | Comprehensive Hazard and Risk Management |
| NGO's | Non Governmental Organizations |
| UDHR | Universal Declaration of Human Rights |
| PDGS | Provincial Growth and Development Strategies |
| MTSF | Medium Term Strategic Framework |
| NSDP | National Spatial Development Perspective |
| MINMEC | Ministers and MEC council |
| PCC | Presidential Coordinating Committee |
| SANCO | South African National Civic Organisation |
| LGTA | Local Government Transitional Act |
| CMIP | Consolidated Municipal Infrastructure Programme |
| DWAF | Department of Water Affairs and Forestry |
| PERCCO | Provincial Emergency Reconstruction Co-coordinating Committee |
| DTLG | Department of Traditional and Local Government |
| ITP | Integrated Transport Plan |

CHAPTER 1

DEMARCATION OF STUDY FIELD

1.1 INTRODUCTION

KwaZulu-Natal has a coastline flanking the Indian Ocean from the Hibiscus Municipality in the South to Umhlabuyalingana Municipality in the North. KwaZulu –Natal is prone to a number of disasters, which include, flooding as it was experienced in the previous years, and the outbreak of diseases such as cholera, which normally follow flooding. The province has been experiencing devastating drought since the second half of 2003. It was for this reason, that, in early 2004, some municipalities were declared as disaster areas in terms of relevant legislation. It is generally the rural people, the majority of whom experience the full impact of such disasters. This chapter provides an overview of the study. It outlines the key aspects that will be taken into consideration in the study area, definition of terms, demarcation of study area and overview of chapters. Limitations of the study as well as the future contribution of the research in the development of disaster management plans will be provided.

1.2 THE NEED FOR THE STUDY

The existence of municipalities was set up in terms of Section 155 (1) of the Constitution¹. The demarcation process (wall to wall) established municipalities in areas not covered by the Civil Protection Act². In KwaZulu Natal, there are communities in both urban and rural areas who are now part of the newly demarcated municipalities. The Disaster Management Act³ sets out the responsibilities of municipalities in the management of disasters. These

¹ The Constitution of the Republic of South Africa (Act no.108 of 1996)

² The Civil Protection Act , (Act no. 67 of 1977)

³ Disaster Management Act, (Act no. 57 of 2002)

municipalities have to respond to the requirements of the new legislation utilizing disaster management infrastructure “inherited” from Town Boards and other municipal establishments put in place before 1994 and before the new demarcations. In addition to this, these municipalities are faced with increased population numbers following the inclusion of previously excluded communities in the new municipal areas. Disaster management is the responsibility of all spheres of government. Local government, however, plays a more critical role in the prevention, mitigation and aftercare of a disaster.

This role assigned by legislation to municipalities has to be executed within the realities of expanded municipal areas and limited resources. Of the sixty- one (61) municipalities in KwaZulu- Natal, twenty- one (21) of them are new. Their operational infrastructure is established in terms of a new establishment plan. Municipalities that existed before 1994 now have newly demarcated boundaries, which include peri-urban and rural communities. Access to disaster management facilities by all communities is one of the major objectives of the transformation process in South Africa. The pre- 1994 town planning schemes in terms of the Town and Regional Planning Ordinance of 1947 established urban pockets, which were covered by the Civil Protection Act⁴ to the exclusion of large peri-urban and rural communities.

Today, municipalities in South Africa have to develop an inclusive Disaster Management Plan, which satisfies the requirements of the Disaster Management Act. This plan must indicate resources, institutional arrangements and activation procedures. The Disaster Management Plan must be submitted as part of the municipality’s Integrated Development Plan (IDP) finalised in terms of chapter five (5) and six (6) of the Municipal Systems Act⁵. The last round of Integrated Development Plan submissions was concluded. Out of 61 IDP’s submitted, none had finalised a Disaster Management Plan⁶. This serious setback in the

⁴ Civil Protection Act (Act no. 67 of 1977)

⁵ The Municipal Systems Act (Act no. 32 of 2000)

⁶ Source: KwaZulu-Natal Multisectoral Integrated Development Plan Forum – March 2003.

transformation process is understood in the context of lack of guidelines to Municipalities on the development of a Disaster Management Plan. In addition, the KwaZulu-Natal Provincial Disaster Management Framework has not been finalized.⁷

The Disaster Management Act⁸ requires a Disaster Management Center and a Disaster Management Advisory Forum to be established in all municipalities. These are statutory structures, which must be established in terms of by-laws. Financial resources and technical capacity will determine a municipality's ability to deliver on both the institutional arrangements and the required Disaster Management Center. Smaller municipalities in rural areas with large indigent populations, with high unemployment and very weak ratepayer's base serve as a challenge in responding to the requirements of the Disaster Management Act⁹.

A municipality's Disaster Management Plan has to be aligned to its Municipal Infrastructure Investment Plan (MIIP). This is due to the role of roads, electricity, telecommunications, hospitals and other infrastructure in the management of disasters. The packaging of municipal infrastructure projects and securing funds requires tertiary levels of technical, financial and management expertise. This adds to the list of challenges facing newly established rural municipalities. These municipalities will rely on government grants in order to deliver the required structure. National government has consolidated funding mechanisms in an attempt to fast track infrastructure delivery by municipalities¹⁰. From the beginning of April 2004, there was a funding mechanism known as Municipal Infrastructure Grant (MIG). This replaces and consolidates the following infrastructure funding mechanisms:

- Local Economic Development Fund;
- Consolidated Municipal Infrastructure Programme;

⁷ Source: Extract from KZN Provincial Disaster Management Plan: 2005

⁸ Disaster Management Act, (Act no. 57 of 2002)

⁹ Disaster Management Act, (Act no. 57 of 2002)

¹⁰ Source : Cabinet Approval of March 2003

- Water Services Capital Grant;
- Community based Public Works Programme;
- Building of Sports and Recreation Programme;
- National Electrification Programme to Eskom; and
- Urban Transport Fund.

The KwaZulu-Natal Municipal Infrastructure Grant (MIG) Programme was launched by the MEC for Local Government, Housing and Traditional Affairs on the 21st of May 2004. It can be expected that the rollout to municipalities will take some time. Once again, resources and competencies within a municipality will determine their ability to develop necessary infrastructure and to establish disaster management structures and facilities in terms of the legislation.

Disaster management in the context of the current legislation was implemented in its first financial year (2004/2005). Stakeholders need guidance on the framework and disaster management plans. It is of this view that the study has targeted a newly established rural municipality with an aim of addressing challenges.

1.3 OBJECTIVES OF THE STUDY

The following objectives have been identified, inter alia to:

- provide background information on the evolution of Disaster Management legislation;
- indicate the transition to the inclusion of all communities with the introduction of the 1996 Constitution;
- review legislation and to indicate municipal responsibilities in terms of Disaster Management Act;

- identify challenges in the development and implementation of a Municipal Disaster Management Plan and in the design and operation of a Municipal Disaster Management Centre;
- outline alignment relationships between Integrated Development Plans, Municipal Infrastructure Investment Plan and Disaster Management Plans;
- investigate funding options for disaster management where communities are indigent; and
- present a draft template for the development of a Disaster Management Centre for a rural municipality.

1.4 KEY QUESTIONS

The following questions will be answered interalia;

- How does one define “disaster “in a local government context?
- What is the role of infrastructure service delivery in disaster management?
- What is the impact of the inclusion of rural communities who are indigent (not paying rates) in the Disaster Management Plan?
- What should be the elements of the Disaster Management Centre?
- What institutional arrangements should be in place for the management of municipal disasters?
- What are the specific disaster management requirements in a rural area?
- What resources (including skills) should drive the Disaster Management Plan?
- How can the local municipality’s Disaster Management Plan be aligned to the District Municipality’s, the Province’s and the National Disaster Management Plans?

1. 5 RESEARCH AND METHODOLOGY

There are four components in this research, which are set as follows;

1.5.1 Theory search and analysis

- Literature review of disaster management as a public health issue;
- Analysis of Integrated Development Plan's;
- Analysis of the Integrated Development Plan of Indwedwe Municipality;
- Analysis of Disaster Management legislation; and
- Generation of disaster management planning options based on both literature survey and empirical survey.

1.5.2 Survey

Questionnaires will be used to:

- Analyse disaster management requirements in a rural community;
- Assess municipal infrastructure capabilities on disaster management service delivery;
- Assess whether municipal human resources have the skills, competencies and knowledge base to plan for disaster management capabilities to deliver in disaster management and execution.

1.5.3 Data Processing and Analysis

Computer based and statistical analysis will be used in the interpretation of survey information.

1.5.4 Development of a theoretical framework

A theoretical framework which can be used to design a Municipal Disaster Management Plan and Disaster Management Centre within the context of the Disaster Management Act will be developed.

1.6 DEMARCATION OF THE STUDY FIELD AND OVERVIEW OF CHAPTERS

The following is a brief overview of all chapters in this study:

1.6.1 Chapter 1: Importance of study, objectives, definition of terms

This chapter outlines the importance and the need of the study. Research methodologies as well as key questions to be answered by the study are outlined. The chapter further identifies terms, which have been used and require clarification. Acronyms and abbreviations have also been collated and they are clarified in this chapter. Chapter one also provides a roadmap that can be used to navigate the entire document in that it provides summaries of each chapter.

1.6.2 Chapter 2: Relationship between public health law, public health, disasters and local government

This chapter highlights the distinctiveness of public health and public health law. It also indicates the relationship between health, disasters and the role of local

government. The chapter further outlines the role and the function of each sphere of governance in relation to disasters. The legal framework for co-operative governance is also discussed.

1.6.3 Chapter 3: Legislative framework on Disaster Management

This chapter introduces the South African legislative framework regarding disasters. Background to the evolution of local government is linked to the requirements of disaster management. It traces the historical background to disaster management in the context of the new legislation. The purpose of this chapter is to highlight policy and implementation challenges that must be taken into account in preparing for disaster management planning. The chapter contextualizes disaster management within the area of development planning and also analyses relationships flowing out of the planning process of IDP's .It identifies layers of planning which must align with the disaster management planning process. It introduces the municipal and provincial planning institutional arrangements. In this way, this chapter clarifies the various milestones that must be achieved in the disaster management planning process in KwaZulu- Natal.

1.6.4 Chapter 4: Disasters in KZN context

This chapter explores the definition of disasters, nature of disasters and their health impact. Disasters in general and specifically those that affected Kwa-Zulu- Natal are explored. Strategies that were adopted by government(s) in dealing with disasters are examined. It covers all factors responsible for the exclusion of predominantly rural areas from disaster management infrastructure in the province. It touches on aspects of specific disasters and their types. With regard to challenges, it looks at absence of capacity in addition to poor infrastructure. The chapter discusses the realities of the legacy of past policies. It

looks into the intergovernmental relations situation in the context of local government.

1.6.5 Chapter 5: International perspective

This chapter discusses international perspective to disasters. A selection of case studies like the experiences of Katrina, Tsunami and the Famine in Sudan are used for comparative purposes. Government responses to the disasters are explored.

1.6.6 Chapter 6: Research Methodology, Analysis and Presentation of Results

This chapter discusses the research design, the methodology used and the different types of statistical analyses. The objectives as well as limitations of the study are outlined. This was done by administering questionnaires specifically designed for the purpose, and by interviewing community members of Ndwedwe, thereby assessing their understanding of disaster management as well as its impact on Public Health. Participation in the research was voluntary, confidentiality of all information and, the anonymity of all participants was assured. The findings arising from the empirical evidence were contextualized within the broader framework of the study. The analyses of the data under the relevant themes give an integrated and holistic overview of the study as a whole. The chapter covers general and specific findings. Findings are categorized according to themes.

Chapter 7: Conclusion and Recommendations

This chapter contains general conclusions and recommendations arising from the empirical research.

1.7 DEFINITION OF KEY TERMS

The following key terms are defined:

DISASTERS - This concept stems from the Greek meaning “bad star “ as a natural or man made event that negatively affects life, property, livelihood or industry often resulting in permanent changes to human societies, ecosystem and the environment. Disasters manifest as hazards exacerbating vulnerable conditions and exceeding individual and communities means to survive and thrive¹¹ .

NATURAL DISASTERS – can be defined as a natural phenomenon that can easily turn into a natural disaster. Appearing to rise without direct human involvement, natural disasters are sometimes called an Act of God. A natural disaster may become more severe because of human actions prior, during or after the disaster itself. A specific disaster may spawn different types of events and may reduce the survivability of the initial event. An example of the natural disaster is that of an earthquake that collapses homes, trapping people and breaking gas mains that then ignite, and burn people alive while trapped in the debris¹² .

DISEASES - become a disaster when it spreads in a pandemic or epidemic as a massive outbreak of an infectious agent. Disease is historically the most dangerous of all natural disasters. Different diseases cause different epidemics, and different epidemics have included the Black Death, small pox and AIDS¹³ .

¹¹ Allen J. Natural Disasters- Floods, 2002

¹² Foster D, Disaster Planning , 1980

¹³ Allen J. Natural Disasters- Floods, 2002

DROUGHT - is a long lasting weather pattern consisting of dry conditions, with very little or no precipitation. During this period food and water supplies can run low, and other conditions such as famine, can result. Droughts can last for several years and are particularly damaging in areas in which residents depend on agriculture for survival¹⁴.

FAMINE - is a natural disaster characterized by a widespread lack of food in a region, and can be characterized as lack of agricultural foodstuffs, lack of livestock or a general lack all foodstuffs required for basic nutrition and survival. Famine is almost always caused by pre existing conditions, such as drought, but social effects such as war may exacerbate its effects¹⁵.

FLOOD - is a natural disaster caused by too much rain or water in a location, and could be caused by many different sets of conditions. Floods can be caused by prolonged rainfall from a storm, including thunderstorm, rapid melting of the large amount of snow, or rivers which may swell from excess precipitation upstream and cause widespread damage to areas downstream, or less frequently the bursting of man made dams. Floods are one of the most common natural disasters. Flash floods are very dangerous as the water moves rapidly and with great force¹⁶.

HURRICANE - is a low –pressure cyclonic storm system that forms over oceans. It is caused by evaporated water, which comes off the ocean and becomes a storm. In different parts of the world hurricanes are known as cyclones or typhoons. The former occur in the Indian Ocean while the latter occur

¹⁴ Foster D, Disaster Planning , 1980

¹⁵ Alexander D. Natural Disasters, 1993

¹⁶ Durham, E, Floods: Restless Planet, 1999

in the in the Eastern Pacific Ocean. The most damaging hurricane in the USA was hurricane Katrina, which hit the US Gulf Coast in 2005¹⁷.

TSUNAMI - is a giant wave of water, which rolls into the shore of an area with a height over 15m (50ft). It comes from a Japanese word meaning harbor and wave. Tsunamis can be caused by undersea earthquakes as in the 2004 Indian Ocean Earthquake or by landslides. The tsunami generated by 2004 Indian Ocean Earthquake currently ranks as the deadliest tsunami in recorded history. A Tsunami often is confused with a tidal wave. Actually, they are two completely different natural events. Tidal waves are caused by ocean tides. The moon affects ocean tides by pulling on Earth with a force called gravity¹⁸.

EARTHQUAKE- It is defined as the shaking of the ground caused by movements beneath the earth's surface. Strong earthquakes can collapse buildings, bridges and often structures causing great damage and loss of life. Major earthquakes dramatically demonstrate that the earth is dynamic, changing system. In general, they represent a release of built up stress in the lithosphere. Earthquakes of the same magnitude occurring in two different places can cause very different amounts of damage, depending on such variables as the nature of the local geology, whether the area affected is near the coast, and whether the terrain is steep or flat¹⁹.

¹⁷ Source: (<http://www.fema.gov/hazards>).

¹⁸ Source: <http://en.Wikipedia.org/wiki/disasters>).

¹⁹ Montgomery C, Environmental Geology ,1991

MAP OF ILEMBE DISTRICT MUNICIPALITY

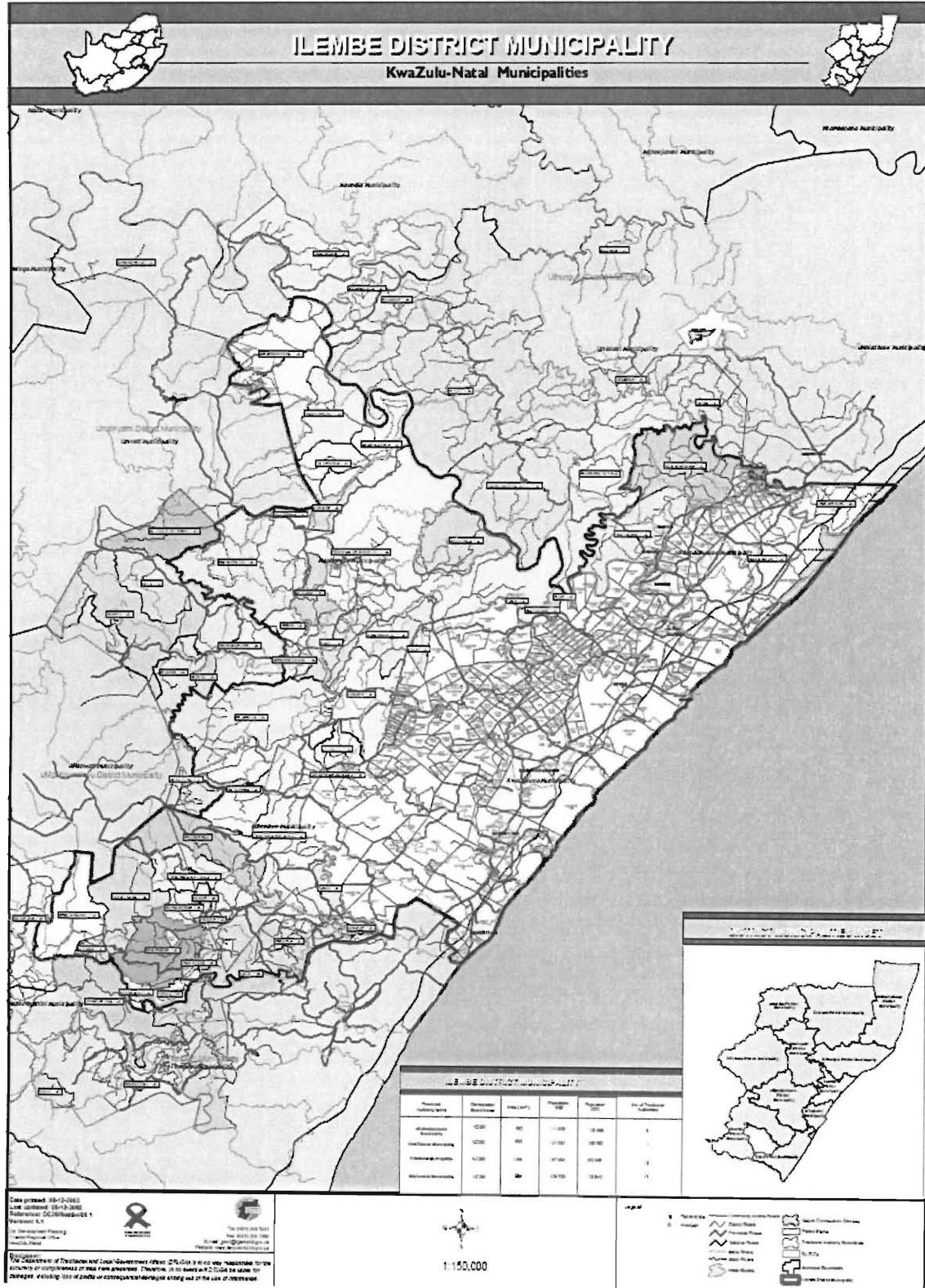


Figure 1: Map of Ilembe District Municipality (Ndwewe IDP 2004/2005)

According to the Ilembe District Municipality Integrated Development Plan Review ²⁰, the Ilembe District Municipal Area is situated on the East Coast of Kwa-Zulu Natal adjacent to the northern boundary of the eThekweni Municipality. The district extends about 75 km north of the Metro boundary to some 25kms beyond the mouth of the Tugela River. The western extent of the District Municipal area runs roughly parallel to the coastline at an average distance of about 45km from the coast.

Geographically, the Ilembe is the smallest of the 10 District Councils of Kwa-Zulu Natal with a population estimated at 560 377 (2001 census). The Municipal area encompasses four local municipal areas, namely eNdonakusuka, Ndwedwe, Maphumulo and KwaDukuza.

The District has embarked on a Comprehensive Hazard and Risk Management (CHARM) programme to develop a disaster management strategy, which uses a multi-agency, multi-sectoral approach to disaster management, with a risk management focus. Risk management policies and procedures have been adopted in a wide range of professions and industries. The Comprehensive Hazard and Risk Management (CHARM) programme aims at facilitating greater collaboration between risk reduction projects at all levels and across all sectors to enhance sustainable development.

CHARM entails an all hazards, whole of District, Province, and Country comprehensive approach to community hazard and risk management, which involves:

- Addressing all hazards including natural, human induced, technological and environmental;

²⁰ Source : Ilembe District Municipality Integrated Development Plan Review 2004/2005

- Adopting all appropriate risk reduction measures, including prevention/mitigation, preparedness, response and recovery processes;
- Integrating the efforts of all relevant district, provincial and national organizations and agencies, public sector, NGO' s and community organizations;
- Linking to district / provincial / national development planning and decision making processes/ systems;
- Seeking to develop prepared communities with reduced vulnerability to risk and increased resilience to the impacts of hazards; and
- Seeking to strengthen multi-sectoral collaboration and partnerships.

DESCRIPTION OF NDWEDWE LOCAL MUNICIPALITY

| Description: Ndwedwe Municipality (KZ 293) - local municipality falling within Ilembe District (DC 29) | | |
|---|---------------------------|-------|
| Extent of the Ndwedwe Municipal area (square kilometers) | 1154 | |
| Population (DLGTA 2006 Municipal Profile) | 152 495 | |
| Population Density (people/km ²) | 115 | |
| Population Group (%) | | |
| Black African | 150971 | 99% |
| Coloured | 0 | 0% |
| Indian | 1525 | 1% |
| White | 0 | 0% |
| Male Population (%) | 70148 | 46% |
| Female Population (%) | 82347 | 54% |
| Municipal Age profile | 0 to 4 | 13% |
| | 5 to 19 | 38% |
| | 20 to 64 | 42% |
| | Over 65 | 5% |
| Dependency Ratio (No. of people dependent on economically active group) | | 56% |
| HIV/AIDS status (% infected across District as per KZN Dept. of Health Statistics) | Across District | 34.7% |
| Education Levels | No Schooling | 39.3% |
| | Grade 12 | 10% |
| Unemployment (out of labour force) | Unemployed | 66% |
| Income Levels (%) R0/HH | Households with no income | 33% |
| | R1 – R801/HH | 41% |
| | R801 – R1600/HH | 16% |
| Financial Grant Dependency (as per DLGTA 2004) | | 100% |

| | | |
|--|----|-----|
| Number of Municipal Wards | 19 | |
| Number of Councillors | 37 | |
| Number of Traditional Authority Areas | 23 | |
| Service Backlogs (% Households with no access) | | |
| Water | | 42% |
| Sanitation | | 63% |
| Electricity | | 78% |
| Refuse | | 97% |
| Housing | | 70% |

Table 1: Ndwedwe Municipal Profile (Census Data 2001)

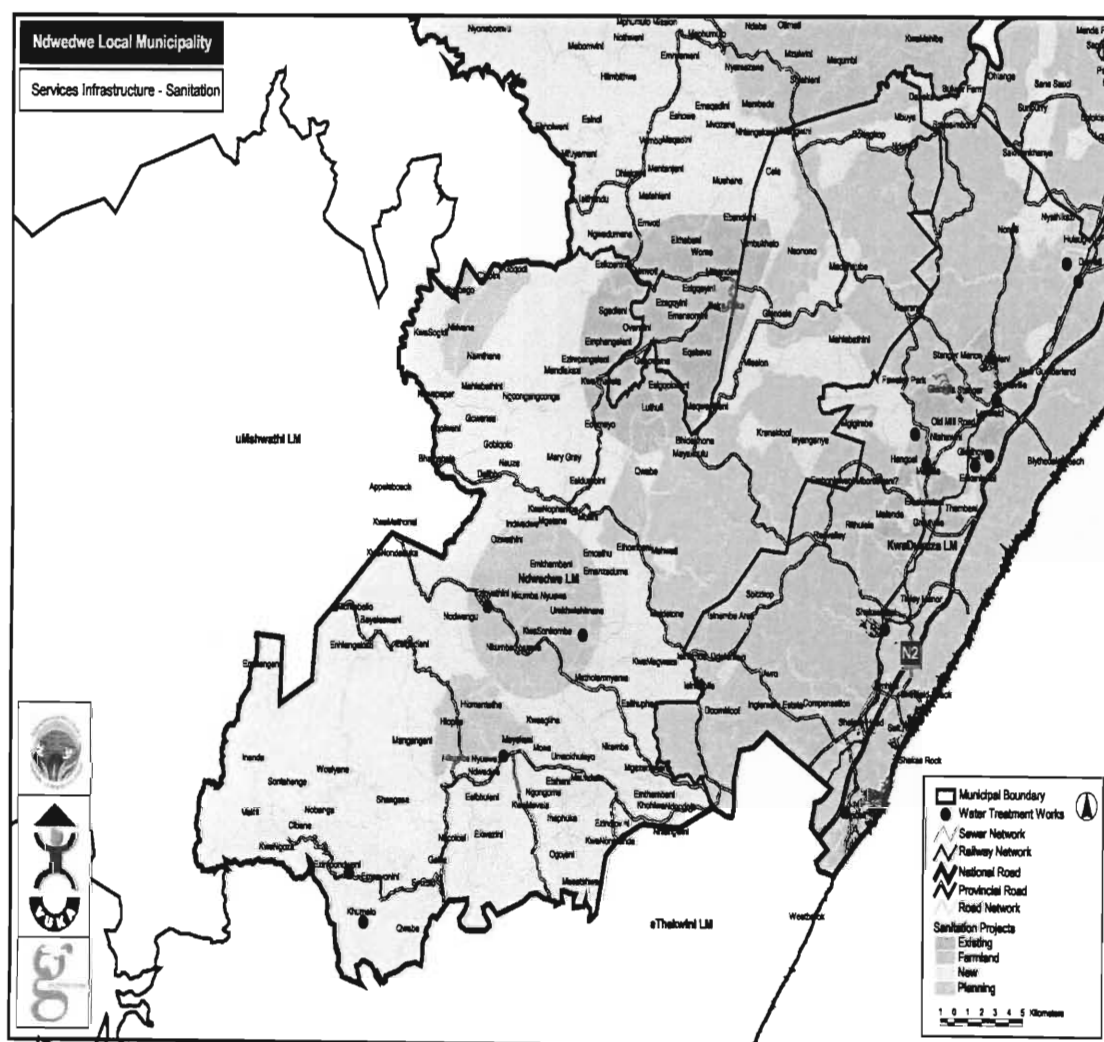


Figure 1.2: Ndwedwe Municipality- Services Infrastructure Sanitation (Indwedwe IDP 2004/5)

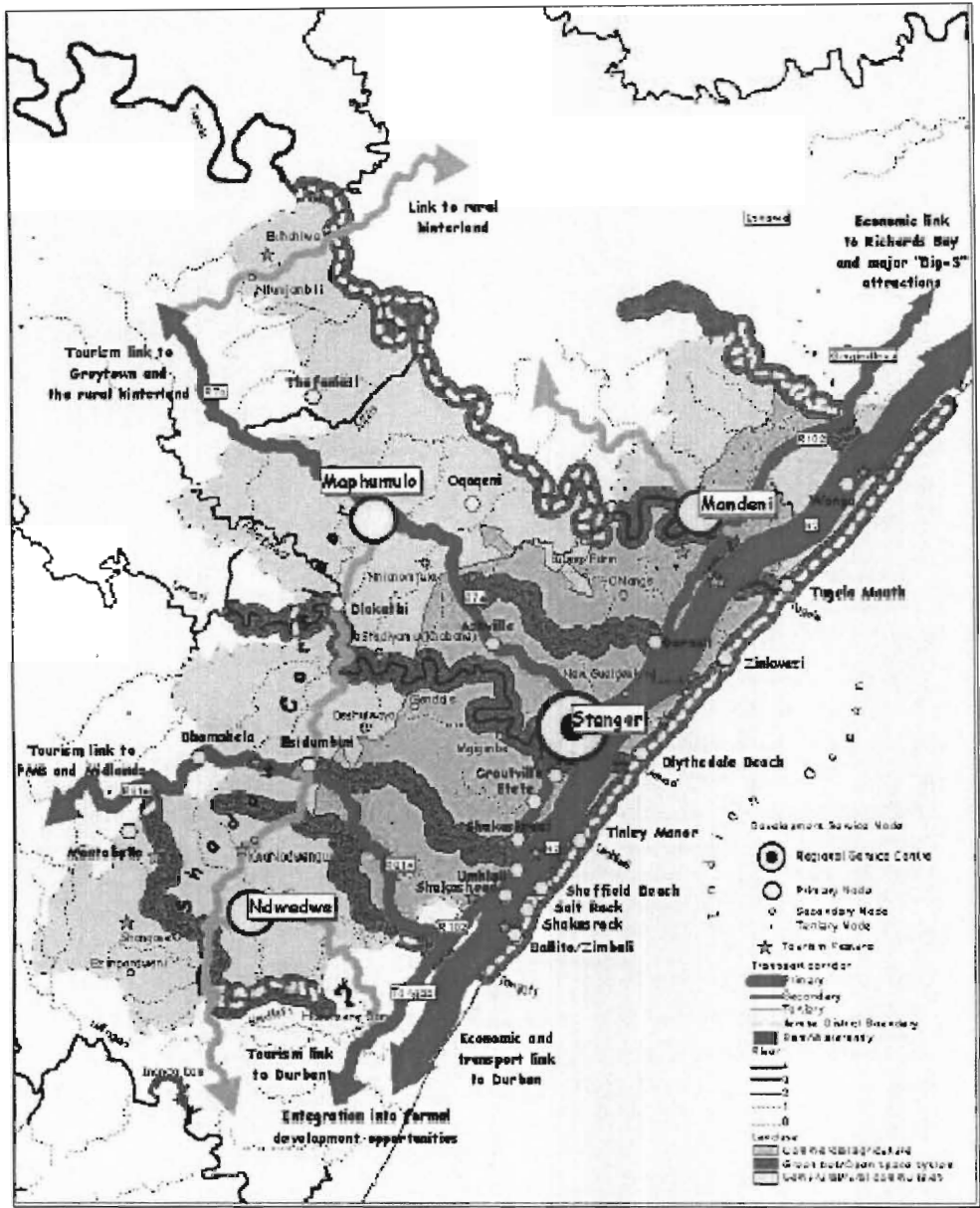


Figure: 1.3 Ndwedwe Local Municipality (Ndwedwe IDP 2004/5)

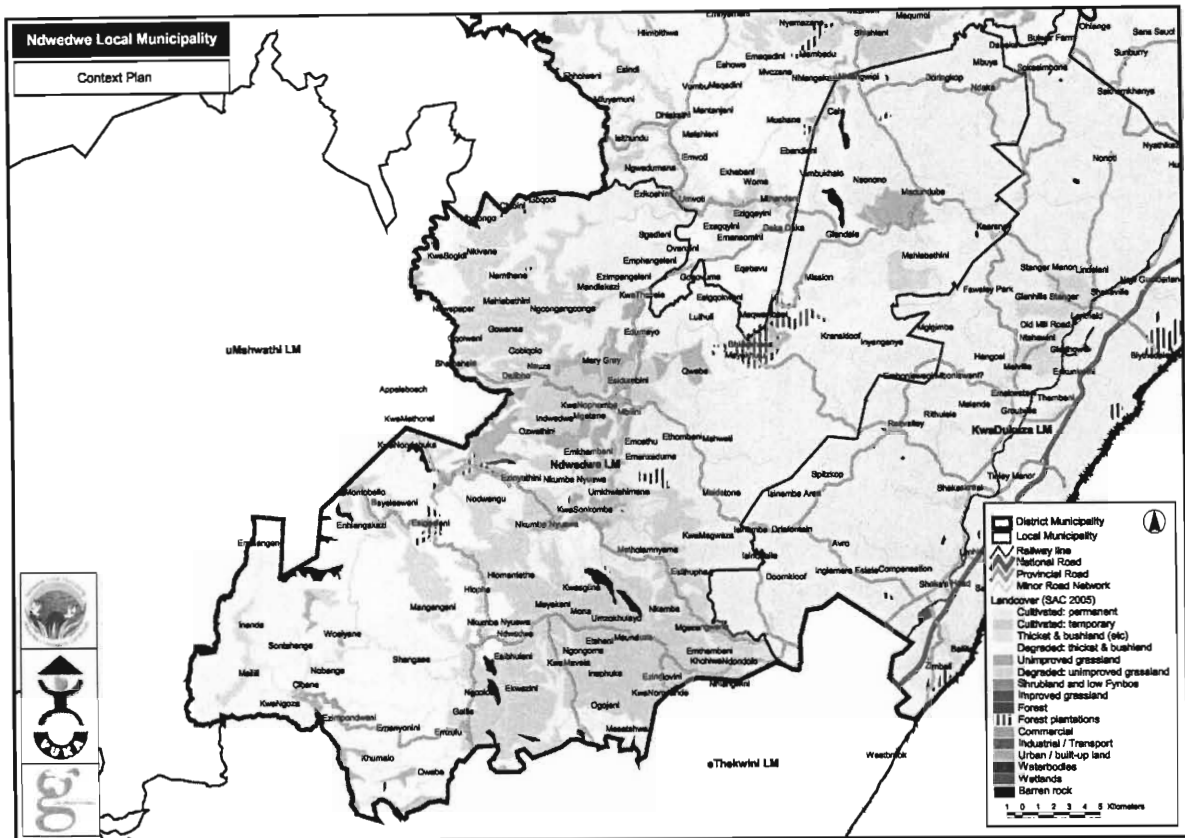


Figure: 1.4 Ndwedwe Local Municipality: Context Plan(Ndwedwe IDP 2004/05)

According to Ndwedwe Local Municipality’s Integrated Development Plan as reviewed in 2004/05 for 2005/6 financial year an overall description of Ndwedwe is as follows,

- The Ndwedwe Municipality is in extent of 1153 km² and accommodates a population of 153 000 people in the region. Overall settlement densities are consequently approximately 145 people / km²
- Approximately 60% of Ndwedwe consists of tribal authority land and the remainder is made up of commercial farm land located in the north east of the municipality
- While the northeastern part of the municipality forms part of the flat to undulating coastal flats, the majority of the area consists of fragmented

and steeply sloping topography being traversed by a series of major and incisive river valleys traveling in west- easterly direction to the coast.

- External access and internal linkage is consequently substantially limited to east- westerly road linkages while north- southerly connections are rare and of poor quality
- The tribal areas of the municipality exhibit the normal traditional dispersed pattern of settlement, although densification is apparent in proximity of major linkages and nodes within the area. This is in particular relevant to the areas around the P100 east of Ndwedwe and around the R 614 in the Nsuze / Qinisani areas.
- Activities in the Municipality are limited to commercial agriculture in the northeast and east of the area, subsistence farming in the remainder of Ndwedwe, smaller areas of forestations and local commercial activities.
- Although some progress has been made during recent years, the provision of facilities and amenities on one hand and the extent of service provision throughout the area are limited.
- The major problems, consists of high unemployment rates, low household income levels, insignificant municipal income levels and a very young population.

1.11 REQUIREMENTS OF DISASTER MANAGEMENT FRAMEWORK IN RELATION TO INDWEDWE LOCAL MUNICIPALITY

According to Disaster Management Act²¹ each District Municipality / Metro should establish a policy framework for a disaster management in consultation with the local municipalities, each District Municipality must establish a disaster management centre and each local Municipality must prepare and implement a disaster management plan. The act further stipulates that each municipality needs to develop a plan that is in line with the District Municipality's one. The Disaster Management Act²² defines a disaster as a "progressive or sudden, widespread or localized, natural or human caused occurrence which causes or

²¹ Disaster Management Act, (Act no. 57 of 2002)

²² Disaster Management Act, (Act no. 57 of 2002)

threatens to cause death, injury or disease, damage to property or infrastructure or the environment or disruption of a community, and which is of a magnitude that exceeds the ability of those affected by disaster using only own resources”

The Integrated Development Plan review for Ndwedwe highlights the following as disasters facing the Municipality:

- Informal settlements / traditional settlement areas inappropriately located without consideration of potential disasters,
- Periodic floods specifically in areas bordering on the major rivers,
- Wind, storm and hail damage,
- Foot and mouth disease,
- Cholera,
- Fire specifically in informal settlement areas and areas of dense vegetation,
- Man-made disasters related to construction work,
- Sporadic violence such as faction fighting,
- Water pollution, and
- Eviction of people from informal settlements and farms.

The IDP review further stipulates that at present the municipality has no capacity to deal with disasters of any nature and is therefore dependent on the Ilembe, which is a district Municipality. Disasters are currently reported to the District who assists in the affected areas. Areas indicated as constraints in addressing Disaster Management are as follows;

- A lack of capacity and resources in the local and also some extent the district municipality to address the functions,
- The lack of income generated from disaster management and related services, and
- The limited resources available for disaster management.

CHAPTER 2

RELATIONSHIP BETWEEN PUBLIC HEALTH, PUBLIC HEALTH LAW, DISASTER MANAGEMENT AND LOCAL GOVERNMENT

2.1 INTRODUCTION

The Disaster Management Act²³ recognizes that disaster management is about people's lives and, therefore, is closely linked to service delivery. This chapter explores the synergy between public health, public health law, disasters and local government.

2.2 PUBLIC HEALTH

According to Nadasen [2000: 16]²⁴ public health is defined as “ the science and art of preventing disease, prolonging life and promoting health and efficiency through organized community effort for the sanitation of the environment, the control of communicable infections, the education of the individual in personal hygiene, the organization of medical and nursing services for the early diagnosis and preventive treatment of disease, and for the development of social machinery to ensure that everyone enjoys a standard of living adequate for maintenance of health, organizing these benefits so as to enable every citizen to realize his birthright of health and longevity”.

²³ Disaster Management Act, (Act no. 57 of 2002)

²⁴ Nadesen S. Public Health Law in South Africa, 2000

Grad [1998:18] ²⁵ defines public health as “the science and art of preventing diseases, prolonging life, promoting health through organized efforts of society. Public health medicine is that branch of medicine, which specializes in public health and its main objective is to provide the surveillance of the health of the population, the identification of its health needs and the fostering of policies that promote health and the evolution of health services”.

Roemer [1998:57]²⁶ is of the view that law plays a constructive role supporting public health by authorizing measures to protect health, by increasing access to health services and by assuring the quality of health care that the society needs.

According to Nadasen [2000:16]²⁷ the following are among the essential public health services:

- Monitoring health status in order to identify community problems;
- Diagnosing and investigating health problems and health hazards in the community; and
- Enforcing laws and regulations that protect health and ensure safety.

Nadasen [2000:30] ²⁸ further argues that the core functions of public health involve assessment, which is a process of systematically describing the prevailing health status and needs of a community in order to assess its health needs. Thereafter, the policy development, which involves the processes of advocating for public health, sets priorities among health needs as well as the actual development of plans that address priority health needs. Lastly, the assurance aspect for public health ensures that the services identified will be delivered.

²⁵ Grad F. Public Health , its form, function and Parameters,1998

²⁶ Roemer ,Health Legislation as a tool for Public Health and Health Policy, 1998

²⁷ Nadesen S. Public Health Law in South Africa, 2000

²⁸ Nadesen S. Public Health Law in South Africa, 2000

Seedat [2001: 215]²⁹, defines public health as “the combination of science, skills, and beliefs that are directed to the maintenance and improvement of health of all the people through collective or social action”. The programmes, services and the institutions involved emphasize the prevention of disease and the health needs of the population as a whole. Public health activities change with changing technology and social values, but the main goals remain the same i.e. to reduce the amount of the disease, premature death and disease produced discomfort and disability in the population³⁰.

Three core elements of public health emerge in the above definition, which require substantiation:

- Public health addresses health not at the level of the individual, but at the level of the entire population. Where clinical medicine treats the disease within a person, public health aims to prevent problems before they occur by working at the aggregate level with issues such as the social norms;
- Public health frequently target major social processes like poverty, beyond the ability of a single community, its interventions therefore draw upon the resources of multiple disciplines and many different social sectors and,
- To collect the information for aggregate level change, public health requires methods that can define problems at the population, leveling ways that open them up to interventions involving multiple disciplines and sectors³¹.

2.3 PUBLIC HEALTH LAW

According to Gostin [1996:31]³² public health law are the “legal powers and duties of organized society to assure the conditions of the people to be healthy”. Public health law when viewed from the perspective of law, like public health concerns the health of populations as contrasted with health of individuals.

²⁹ Seedat M. Community Psychology , 2001

³⁰ Last J. A Dictionary of epidemiology , 1998

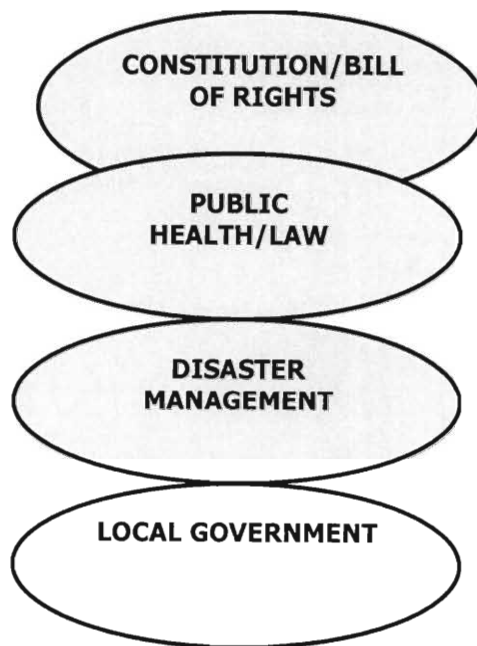
³¹ Seedat M. Community Psychology , 2001

³² Gostin L.O, Public Law : Power , Duty, Restraint, 1996

Therefore, public health law concerns the legal aspects of providing preventative, curative and rehabilitative services to populations, although public health law has an important impact on health protection and health care for individuals as well.

Grad [1998:55]³³ notes that public health is not a branch of medicine but a science in itself, to which however, preventative medicine is an important contributor. Public health law is that branch of jurisprudence, which treats the application of common and statutory law to the principles of hygiene and sanitary science.

It has been argued that health related legislations have been noted of having the good or welfare of public at large as their primary concern and their scope is wide which also cover constitutional guarantees relating to health. In understanding the relationship between disaster management, public health law, public health and local government the following illustration can be used:



³³ Grad F., Public Health Law, its form, function and Parameter, 1998

Figure 2.1: Proposed structure depicting relationship between Disaster Management, Public Health/ Law and Local Government

2.4 HEALTH AS A HUMAN RIGHT

According Weaver and McDonald [2003:6]³⁴ the idea of human rights sets basic standards of justice, dignity and respect for all humanity. It is closely linked to other important beliefs about how individuals should be treated in societies to be run, such as freedom, toleration and equal opportunities. All human beings want to live in dignity. Unfortunately there are some people that harm others. They do this in various ways and in South Africa this has also happened. Through the system of Apartheid many things were done to people that had an impact on their dignity. Human rights refer to the right to live in dignity. There are two ideas of the source of these rights. The first idea states that individuals have these rights because they are human. This idea refers to moral rights, but is also sometimes called natural rights. The second idea states that human beings have these rights because they are established in the laws of the country. This idea refers to legal rights, rights that have been established through the laws of the societies. Sometimes these societies can be countries or states. One can thus say that human rights are those basic standards without which people cannot live in dignity as human beings³⁵.

According to Chapman and Rubenstein [1998: 97]³⁶ the concept of health derive from two related but quite different discipline i.e. medicine and public health. Medicine focuses on the health of the individual. Individual health has been the concern of medicine and other related health care services that were more concern with physical illness and disability. Public health emphasizes the

³⁴ Weaver C., & McDonald , Human Rights, 2003

³⁵ Tarantola D. ,Health and Human Rights, 1998

³⁶ Chapman, A. and Rubenstein, L. Health and Human Rights: The Legacy of Apartheid, 1998

health of populations. In contrast to medicine public health has been defined as ensuring the conditions in which people can be healthy. Public health has a distinct health promotion goal and emphasizes the prevention of disease, disability and premature death. From the perspective of health promotion availability of medical and other health care constitute one essential condition for health but it is not synonymous with “health”. Health according to the World Health Organization³⁷ is defined as a “state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. This definition has helped to move health thinking beyond medical, pathology-based to the more positive domain of well-being.

Socio-economic rights as human rights are recognized in the 1948 Universal Declaration of Human Rights (UDHR) and in a number of other international human rights documents. In the case of South Africa, the Bill of Rights in the Constitution makes provision for legally enforceable economic and social rights such as the right to access health care.

Historical perspective gives some clarity on the question of legality of such a right. The doctrine of Human Rights has its roots in the theory of natural entitlements of the human person. It was during the period of enlightenment when some societies started to include human rights into their constitutions. The legal basis of human right can be sought during the following periods³⁸,

- During the eighteen century, the freedom of the individual and the idea that political leaders get their authority because of the consent of free individuals was the basis for the American Declaration of Independence and the French Declaration of the Rights of Man and of Citizen. This falls under civil and political rights, which are also called first generation rights.

³⁷ World Health Organisation, 1989

³⁸ Pillay & Liebenberg , Socio- Economic Rights in South Africa: A Resource Book, 2000

- During the nineteenth and twentieth centuries, some Asian and Latin American states adopted this principle and added an important social and economic rights which is referred to a second generation of rights
- Since the 1960's many African States also became independent and recognized the importance of human rights in their constitutions. In this way, people all over the world started accepting that all people have fundamental rights. It must also be remembered that during that time South Africa was under apartheid and it did not support the idea of the UDHR by then until the democratic government was elected.

The Constitution and the Bill of Rights fundamentally changed the South African law and is now the supreme or most important law of the country. The South African Constitution³⁹ firmly entrenches access to health care as a fundamental right.

Section 27 (1) (a) of the Bill of Rights states that everyone has the right to access health care services, including reproductive health care”.

Section 27 (2) specifies that the State must take reasonable legislative and other measures, within its available resources, to achieve the progressive realization of these rights.

Section 2 (3) states that, no one may be refused emergency medical treatment.

The Constitution of South Africa has provided one of the most progressive legal frameworks for the protection of human rights, which could only be limited by the resources needed to realize these rights. Health rights can be realized when the resources required are provided by government to control and treat illnesses in order to promote the well being of communities.

³⁹ The Constitution of the Republic of South Africa (Act no. 108 of 1996) Section 27

The Community Law Center (University of the Western Cape) argues that the economic and social rights are not absolute, but are qualified rights. They are not designed to be attained within a short timeframe. Therefore, in order to fulfill them it is much dependent on the availability of resources in the country. The extent of the State's obligation with regard to economic and social rights is much defined by the following elements:

(A) Reasonable legislative and other measures; this call for the state to adopt policies and programs that will assist poor to gain access to socio-economic rights. Further to that the very same people will need to be informed about relevant government programs and how are they going to benefit from them.

(B) Progressive Realization; The state in this case needs to introduce means and ways that are clearly targeted at achieving the goal of fully realizing rights within the shortest possible period of time. The state must move forward and not backwards in realizing the rights.

(C) Within available resources; this qualification acknowledges that resources can sometimes be limited and that the state must do the best it can within the resources it has. This will call for prioritization with regard to budget and other resources to fulfill this task. In prioritizing, the state should ensure that the vulnerable and disadvantaged have access to at least a basic level of socio-economic rights.

However, not all socio-economic rights are qualified the same way as for example with section 27. In those instances, such rights can be enforced in courts, since the issue of time and resources will be out of question. Examples of such right would be : the right to an environment that is not harmful to health or well-being as well as the right to basic education.

The aim of socio-economic rights is to ensure that all human beings have access to resources, opportunities and services needed for an adequate standard of living. The government, therefore, can be held accountable if they do not respect, promote, protect and fulfill these rights. This means that government must do the following:

- ***“Create an enabling environment, which makes it possible for people to gain access to the rights and improve their quality of life;***
- ***Remove barriers in the way of people gaining access to the right;***
and
- ***Adopt special measures to assist the vulnerable to gain access to the rights’⁴⁰***

In South Africa, it is clear that the full realization of these rights cannot be achieved overnight because of the large backlogs inherited from the past. It will take time and resources to undo the legacy of the past and ensure that all people have an adequate access to good health care. The Bill of Rights also recognizes that the full realization of a socio-economic right is a process. Therefore, it is important to highlight that some rights cannot always be guaranteed. South Africa has become an international role-model by including socio-economic rights as enforceable in the Constitution.

According to Gostin [1996:36] ⁴¹ in order for health policies to be more appropriate, a clear understanding of public health purpose to be achieved is essential. Government has a duty to articulate this. A precise conceptualization of purpose will lead to sound, properly conceived policies. Clearly articulated goals help to identify the true purpose of the intervention, facilitate public understanding and debate around legitimate health purposes. It is important to determine whether the public health policy is well targeted and therefore

⁴⁰ Pillay & Liebenberg , Socio- Economic Rights in South Africa: A Resource Book, 2000

⁴¹ Gostin L.O, Public Law : Power , Duty, Restraint, 1996

strategies should be tailored for those who will benefit from them. If policies are not evaluated that might lead to human rights violations.

Policies that adversely affect fundamental human rights and freedoms create significant violations on human rights. For example, when a decision is taken to isolate an individual may be for health reasons (e.g. for the prevention of the spread of disease) can sometimes be justified but if numbers are great that might have a negative impact in the lives of those individuals since the freedom of liberty will be restricted.

2.4.1 IMPACT OF HEALTH LEGISLATION ON HUMAN RIGHTS

Tarantola [1998:101]⁴² argued that “health and human rights had rarely been linked in an explicit manner, with only a few exceptions involving access to health care”. Discussions about health have not included human rights considerations, yet health and human rights are both powerful, modern approaches to defining and advancing human well-being. Human rights are divided into three areas:

- Civil and Political Rights;
- Social and Economic Rights; and
- Cultural and Environmental Rights.

According to Wignall [2001:17]⁴³ both positive and negative impacts of health policies, programmes and practices need to be considered. Health care is provided through many diverse public and private mechanisms. However, the responsibilities of public health are carried out in large measure through policies and programs promulgated, implemented, and enforced by, or with the support from the State.

⁴² Tarantola D. ,Health and Human Rights, 1998

⁴³ Wignall P. Human Rights 2001

Based on the understanding that human rights violations have health impacts, it is proposed that all violations, particularly when “severe, widespread, engendered important health effects, which must be recognized and assessed”. However, health impacts of rights violations go beyond in two ways; firstly the duration and extent of health impacts resulting from severe abuses of rights and dignity remain generally under appreciated. Secondly, it is increasingly evident that violations of human rights have negative effect on health⁴⁴.

2.4.2 HEALTH AND THE ENVIRONMENT

Section 24 of the Constitution⁴⁵ provides that “everyone has a right to an environment that is not harmful to their health and well being and to have the environment protected for the benefit of the present and future generations through reasonable legislative and other measures that prevent pollution and ecological degradation, promote conservation, secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development”. This provision acknowledges the relationship between environment, health and well-being. Section 24 (b) introduces” the notion of inter-generational equity by guaranteeing the right of citizens to have the environment protected for the benefit of both the present and future generations”.

The KwaZulu- Natal Act ⁴⁶ empowers the Minister to make regulations on matters related to public health. These areas include the production, distribution, storage and transportation of food; the sustainability of water for human consumption; the control of air, water, soil and noise pollution. This clearly establishes the link that exists between the environment, development and health. Previous environmental approaches were responding to the environmental problems rather than being proactive and preventing the development of environmental

⁴⁴ Tarantola D. ,Health and Human Rights, 1998

⁴⁵ The Constitution of the Republic of South Africa, (Act no. 108 of 1996). Section 24

⁴⁶ The KwaZulu- Natal Act (Act no 34 of 2000)

dangers. A good example of the new approach is the introduction and implementation of Tobacco Control Amendment Act⁴⁷.

The National Environmental Management Act⁴⁸ stipulates that the environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably. The Act further stipulates that for sustainable development to be successful, consideration of all relevant factors, which are as follows, are important:

- That negative impacts on the environment and the people;
- Environmental rights are anticipated and prevented, and where they cannot be attained altogether are minimized and remedied.

2.5 CO-OPERATIVE GOVERNANCE

A discussion of co-operative governance follows.

2.5.1 LEGAL FRAMEWORK FOR CO-OPERATIVE GOVERNANCE

Chapter 3 of the Constitution⁴⁹ stipulates that national, provincial and local spheres of government, which are independent, distinctive and interrelated, constitute government. It is further stipulated that in all three spheres within each sphere must preserve the peace, national unity and the indivisibility of the Republic, secure well being of the people of the Republic and co-operate with one another in mutual trust and good faith by:

- Fostering friendly relations;
- Assisting and supporting one another; and

⁴⁷ The Tobacco Amendment Act (Act no. 12 of 1999)

⁴⁸ The National Environmental Management Act (Act no. 107 of 1998)

⁴⁹ The Constitution of the Republic of South Africa, (Act no. 108 of 1996). Chapter 3

- Informing one another and consulting on matters of common interest as well as co-ordinate their actions and legislation with one another.

It is important to distinguish between three concepts that form the fundamental basis of the relations among the three government spheres. They are the distinctive, interdependent and inter-related aspects. The **distinctiveness** refers to "the autonomy, the degree to which each sphere is the final decision-maker on a particular matter that falls within its area of competence in regard to legislation, administration and finances". Secondly, provincial and local governments are **interdependent** in the sense that "each must exercise its autonomy to the common good of the districts and metros areas of shared impact, the provinces and the country as a whole, by joint work and co-operating with each other". Lastly, the three spheres are **inter-related** because they "all co-operate with one another in good faith and mutual trust for the benefit of the country as a whole"⁵⁰, the following has been noted as some factors that may have an impact on joint work among the three spheres of government:

- Lack of shared understanding on the status and relationships of various strategic, spatial and financial planning instruments resulting in their under-utilization and functions not being performed well;
- Insufficient and inefficient sharing of information;
- Insufficient awareness and understanding of the roles and responsibilities of various government actors in engaging with intergovernmental instruments;
- Insufficient support and supervision of local government ;and
- Inadequate enforcement and ineffective performance management.

In order to implement the provisions of Chapter three of the Constitution⁵¹, the National government passed the Intergovernmental Relations Framework Act⁵²

⁵⁰ Source: DPLG handbook for participation in local governance, 2004

⁵¹ The Constitution of the Republic of South Africa, (Act no. 108 of 1996).

⁵² The Intergovernmental Relations Framework Act (Act no. 13 of 2005)

which came into effect in August 2005. The focus of chapter 2 of the Intergovernmental Relations Framework Act is on structures to facilitate the intergovernmental relations. Chapter 3 provides guidance on conduct of intergovernmental relations and Chapter 4 deals with the resolution of intergovernmental disputes. The Municipal Systems Act⁵³ establishes the platform for municipal development planning in the context of cooperative governance. Chapter 5 of the Act identifies the Integrated Development Plan as the main mechanism for development in the local sphere. Section 24 (1) of the Act specifies that the planning undertaken by the municipality must be aligned with and complement the development plans and strategies of other affected municipalities and other state organs. Section 31 of the Act obliges the MEC for local government in the province to:

- Monitor the processes of municipal IDP preparation, implementation and the review in the province and assist municipalities where necessary in these actions;
- Facilitate the coordination and alignment of IDP's with the strategies and programmes of national and provincial organs of the state;
- Resolve disputes between local and district municipalities, neighbouring municipalities and local communities; and
- Comment on the IDP's that are prepared by municipalities in regard to their compliance with national and provincial legislation, policies and strategies.

2.6 ROLE OF NATIONAL GOVERNMENT

According to [Kadragie: 2005]⁵⁴ in her discussion paper towards improving the Co-operative Governance the role and function of each sphere is outlined. The Medium Term Strategic Framework (MTSF) prepared by the Presidency sets out

⁵³ The Municipal Systems Act (Act no. 32 of 2000)

⁵⁴ Kadragie A, Globalization and Human Rights,2005

government's priorities to meet national development challenges within the ambit of the normative framework over a three to five year period. It represents the government's perspective on key development challenges at a particular point in time. This high level statement of intent is taken further and elaborated upon in the Medium Term Expenditure Framework (MTEF), which indicates government's resource allocation to address the identified key developmental challenges in the three year period. The MTSF provides a basis for resource allocation in the MTEF prepared by Treasury. The Cabinet Clusters set priorities for their respective clusters in accordance with MTSF and MTEF on an annual basis. These priorities are implemented through departmental strategic plans that are prepared annually by all sector departments. To ensure focus and joint action by the three spheres of government in shared geographic spaces, national and provincial sector departments forge Implementation Protocols with district and metropolitan municipalities. The various spheres and national departments report annually to Cabinet on the extent to which they achieved the national development priorities as outlined in the MTSF, MTEF and NSDP.

2.7 ROLE OF PROVINCIAL GOVERNMENT

The Premier's Office in the various provinces prepare the Provincial Growth and Development Strategies (PGDS's) that provide an overview of each province's development needs and objectives broken down to impact on zone level, the province's proposed growth trajectory, sectors of comparative advantage in which the province plans to invest and the development proposals for each zone. The PDGS's are prepared within the framework of the national development objectives contained in the MTSF, NSDP and IDP's. The Provincial Treasury prepares the provincial MTEF that complies with requirements of the national MTSF, MTEF and PGDS. It provides the resource allocations for addressing the key development priorities in the province. Provincial Spatial Development Frameworks provide guidelines for debating and considering the implications of

investment options for forging alignment in the spatial location of investment in the province.

2.8 ROLE OF LOCAL GOVERNMENT

Integrated Development Plans (IDP's) that are prepared by the Offices of the Municipal Managers in terms of the Municipal Systems Act⁵⁵, focus on the sustainable development of municipalities, improvement in the lives of deprived communities, reintegration of fragmented settlements created by apartheid and the financial viability of municipalities. In their preparation of IDP's, municipalities take into consideration the development objectives contained in the PGDS, NSDP and the principles in the legal and policy framework. The Municipal Treasury prepares the municipal financial plan, which serves as a mid-term financial framework for managing municipal revenue and expenditure. The municipal Spatial Development Frameworks provide forums for considering the implications of investment options, forging alignment in the spatial location of investment in the municipality and providing record of these decisions.

The notion of co-operative governance is further advanced in the Municipal Systems Act⁵⁶, section 3(1) states that municipalities within the constitutional system of cooperative government must seek to integrate the exercises of their legislative and executive authority with the policies and institutional arrangements of the national and provincial spheres of government. They should also participate in organized local government in order:

- To seek solutions for the problems relating to local government generally;
- To develop common approaches for local government as a distinct sphere of government; and

⁵⁵ The Municipal Systems Act (Act no. 32 of 2000)

⁵⁶ The Municipal Systems Act (Act no. 32 of 2000) Section 3

- Facilitate compliance with the principles of cooperative governance and intergovernmental relations as set out in the in (s) 41 of the Constitution.

According to the Municipal Systems Act⁵⁷, a municipality is defined as a corporate entity within the local sphere of government exercising legislative and executive authority within an area determined in terms of the Municipal Demarcation Act⁵⁸. It, therefore, functions in its area in accordance with the political statutory and relationships between its structures. The Act, therefore, views municipality as having a separate legal entity, which excludes liability on the part of its community, residents and ratepayers for the actions of the municipality.

The Municipal Systems Act⁵⁹ focuses mainly on basic principles to give effect to the vision of developmental local government and places emphasis on the internal systems and management of the municipality and in this instance; it defines the legal nature of a municipality including the communities within the area.

According to the Constitution⁶⁰ local government's main objectives are to:

- Provide a democratic and accountable government for local communities by ensuring that provision of services is done in a sustainable manner.
- The promotion of social and economic development as well the environment that is safe and healthy to all citizens. Community participation and involvement is also encouraged by organized structures in the matters of local government.

The Presidential coordinating Committee and the technical Ministers and MEC's Council (MINMEC)⁶¹ as one of the various structures in promoting interaction and

⁵⁷ The Municipal Systems Act (Act no. 32 of 2000)

⁵⁸ The Municipal Demarcation Act (Act no. 27 of 1998)

⁵⁹ The Municipal Systems Act (Act no. 32 of 2000)

⁶⁰ The Constitution of the Republic of South Africa, (Act no. 108 of 1996).

cooperation within the three spheres of government have articulated what is expected from local government. In 2001 the Presidential Co-ordinating Committee resolved the following:

Strategic Objective 1

Building a strong local government sphere and enhancing its status within a stable co-operative governance framework

Resolution:

- a) To support and accelerate an initiative meant to comprehensively re-assess the current distribution of powers and functions (in Schedules 4 and 5 of the Constitution and other laws) across the three spheres of government.

Strategic Objective 2

Building stable institutional and administrative systems in local government

Resolution:

- a) To support the process initiated by the Ministry of Provincial and Local Government to resolve the issue of division of powers and functions between categories C and B municipalities by early 2002. The developments related to this process need to be effectively communicated to municipalities and the general public. national, provincial and local strategies, broader than the IDPs.

Strategic Objective 3

Deepening local democracy and accountability

Resolution:

⁶¹ Source: The Presidential coordinating Committee and the technical Ministers and MEC's Council (MINMEC) , 2001

- a) To endorse the extension and regularization of the Imbizo process this would mobilize people to participate in local government processes.

Strategic Objective 4

Improving and accelerating service delivery and economic development

Resolution:

- a) To urgently initiate the process of reviewing service delivery boundaries so that they are in line with the developmental boundaries of the local government.

Strategic Objective 5

Building financially viable local government

Resolution:

- a) To endorse and fast-track the work of the Inter-Ministerial Committee currently investigating the re-engineering of the intergovernmental fiscal system and local government finances, noting especially the review of the structure, scale of the equitable share of nationally raised revenue and the financial position of those municipalities that changed since demarcation including the legacy of municipal debt.

The developmental duties of the Local Government as espoused in the Constitution requires that a municipality must structure and manage its administration, budgeting and planning processes to give effect to basic needs of the community as well as to promote the social and economic development of the community. It is noted that the significance of the 2001 special Presidential Coordinating Committee meeting is that it identified specific strategic objectives to be achieved in order to realize the vision of developmental local government as set out in the Local Government White Paper.

2.9 DISASTER AND DISASTER MANAGEMENT

According to Downing [1991: 5] ⁶² a disaster is defined as a “serious disruption of the functioning of society, causing widespread human, material, or environmental losses, which exceed the ability of the affected society to cope using only its own resources’. Disaster is sometimes also used to describe a catastrophic situation in which the normal patterns of life have been disrupted and extraordinary, emergency interventions are required to save and preserve human lives or the environment. Disasters are frequently categorized according to their perceived causes and speed of impact.

According to the Disaster Management Act⁶³, a “disaster” means a progressive or sudden, widespread or localized, natural or human caused occurrence which:

- Causes or threatens to cause death, injury or disease damage to property, infrastructure or the environment or disruption of the life of a community and is a magnitude that exceeds the ability of those affected by disaster to cope with its effects using their only their own resources.

Disaster management means a “continuous and integrated multi-sectoral, multi-disciplinary process of planning and implementation of measures aimed at preventing or reducing the risk of disasters; mitigating the severity or consequences of disasters; emergency preparedness; rapid and effective response to disasters as well as post disaster recovery and rehabilitation” Disaster Management Act⁶⁴.

⁶² Downing T. Vulnerability to hunger in Africa: A climate change perspective, 1991

⁶³ Disaster Management Act, (Act no. 57 of 2002)

⁶⁴ Disaster Management Act, (Act no. 57 of 2002)

Fuggle and Rabie [1992:9]⁶⁵ are of the view that “human agency plays a role in whether or not natural phenomena do or do not become disasters and hence disasters are not brought about solely by natural causes”. This means that their impact is random.

The White Paper on Disaster Management⁶⁶ stipulates that the primary responsibility for disaster management in South Africa rests with government. Its aim is to give effect to various rights contained in the Bill of Rights of the Constitution which include, among others, the right to life, human dignity, environment, health care, food, water and social security. In terms of section (41) (1) (b) of the Constitution of South Africa, all spheres of government are required to “secure the well-being of the people of the Republic.

Part A of schedule 4 of the Constitution⁶⁷ identifies disaster management and related issues as areas of concurrent national and provincial legislative competencies. This means that both national and provincial government has powers and responsibilities in relation to disaster management. Local government is also empowered to deal with a number of functions, which are closely related to disaster management under Part B of schedule 4 and 5 of the Constitution⁶⁸. In addition (152) (1) (d) of the Constitution⁶⁹ requires local government to promote a safe and healthy environment.

The Disaster Management Framework⁷⁰ provides for the establishment of disaster management centers. These are to be found at national, provincial and local government level. The framework is provided for the design of national,

⁶⁵ Fuggle & Rabie M.A. Environmental Management in South Africa, 1992

⁶⁶ The White Paper on Disaster Management, Government Gazette 1999

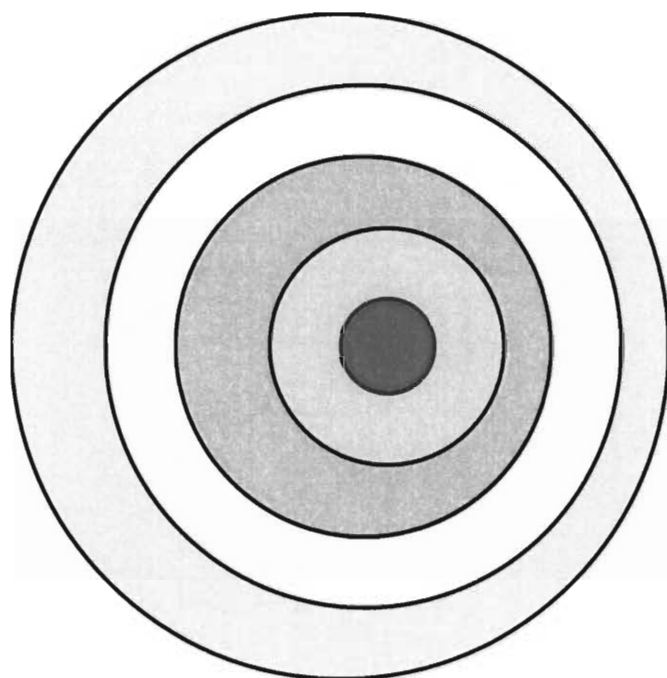
⁶⁷ The Constitution of the Republic of South Africa, (Act no. 108 of 1996).

⁶⁸ The Constitution of the Republic of South Africa, (Act no. 108 of 1996).

⁶⁹ The Constitution of the Republic of South Africa, (Act no. 108 of 1996).

⁷⁰ Disaster Management Framework, 2004

provincial and municipal disaster management plans. The policy framework recognizes the capacity deficiencies at local government level. Provision is, therefore, made for provincial government to capacitate and support disaster management planning and disaster management centres in municipalities.



| | |
|--|-----------------------------------|
| | Development Planning |
| | Integrated development planning |
| | Land use management systems |
| | Municipal Infrastructure Planning |
| | Disaster management |

Figure: 2.2 Disasters management in the provincial development planning context (KZN IDP Planning guidelines 2006)

Disaster management in South Africa is part of the developmental planning process. It relies on existing municipal infrastructure, skilled municipal staff and the existence of adequate equipment and other support systems. Provincial government has established support systems to assist municipalities in the execution of their disaster management mandate. In addition to this, provincial government also has its own provincial disaster management centre. All these institutions are functioning in terms of Disaster Management Act⁷¹. Disaster management centre is expected to implement the provincial disaster management policies as per the District Management Plan. In some areas of KZN, disaster management infrastructure is in place but a very small section of community can access it. This is brought about by the settlements patterns, which up to this stage reflect the impact of apartheid planning.

It can be deduced that in the public health system, public health is directed towards preventing epidemics and the spread of disease, protection against environmental hazards, preventing injuries, promoting and encouraging healthy behavior as well as responding to disasters by assisting communities in recovering and ensuring the quality and accessibility of health services.

2.10 SUMMARY OF THE CHAPTER

In this chapter, the various definitions of public health, public health law as well as their distinctiveness were outlined. Health as defined by World Health Organizations WHO [1989]⁷² was further linked to section 27 of the Constitution⁷³ which deals with Health Rights. Health was discussed in relation to legislation as well as to environment. The impact of health legislation on Human Rights was highlighted.

⁷¹ Disaster Management Act, (Act no. 57 of 2002)

⁷² World Health Organizations WHO [1989]

⁷³ The Constitution of the Republic of South Africa, (Act no. 108 of 1996).

The importance of co-operative governance in relation to disasters was articulated. In accordance with Disaster Management Act⁷⁴, disasters manifest themselves in all spheres of government. The three spheres of government all have a role to play when disasters occur. The chapter highlighted the legislative requirement of ensuring that Disaster Management Plan is incorporated into Municipality's Integrated Development Plan. The chapter discussed the Presidential Resolutions as they were outlined in (MINMEC).

⁷⁴ Disaster Management Act, (Act no. 57 of 2002)

CHAPTER 3

LEGISLATIVE AND CONSTITUTIONAL BASIS FOR DISASTER MANAGEMENT

3.1 INTRODUCTION

The Disaster Management Act ⁷⁵ calls for all three spheres of government to have a role in disaster management. This chapter outlines the evolution of local government. It also explores the role of (amakhosi and other stakeholders in dealing with disasters)

3.2 HISTORY OF LOCAL GOVERNMENT

The development of municipalities can be traced in two phases. The first phase, being the pre-1994 dispensation, where municipalities were established in areas outside black communities. These were within the jurisdiction of the Black Administration Act ⁷⁶ and the Black Authorities Act⁷⁷ . Secondly the post 1994 phase introduced the integration of previously excluded communities and entities into the newly demarcated wall -to- wall municipalities⁷⁸.

Under the apartheid government, there was local government in towns and cities but not in rural areas. This was organized according to racial lines. Therefore, municipalities existed for the White areas in the towns. Black local authorities were established in the townships. Opposition to the old system of government

⁷⁵ Disaster Management Act, (Act no. 57 of 2002)

⁷⁶ Black Administration Act (Act no. 38 of 1927)

⁷⁷ Black Authorities Act (Act no.68 of 1951).

⁷⁸ Source: (Manual on Local Government and Democracy, 2001)

led to people refusing to pay for services and some of the Black Local Authorities were disbanded⁷⁹.

The national transition in South Africa began with the release of political leaders and the unbanning of all political organizations in 1990. Under the old system, all tiers of government were racially based and exclusive. There was separate representation for so-called Indians, Coloureds and Whites in Parliament and Blacks were denied access to national government. Provincial government was appointed by national government while local government was fragmented with racially exclusive local authorities established for different racial groupings in urban areas. There was no substantive local government in rural areas.⁸⁰

The unbanning of political parties and the release of political leaders in 1990, led to national negotiations between all major political parties and organizations to end apartheid and create a new democratic, non-racial dispensation. The negotiations culminated in the approval of the Interim Constitution by the Multi-Party Negotiating Forum at the end of 1993 and its adoption by Parliament. The step paved the way for the elections of non-racial and democratic governments at national and provincial levels, which were held in April 1994.

However, local government had not been a central concern of the Multi-Party Negotiating Forum. The negotiations on the future of local government took place in the Local Government Forum (LGNF). This body was created in March 1993 and included non-statutory members led by South African National Civics Organisation (SANCO) and statutory members that included organized national, provincial and local government. The negotiations led to agreement on a Local Government Transitional Act⁸¹, which dealt with local government. The LGTA

⁷⁹The Local Government Transitional Act (Act, no 209 of 1993).

⁸⁰ Kendall A. , Partners in Transformation: A resource Book, 1991

⁸¹ Local Government Transitional Act (LGTA), (Act no.209 of 1993) and Chapter 10 of the interim Constitution

was, therefore, passed by Parliament in December 1993, Local Government Transitional Act⁸² .

In 1993, the Local Government Transition Act provided the legislative framework for a three-phase process of transition towards a new local government system. Under this Act, new forms and structures of government such as Transitional Councils and Municipalities were created to respond to the increasing demand of amalgamation of former racially based structures. It is argued that even after the elections of 1994 and the creation of nine provinces in the same year, the interim phase of the transition showed limitations and constraints of the new institutional framework to address the disparities and the inequalities of the past.

A three Phase Change Process was as follows⁸³:

(A) PRE- INTERIM PHASE

During this phase, the local negotiating forums were established on an inclusive basis and negotiated the establishment of appointed transitional councils, which unified the previously racially divided areas. They were based on an equal number of representatives from areas previously controlled by white local authorities and Indian and Colored management committees (commonly known as statutory) and non statutory areas (the remaining areas especially black local authority areas and informal or squatter settlements not under the jurisdiction of white local authorities) which governed towns and cities and prepared for local elections.

⁸² Local Government Transitional Act (LGTA), (Act no. 209 of 1993).

⁸³ Source: Guidelines on Local Government elections in South Africa 1995/6)

(B) INTERIM PHASE

The interim phase was to follow non-racial local elections scheduled for November 1995, to last for three to five years. Elected local authorities were created with distribution of seats being on the basis of a 50/50 arrangement, 50% of seats to represent the so-called statutory areas and 50% of the seats to represent the so-called non-statutory areas.

(C) FINAL PHASE

When the Constitution was finally in place and provincial governments had established the framework of local authorities in their areas, elections were to be held for final local government within the framework of the Constitution and provincial legislation. The elections were to mark the end of the interim phase and create a truly democratic and representative local authority.

According to Pillay and Liebenberg [996:101]⁸⁴ the following are some of the values and principles for local government. The local government must:

- promote a high standard of professional ethics in its overall system of government and management;
- use its resources efficiently and effectively;
- be development oriented;
- promote fairness, reasonableness and impartiality, and have no bias;
- respond to the needs of its people;
- promote public participation in the management of its affairs;
- be accounttable to its electorate and where necessary, to other stakeholders,
- promote transparency and supply the public with and sufficient information,
- promote good human resource development practices and

⁸⁴ Pillay & Liebenberg , Socio- Economic Rights in South Africa: A Resource Book, 2000

- be broadly representative of the population it serves.

The Constitution⁸⁵ together with the Municipal Structures Act⁸⁶ established a system of categories regarding municipalities as follows:

- **Category A** - this category is the “metropolitan area”: One municipality that has the exclusive authority to administer and make rules in its area.
- **Category B** - this category is the “local municipality”: It shares that authority in its area with the “district municipality” of the district in which it falls.
- **Category C**- this category is the “district municipality”: It has authority to administer and make rules in an area, which includes more than one local municipality.

The Constitution stipulates that national legislation must give rules for determining when a municipality will be a metropolitan and when a certain area will consist of a district municipality together with a number of local municipalities.

3.3 RELATIONSHIP BETWEEN NATIONAL, PROVINCIAL AND LOCAL GOVERNMENT

With the signing of the new Constitution in 1996, South Africa adopted political and administrative system based on the innovative concept of spheres of government. This also established new relations between public institutions, government structures and civil society. All spheres must observe the principles of co-operative governance and intergovernmental relations, which impose on them” to exercise their powers and perform their functions in a manner that does not encroach on the geographical, functional or institutional integrity of

⁸⁵ The Constitution of the Republic of South Africa, (Act no. 108 of 1996).

⁸⁶ The Municipal Structures Act (Act no.117 of 1998)

government in another sphere “and to “co-operate with one another in mutual trust and good faith⁸⁷

Most importantly, the Constitution regulates the transformation of the local government system, which has been given a pivotal and distinctive role in the promotion of social development and democracy at a local level. Chapter 7 of the Constitution sets the role in the developmental local government process. According to Municipal Systems Act,⁸⁸ developmental local government refers to “local government that is committed to working with citizens and local communities to find sustainable ways to meet their needs and improve the quality of their lives.

According to The White Paper on Local Government⁸⁹, developmental government must play a central role in representing local communities, protecting human rights and meeting the basic needs of all people. It must focus its efforts and resources on improving the quality of life in the local communities especially those members and groups that are most often marginalized or excluded such as the poor, children, women, disabled and the elderly.

3.4 INTERGOVERNMENTAL RELATIONS

The approach to disaster management set out in the Disaster Management legislation clearly indicates the need for all structures and spheres of government to function in a co-operative manner as set out in the provisions of Section 41 of the South African Constitution⁹⁰. The Disaster Management Framework⁹¹ calls for the role of traditional leadership in disaster management. The Act specifically expects traditional leadership structures to introduce and promote indigenous methods in the disaster management process. In order for this to happen, the

⁸⁷ Source: (Manual on Local Government and Democracy, 2001).

⁸⁸ The Municipal Systems Act, (Act no.32 of 2000)

⁸⁹ The White Paper on Local Government, 1999

⁹⁰ The South African Constitution (Act No. 108 of 1996).

⁹¹ The Disaster Management Framework , 2004

Institution of Traditional Leadership must be recognised as part of government. This is covered in Section 12 of the Constitution. Following this recognition, intergovernmental relations can then be put in place to ensure that there is a combined system of governance which incorporates traditional leadership and which focuses on developing appropriate disaster management measures. This is illustrated as follows:

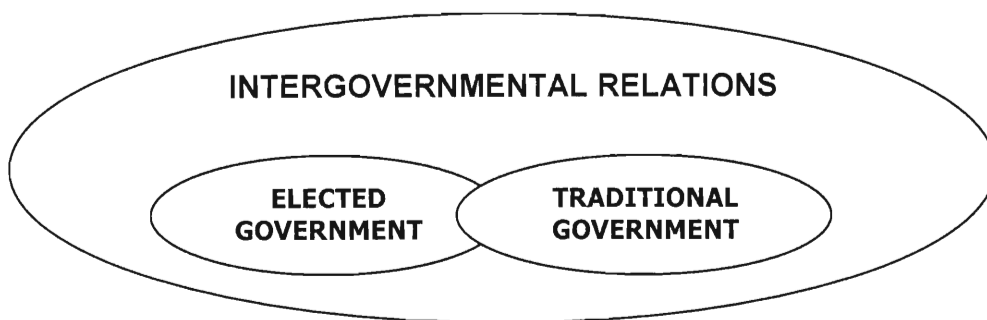


Figure: 3.1 proposed structure on Intergovernmental Relations

Source: Adapted from Disaster Management Summit (May 2006)

With regard to disaster management, intergovernmental relations must be established between local government and the Institution of Traditional Leadership. Before this can be achieved, both the local government and traditional leadership structures must be understood. The local government structure is clearly set out in the Municipal Structures Act⁹². At this stage there is no clear documentation of complete structures of traditional leadership.

3.5 THE ROLE OF TRADITIONAL LEADERS ('AMAKHOSI')

The local government functions in the rural areas prior to the implementation of the Local Government Transitional Act⁹³ were managed by traditional communities and regional authorities. The Transitional Act⁹⁴ provided the

⁹² The Municipal Structures Act (Act no.117 of 1998).

⁹³ The Local Government Transitional Act (Act no.209 of 1993)

⁹⁴ The Local Government Transitional Act (Act no 209 of 1993)

participation of Traditional Leaders in Transitional Regional Councils during the interim phase (1994 to 2000). In reality, many traditional leaders did not actively participate in these local government structures and these structures co-existed side by side with traditional institutions. According to Rodney [1995: 161]⁹⁵ service delivery that took place had no clear framework for co-operation and the division of powers and functions existed.

The notion of wall-to-wall democratically elected local government was introduced by the Constitution. The Municipal Demarcation Act⁹⁶ read with Chapter 7 of the Constitution, especially section 151 (1) gave effect to these wall-to-wall municipalities. During the demarcation process, traditional leadership raised concern that in a number of cases the jurisdictional areas of traditional authorities were divided between different municipalities.

Notwithstanding this approach, provision was made for the interim continuation of the participation of traditional leadership in local government until the implementation of the final phase of (fully elected) local government (5 December 2000). In terms of section 81 of the Municipal Structures Act⁹⁷, provision was initially made for the membership of traditional leaders in a non-voting capacity with an upper ceiling of 10% of the membership of such a council. This indicated a policy shift: while traditional leaders were in a transitional phase, entitled to significant representation and full voting rights, the Municipal Structures Act⁹⁸ limited both the extent of their membership and their role (which became advisory in nature).

The final phase of democratically elected local government was introduced when the Municipal Structures Act⁹⁹ was implemented as from 5 December 2000. It

⁹⁵ Rodney G. Working Together Towards Human Rights Violations, 1995

⁹⁶ The Municipal Demarcation Act (Act no. 27 of 1998)

⁹⁷ The Municipal Structures Act (Act no. 117 of 1998)

⁹⁸ The Municipal Structures Act (Act no. 117 of 1998)

⁹⁹ The Municipal Structures Act⁹⁹ (Act no. 117 of 1998)

provided for the participation of traditional leaders in the proceedings of District and Local Councils, the regulation of their participation and the ceremonial role of traditional leaders in the affairs of a District and Local Council.

According to Reddy and Ray [2003: 264]¹⁰⁰, the traditional structures should become an integral part of the local governance processes and furthermore, development issues. They further argue that strong linkages should be developed with the local community, traditional structures and elected councilors.

Reddy and Ray [2003: 275-278]¹⁰¹ assert that present and future challenges, with regard to local governance in rural areas, South Africa has experienced historical backlogs in service delivery and the institution of traditional leadership. Lack of infrastructure i.e. roads, water and electricity is a major hindrance to service delivery in rural areas. It is suggested that there are basic principles guiding the establishment and development of viable local government structures in the rural areas, which include the following:

- Funding of local government; and
- Landownership and the clear roles that will be played by various stakeholders who constitute rural communities.

3.6 NATIONAL DISASTER MANAGEMENT FRAMEWORK

The Disaster Management Act¹⁰² provides for:

- An integrated and coordinated disaster management policy that focuses on preventing or reducing the risk of disasters, mitigating the severity of disasters, emergency preparedness, rapid and effective response to disasters, and post disaster recovery;

¹⁰⁰ Reddy and Ray 2003:, Grassroots Governance: Chiefs in Africa and Afro- Caribbean,(IASIA)

¹⁰¹ Reddy and Ray 2003:Grassroots Governance: Chiefs in Africa and Afro- Caribbean,(IASIA)

¹⁰² The Disaster Management Act (Act no. 57 of 2002)

- The establishment of national, provincial and municipal disaster management centers; and
- Matters relating to these issues.

The Act also recognizes the wide-ranging opportunities in South Africa to avoid and reduce disaster losses through the concerted energies and efforts of all spheres of government, civil society and the private sector. The national disaster management framework is the legal instrument specified by the Act to address such needs for consistency across multiple interest groups by providing a coherent, transparent and inclusive policy on disaster management appropriate for the Republic as a whole¹⁰³.

The National Disaster Management Framework ¹⁰⁴places explicit emphasis on the disaster risk reduction concepts of disaster prevention and mitigation as the core principles to guide Disaster Management in South Africa. The National Disaster Management framework also informs the subsequent development of provincial and municipal disaster management frameworks and plans that are required to guide action in all spheres. The framework comprises six Key Performance Areas (KPA's) that are outlined in the table below:

¹⁰³ The Disaster Management Act (Act no. 57 of 2002)

¹⁰⁴ The National Disaster Management Framework, 2004

| KEY PERFORMANCE AREA | INTENTION |
|---|--|
| 1. Institutional capacity for disaster management | It focuses on establishing the necessary institutional arrangements for implementing disaster management within the national, provincial and municipal spheres of government. It specifically addresses the application of the principles of cooperative governance for the purposes of disaster management. |
| 2. Risk assessment and monitoring | It addresses the need for disaster risk assessment and monitoring to set priorities, guide risk reduction action and monitor the effectiveness of efforts. |
| 3. Disaster Management planning and implementation | It introduces disaster management planning and Implementation to inform developmental-oriented approaches, plans programmes and projects that reduce disaster risk. It also addresses requirements for the alignment of disaster management frameworks and planning within all spheres of government. |
| 4. Disaster response and recovery, and rehabilitation and reconstruction. | It presents implementing priorities concerned with disaster response and recovery and rehabilitation. It also addresses requirements in the Act for an integrated and coordinated policy that focuses on rapid and effective response to disaster and post disaster. |
| 5. Public awareness, education, training and research. | It addresses disaster management priorities in public awareness, education, training and research. It addresses requirements to promote and support a broad based culture of risk avoidance through strengthened public awareness and responsibility. |
| 6. Monitoring, evaluation and improvement | It presents processes for evaluation, monitoring and improvement of disaster management. |

Table 3.1: Key performance areas (Disaster Management Framework: 2004)

According to Disaster Management Framework¹⁰⁵, section 5 empowers the Minister designated under section 3, to establish a national disaster management framework, after considering the committees recommendation. This must be done by notice in the Government Gazette. The framework may be amended from time to time. However the Minister may not amend or establish such framework without publishing the particulars of such proposed framework in the Government Gazette for public comment. The framework aims at setting a policy on disaster management that is coherent, transparent, inclusive and appropriate for the Republic as a whole. In addition to that, the disaster management policy should take into account disasters of different kinds, severity and magnitude. The policy should facilitate the Republic's co-operation in international disaster management as well as Regional co-operation in disaster management in Southern Africa. The policy should further give effect to the application of co-operative governance on management of disasters among spheres of government.

The National Disaster Management framework identifies intergovernmental relations as a condition for integration. To this end, the Disaster Management Act makes provision for the establishment of an Intergovernmental Committee on Disaster Management (National) and the Inter-MEC for Disaster Management (Provincial). The National Disaster Management prioritizes emergency preparedness and effective response as an outcome of planning and coordination. The provincial Inter- MEC Committee for Disaster Management is responsible for the following:

¹⁰⁵ The National Disaster Management Framework, 2004

- (1) The co-ordination of disaster management activities among all spheres of government in the province thus giving effect to the principles of cooperative governance and
- (2) Accountability to Cabinet on issues relating to disaster management as well as on the establishment of a Disaster Management Framework.

According to the Disaster Management Act,¹⁰⁶ the representation on the committee should be at the MEC level in the following portfolios:

- Agriculture and Environmental Affairs;
- Education;
- Economic Development and Finance;
- Health and Government Affairs;
- Local Government, Housing and Traditional Affairs (Chairperson);
- Premier;
- Transport and Safety and Security;
- Welfare; and
- Works.

3.6.1 PROVINCIAL DISASTER MANAGEMENT ADVISORY FORUM

The Provincial Emergency Reconstruction Co-ordinating Committee is being constructed as the Provincial Disaster Management Forum with the following structures:

- The co-ordination of actions of Disaster Management role players in matters relating disaster management in the Province;
- The facilitation of consultation among disaster management role players;
- The organization of disaster management resources;

¹⁰⁶ The Disaster Management Act (Act no. 57 of 2002),

- The deployment of disaster management resources;
- The improvement of the performance of provincial disaster management resources; and
- The monitoring of disaster management activities.

Representation on the Provincial Disaster Management Advisory Forum should at least be at the level of a Municipal Manager in respect of municipalities, at the level of Head of Department in respect of provincial and national departments and at the level of senior management in respect of selected non-governmental disaster management role players Disaster Management Act¹⁰⁷.

3.7 DISASTERS AND DEVELOPMENT

In order to understand development, [Burton: 109]¹⁰⁸ is of the view that the development and the environment are inseparable. The recent attempts at fostering an integration of environmental considerations into development planning are an explicit recognition of the failure of the development approaches.

The following are raised as the environmental challenges in South Africa:

- The degraded environment;
- Inadequate policy of environmental protection; and
- Absence of mass-based environmental movement.

It is argued that for a long time the cause and effect relationship between disasters, social and economic development was ignored. Disasters were seen in the context of emergency response and not as part of long-term programming.

¹⁰⁷ The Disaster Management Act (Act no. 57 of 2002).

¹⁰⁸ Burton I., *The environment as a Hazard*, 1993

The knowledge that emanated from understanding disaster in terms of development indicated the four basic themes¹⁰⁹

- Disasters development programming destroying years of development initiatives;
- Rebuilding after disaster provides significant opportunities to initiate development programmes;
- Development programs can increase an area's susceptibility to disasters; and
- Development programmes can be designed to decrease the susceptibility to disasters and their negative consequences.

According to Alexander [1993:105]¹¹⁰ effects of natural disasters of meteorological origins such as floods, tropical storms and droughts, generally affect a larger geographical area than the geological disasters. However, due to population density, the number of victims resulting from geological natural disasters, such as earthquakes, is greater than those resulting meteorological phenomena.

Areas that are underdeveloped predispose a population to the adverse consequences of natural and other hazards. Contrary to that is the development process, which may increase vulnerability to disasters. Linkage has been established between poverty, marginalization, overpopulation and vulnerability. Vulnerability mostly derives from poverty hence poor people are more likely to live in vulnerable areas¹¹¹. Lack of access to information and education often has great implications for vulnerability. It is argued that poor people comprised of the vulnerable group which include mostly women, elderly, children, the disabled, which explains that such a group would not be in a position to be able to organize

¹⁰⁹ Source: (Disasters and Development UNDP Seminar notes, 2003)

¹¹⁰ Alexander W.J.R , Flood Risks Reduction Measures, 1993:

¹¹¹ Globler R. , A framework for developing losses arising from Natural Catastrophes in South Africa, 1993

effectively and collectively to reduce risk. The after effects of disasters like malnutrition and chronic illnesses put the vulnerable group at risk.

There are several factors related to development that are likely to increase the risk of future occurrences. For, instance, population growth increases the pressure for residential, agricultural, commercial and industrial development. This in turn, results in the occupation of marginal or” at risk “areas such as arid zones and flood plains. The challenge is to minimize the risk to these environmentally vulnerable areas¹¹².

According to the Kwa Zulu –Natal Poverty Reduction Strategy¹¹³, spatial access to infrastructure and services in the rural areas presents a challenge to those communities and creates further hurdles for assisting these communities in combating poverty.¹¹⁴ The (statistics from census 2001) data indicated that 61% of the population in KwaZulu Natal utilizes electricity as a source of lighting with 35% using candles and 3% are reliant on paraffin. Poor sanitation facilities and electrification is prevalent in rural areas as opposed to urban areas. This is an indication of the disparity in terms of access to services in the rural areas and contributes to poverty related illnesses¹¹⁵.

The White Paper on Disaster Management¹¹⁶ highlighted the following risk reduction strategies that can be incorporated into development planning:

- Developing integrated disaster management strategies with emphasis on risk reduction;
- Adequate allocation of resources to local government to ensure that the most vulnerable communities can depend on reliable disaster management services;

¹¹² Goldthorpe J.E. The Sociology of the Third World, 1984

¹¹³ The Kwa Zulu –Natal Poverty Reduction Strategy, 2003

¹¹⁴ Source: Kwa Zulu –Natal Poverty Reduction Strategy 2003

¹¹⁵ Statistics South Africa : Census 2001

¹¹⁶ The White Paper on Disaster Management – Government Gazette ,1999

- Establishing creative formal and informal initiatives that encourage risk avoidance behavior on the part of individuals, the private sector and the government;
- Ensuring that South Africa's transportation, telecommunications, electricity and public sector infrastructure networks are able to withstand expected natural and other threats;
- Setting and enabling the implementation of minimum building standards, especially for low cost housing, to ensure structural soundness to withstand the impact of extreme weather patterns; and
- Ensuring that development of marginal and environmental fragile areas is appropriate and properly planned.

3.8 LEGAL AND POLICY FRAMEWORK FOR INTEGRATED DEVELOPMENT PLANNING

According to section 152 and 153 of the South African Constitution¹¹⁷, local government is responsible for the development process in the municipalities, as well as municipal planning. The constitutional mandate relates its management, budgeting and planning functions to its objectives gives a clear indication of the intended purposes of the municipal integrated planning in ensuring sustainable provision of services, promotion of social and economical development as well as the promotion of a safe and healthy environment.

The White Paper on Local Government is in line with the spirit of the Constitution as it considers integrated development planning explicitly as a tool for developmental local government. It further outlines why integrated development planning is considered as a necessary tool to achieve these purposes. Among other duties that the integrated development planning will do, would be to ensure that actions are prioritized around urgent needs. The Municipal Systems Act¹¹⁸

¹¹⁷ The South African Constitution (Act no. 108 of 1996)

¹¹⁸ The Municipal Systems Act¹¹⁸ (Act no.32 of 2000)

also confirms the nature of the Integrated Development Planning (IDP) as a legal requirement.

The purpose of integrated development planning is faster and more appropriate delivery of services and providing a framework for economic and social development in a municipality. Integrated development planning can contribute towards eradicating the development legacy of the past, making the notion of developmental local government work and fostering co-operative governance¹¹⁹.

3.8.1 UNDERSTANDING INTEGRATED DEVELOPMENT PLANNING

Integrated Development Planning is a process through which municipalities prepare a strategic development plan, for a five-year period. The Integrated Plan is a product of the Integrated Development Process. The IDP is a principal strategic planning instrument, which guides and informs all planning, budgeting, management and decision making in a municipality¹²⁰. According to the Municipal Systems Act¹²¹ all municipalities (i.e. Metros, District Municipalities and Local Municipalities) had to undertake an integrated development planning process to produce integrated development plans. As the IDP is a legislative requirement, it has a legal status and it supercedes all other plans that guide development at a local government level.

Preparing an integrated development planning not only relates to its legal status, but under the new Constitution, municipalities have been awarded major developmental responsibilities to ensure that the quality of life for its citizens is improved. The new role for local government includes provision of basic services, creation of jobs, promoting democracy and accountability and eradication of

¹¹⁹ Source: Department of Provincial and Local Government: A handbook for participation in local governance, 2004).

¹²⁰ Source: Information Package on IDP by Department of Traditional & Local Government Affairs: 2001)

¹²¹ The Municipal Systems Act(Act no. 32 of 2000)

poverty. Preparing and having IDP therefore assist the municipality to be able to manage the process of fulfilling its developmental responsibilities.

The Information Package¹²² on IDP asserts that IDP is made up of the following core components:

- The Analysis: where an assessment of the existing level of development is done.
- Developmental Strategies: which include municipality's vision, council's developmental priorities and objectives.
- Projects
- Integration: which include the following:
 - A spatial development Framework;
 - Disaster Management Plan;
 - Integrated Financial Management Pan (both capital and operational budget);
 - Other integrated programmes; and
- Approval

The relationship between disaster management planning and other plans required in the context of the IDP can be summarised as follows:

¹²² Source: Department of Traditional & Local Government Affairs (2001)

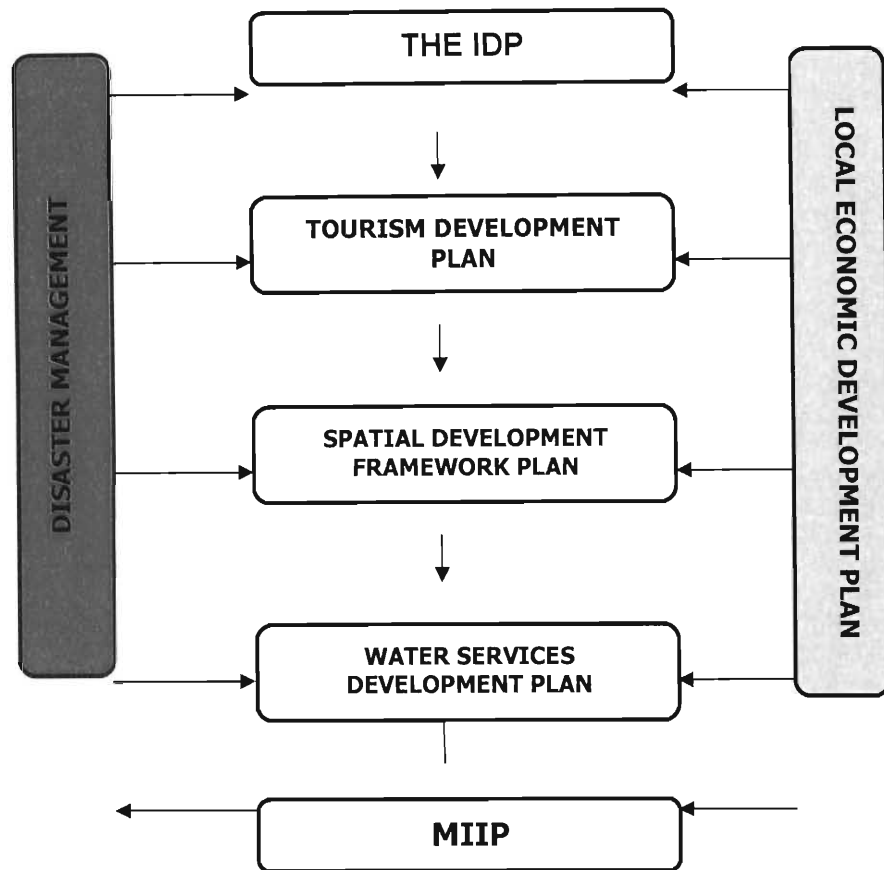


Figure 3.2: Relationship between Disaster Management and other plans (Resolution 4: KZN Disaster Management Summit, 25-26 May 2006)

However if one reviews the process of IDP with regard to integration, where projects have been identified, the municipality must make sure that they are in line with the municipality's objectives and strategies, and also with the resource framework and comply with the legal requirements. Furthermore, this phase is an opportunity for the municipality to harmonize the projects in terms of its contents, location and timing in order to come up with a consolidated and integrated programme. The outputs of this phase are an operational strategy, which includes among other plans, the Disaster Management Plan Department of Provincial and Local Government.¹²³

¹²³ Source: A handbook for participation in local governance, 2004).

3.9 ROLES AND RESPONSIBILITIES OF DISTRICT AND LOCAL MUNICIPALITIES IN RESPECT OF DISASTER MANAGEMENT

The Disaster Management Policy Framework¹²⁴ has three definite response centres, which are captured below as follows:



Figure: 3.3 Disaster Management Centres (Disaster Management Framework, 2004)

According to the Disaster Management Bill¹²⁵, the role of local government in Disaster Management is emphasized in the White Paper, where it is noted that municipal authorities are usually the first at the scene of a disaster and assume the initial control. It further recommends that funding mechanisms should encourage response at the most localized level of responsibility. Section 23 of the Bill which covers the declaration of disasters, states that until the disaster is classified by the National Disaster Management Centre, the disaster must be regarded as a local disaster. However this places a particular role on the response of local government.

With regard to District and Local Municipalities, the Bill states that within the local government sphere metropolitan and district municipalities carry primary responsibility for the co-ordination and management of disasters. District

¹²⁴ The Disaster Management Policy Framework, 2004

¹²⁵ The Disaster Management Bill

municipalities are, therefore, required to establish disaster management centers, whereas local municipalities are not. A challenge with these approaches is that the nature of disastrous event suggests that the immediate response should be provided at the most localized level possible. This response may occur without the formal authorization of the relevant district municipality. This is underlined by the fact that some district municipality offices are located far away from municipalities within their jurisdiction. It should be noted that some municipalities particularly those in rural areas, lack the resources and expertise to respond immediately and effectively to disastrous events.

Recommendations in assessing the Bill was that consideration should be given to Chapter 5 with regard to the following:

- Local municipalities should be the first to respond to local disasters and be primary responsible for the coordination and management of local disasters, with the support provided by the district municipality;
- Where local municipalities lack the necessary capacity, primary responsibility for disaster management should be located with the district; and
- Poorly capacitated local municipalities should be identified during the development of the district's disaster management framework according to clear criteria, and any other disagreements between district and local municipalities could be referred to the relevant MEC for local government.

According to Municipal Structures Act¹²⁶ a district municipality as a whole, is responsible for developing plans including framework for integrated development plans of all municipalities in the area of the district municipality. The Municipal Structures Act¹²⁷ further states that this framework binds both the district

¹²⁶ The Municipal Structures Act¹²⁶ (Act no.117of 1998)

¹²⁷ The Municipal Structures Act¹²⁷ (Act no.117of 1998)

municipality and the local municipalities in the area of the district municipality. The District Municipality IDP Framework should:

- Identify the plans and the planning requirements binding in terms of national and provincial legislation on the district and local municipalities;
- Identify all matters that must be included in the district IDP and the local IDP's and that require alignment;
- Specify the principles to be applied and approach to be adopted in respect of those matters; and
- Determine procedures for consultation between the district and the local municipalities in the process of drafting their respective IDP's as well as procedures to effect changes to the framework.

According to Reddy and Ray [2003: 264]¹²⁸ the following are raised as challenges that are faced by the District Councils:

- Funding;
- Capacity Development;
- Provision of basic infrastructure; and
- Increasing politicization of activities.

3.10 SUMMARY OF THE CHAPTER

In this chapter the history of local government is outlined from the pre 1994 phase to the post 1994. Forms of government that existed under Apartheid were discussed. The transition process, which entailed the following phases, was clearly articulated i.e. pre-interim, interim as well as the final phase, which was marked by the democratic elections held in December 5, 2000.

¹²⁸ Reddy and Ray: Grassroots Governance: Chiefs in Africa and Afro- Caribbean, 2003 (IASIA)

Categories of municipalities as outlined by the Municipal Structures Act¹²⁹, as well as the relationship between National, Provincial and Local governments were discussed in detail. The chapter looked at the Intergovernmental relations, specifically the role of *Amakhosi*- Traditional leaders as well as the elected (democratically) councilors in respect of matters that affect local municipality.

In accordance with the National Disaster Management Framework, which places more emphasis on disaster reduction, concepts of prevention are regarded as core principles to guide Disaster Management in South Africa. The chapter also focused on relationship between development and disasters. The Integrated Development Plan of the Municipality is contextualized in development planning of the District as well as Local Municipalities.

¹²⁹ The Municipal Structures Act, 1998 (Act no 117 of 1998)

CHAPTER 4

DISASTER MANAGEMENT IN THE SOUTH AFRICAN CONTEXT

4.1 INTRODUCTION

This chapter explores the disasters that have been experienced in South Africa. According to the White Paper on Disaster Management, disasters in South Africa have been dominated by localized incidents such as veld fires, seasonal flooding and accidents in the mining industry. At a national level, drought has affected macro-economic growth, as well as the livelihoods of especially the poorer sections of the population living in rural areas. Case studies as well as strategies adopted in mitigating disasters will be outlined.

4.2 RATIONALE FOR DISASTER MANAGEMENT ACT (ACT NO. 57 OF 2002)

The rationale for Disaster Management legislation was that the South African legislation that was in place before the Act was promulgated, did not deal adequately with the disaster management. Disasters were only viewed after they had occurred and there was no plan that focused on prevention and risk reduction. There was confusion around the level on which decision were taken for disaster declarations. According to the Civil Protection Act¹³⁰, the Minister for Provincial Affairs and Constitutional Development is the only one empowered to declare a “state of disaster” and the roles for other ministers are not mentioned. The Fund Raising Act¹³¹ further provides for the “declaration of disaster “by President in order to provide relief to victims of disasters.

¹³⁰ The Civil Protection Act (Act no. 67 of 1977)

¹³¹ The Fund Raising Act, (Act no. 107 of 1978)

Disaster management in South Africa was informed by the legacy of different systems of governance introduced by the system that existed before. The Black Administration Act¹³² is amongst the legislation, which separated certain races in communities from the mainstream disasters management facilities. The context of disaster management policy in South Africa can be found within the area of planning. The management of disasters is about the integration of development infrastructure and the co-operation of all levels of government. Given the South African background, critical success factors in South Africa today include the creation of equal access to disaster management facilities and the changing planning procedures¹³³.

Disaster Management is determined to a large extent by access and resources. Issues of capacity with regard to skills are also a major determining factor. The Constitution¹³⁴ allocates responsibilities and functions to Municipalities as per schedules 4(b) and 5(b). In terms of these provisions, the management of disaster is the responsibility of local and district municipalities. The Disaster Management Policy Framework has three definite response centres, which are National, Provincial and Municipal disaster management centres Disaster Management Act¹³⁵.

According to the Disaster Management Bill, municipalities previously performed the function of “civil protection”, which has been governed by the Civil Protection Act¹³⁶. In addition, some of the responsibilities assigned to local government in Schedules 4B and 5B of the Constitution could imply municipal response to certain kinds of disasters (such as firefighting services, municipal health services, and municipal roads and traffic). On the other hand, “disaster management” is listed as a concurrent responsibility of national and provincial government and not specifically local government i.e. in schedule 4A of the Constitution.

¹³² The Black Administration Act (Act no. 38 of 1927)

¹³³ White Paper on Disaster Management, (2001).

¹³⁴ The Constitution of the Republic of South Africa (Act no. 106 of 1996)

¹³⁵ Disaster Management Act (Act no. 57 of 2002).

¹³⁶ The Civil Protection Act (Act no. 67 of 1977)

The challenge facing South African policy makers is the repeal of the previous legislation and the replacement of such legislation with new legislation, resources, the creation and opening of access to disaster management infrastructure by all communities.

In addition to the above, the Disaster Management Framework is dependent on the successful integration of development. This means that land use management systems and municipal infrastructure must be provided in a manner, which ensures equity in development planning. Integrated Development Plans (IDP's) have sub-plans, which are listed as follows¹³⁷:

- Disaster Management Plan;
- Tourism Development Plan;
- Spatial Development Framework Plan;
- Local Economic Development Plan;
- Human Settlement Plan;
- Water Services Development Plan; and
- Others.

The successful implementation of the Municipal Systems Act¹³⁸ and other legislation aimed at effecting the implementation of IDP's will lead to the integration of communities into the municipal infrastructure investment planning process. National government is expediting the provision of municipal infrastructure. This is done in order to ensure that all communities will have better access to disaster management facilities and other municipal services. The Municipal Infrastructure Grant (MIG) is a consolidated funding mechanism, which will ensure that the provision of municipal infrastructure is expedited. The relationship between infrastructure development and disaster management

¹³⁷ Source: Information Package on IDP compiled by (Department of Local and Traditional Government Affairs; 2001)

¹³⁸ The Municipal Systems Act(Act no.32 of 2000)

determines access to disaster management facilities by the rural communities. Section 78 of the Constitution¹³⁹ indicates the greatest area of need with regard to infrastructure backlogs is found in rural areas.

4.3 VULNERABILITY OF SOUTH AFRICA

South Africa is exposed to various levels of disaster risk. Weather hazards include drought, cyclone, severe storms and coastal threats, particularly in KwaZulu- Natal. In addition to natural factors, there are human induced disasters, which are exacerbated by the fact that South Africa shares borders with six Southern African neighbours. Cross boundary risks impacts on South Africa's humanitarian and emergency assistance obligations¹⁴⁰

In South Africa, disaster incidents confirm vulnerability factors in respect of different parts of the country. Severe floods in Cape Town (June 1994) are an indication of the Cape Peninsula's vulnerability to floods as a result of its unique geographical position and weather conditions. In the Western Cape, floods lead to conditions for the declaration of disaster¹⁴¹.

According to Barber [2001: 69]¹⁴² cholera is defined as "a disease largely of absence of sanitation and is closely associated with deep impoverishment and poor service delivery". The bacteria is spread mainly by contaminated water and food, attaches to intestinal wall, multiplying to produce a poisonous chemical, which prevents the body processing water. It can be eradicated by fairly elementary public health measures such as provision of sanitation, clean drinking water and encouragement of hand washing. An outbreak in KwaZulu-Natal in August 2000 gave rise to more than 100 000 cases a year later and there were

¹³⁹ The Constitution of the Republic of South Africa (Act no. 106 of 1996) Section 78

¹⁴⁰ White Paper on Disaster Management – Government Gazette (1999).

¹⁴¹ White Paper on Disaster Management Government Gazette (1999).

¹⁴² Barber P., Cholera Awareness Programme in North West Province, 2001

continuing outbreaks in this and other provinces. According to WHO [2002]¹⁴³ statistics, this was the biggest outbreak in Africa for that period.

It has been argued that deep poverty and deprivation are largely concentrated in the rural communities of South Africa. Rural communities are characterized by a high level of health problems both endemic diseases such as tuberculosis and HIV /AIDS and epidemics like cholera. These communities suffer high levels of illiteracy, unemployment, poverty and lack of access to clean drinking water and improved sanitation. Rural communities are generally acknowledged in South Africa to be poorly served with health services and the post apartheid government committed itself to creating more clinics closer to rural communities and more hospitals in rural centres accessible to the people.¹⁴⁴

A study by Green and Dube [2001: 90-96]¹⁴⁵ found that in order to meet health needs, rural villagers in Northern KwaZulu- Natal had to walk five kilometres to reach their neighbouring clinic. The clinics are poorly staffed and poorly resourced and referrals to hospitals generally difficult as there are often communication and transport difficulties. In addition to lack of medical personnel there is also little provision for inspection by Environmental Health officers responsible for health inspection and assessment of health risk factors and who are based in urban areas. The implication is that rural area's infrastructure for health promotion remains inadequate.

¹⁴³ World Health Organisation , 2002

¹⁴⁴ Source: Report on the 8TH World Congress on Environmental Health 22-27 Feb. 2004.

¹⁴⁵ Green, JM. & Dube: The perceptions and energy usage of rural villagers in KwaZulu- Natal in Kwa Majomela Northern KwaZulu-Natal (pp 90-96), 2001.

4.4 SOCIAL BASIS OF RURAL HEALTH

The communities living in rural areas are generally vulnerable to water-borne diseases because of uneven coverage of projects providing clean drinking water and even worse provision of improved and safe sanitation. Water and sanitation surveys conducted have shown that the significant number of rural communities has only a limited or no access to reliable and safe drinking water supply. To meet their daily water needs, rural communities draw water from unprotected water sources. There are severe backlogs particularly in the sanitation with 337 119 households not having any sanitation and 583 115 households having unimproved sanitation in the form of latrines¹⁴⁶.

Lack of access to basic water supply and sanitation facilities is one reason for black South Africans suffering, by far, the highest infant mortality and water – related diseases rates in all of Africa. According to the Rural Development Service Network¹⁴⁷, 18 000 people in South Africa die from diarrhoea or dysentery every year and it cost the country approximately 4 billion every year to treat and cope with the effects of water borne diseases.¹⁴⁸

It is argued that rural people often exist on the margin of subsistence and thus lack the reserves needed to adequately cope (or cope at all) with the serious disruption that a drought brings. Although the main focus during a drought is often on drinking water and production losses, such as crops and livestock as these form a vital part of a rural household's food source, there are more consequences with longer-term impacts¹⁴⁹.

¹⁴⁶ Statistics South Africa :Census , 2001

¹⁴⁷ Rural Development Service Network : 2000)

¹⁴⁸ Rural Development Service Network: 2000),

¹⁴⁹ Baber, P. Cholera Awareness Programme in North West Province, 2001

The main source of income of rural people is remittances and pensions with few families able to secure a stable livelihood off the land. A drought can thus severely erode the food source and assets of rural families. Other drought impacts on rural communities include loss of jobs (for those dependent on farms for employment), food price inflation and social changes. A drought situation can force many rural people to migrate to urban areas in search of employment and this leads to changes in lifestyle. Health impacts on the rural population have not been mentioned here but cannot be under-estimated. Decreased access to water can lead to an increase in numerous diseases such as cholera. The drought would also have wide-ranging impacts for those people already infected with HIV/AIDS¹⁵⁰.

In South Africa, in general, and KwaZulu- Natal in particular, there is a strong relationship between lack of access to basic services and situations of disaster. In terms of schedules 4b and 5b of the South African Constitution¹⁵¹ municipalities in their different categories, are responsible for the delivery of basic services. In KwaZulu –Natal, experiences of floods and drought triggered severe cholera epidemics. The reality is that a high percentage of municipalities (from a total of 61) are not able to deliver services to at least 60% of their communities due to backlogs in service delivery¹⁵².

Municipal capacity shortfalls have a negative impact on service delivery and on the management of disasters. Backlog studies were commissioned. The ability of municipalities to deliver services to at least 60 % of their communities is depicted in the figure below:

¹⁵⁰ Baloyi O. KwaZulu- Natal Policy Document on Community Health Workers, 2000

¹⁵¹ The South African Constitution (Act No. 108 of 1996)

¹⁵² Source: (Cabinet Memo – Declaration of Disasters: 2003)

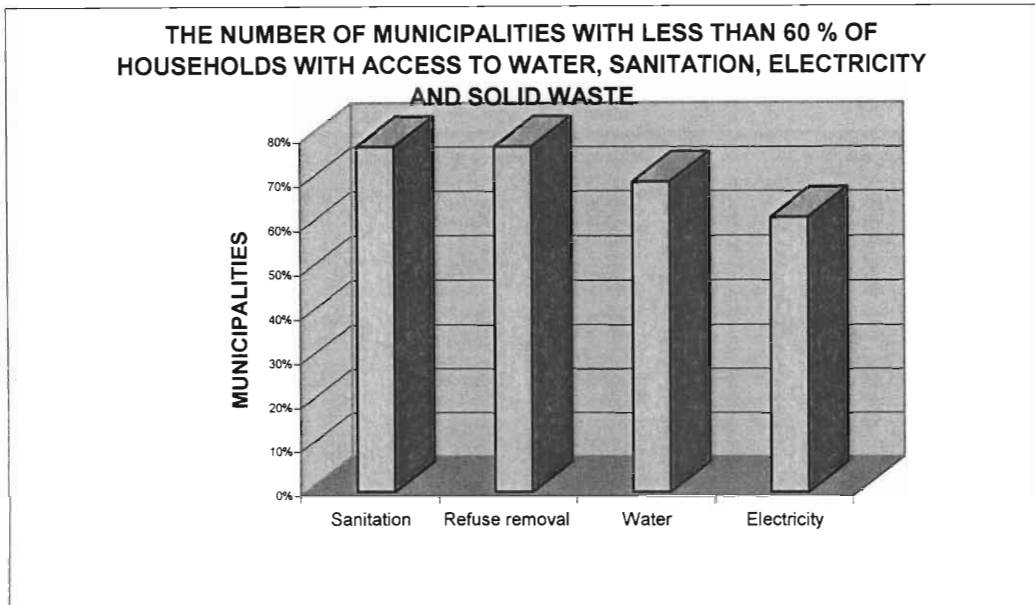


Figure: 4.1 Municipalities with less than 60% access to electricity, water, sanitation and solid waste (KZN water and sanitation report: 2004)

Local government provides an institutional context within which disaster management must occur in South Africa. As indicated in the figure above, the delivery capacity of a municipality is the deciding factor regarding performance in the management of disasters.

In KwaZulu- Natal, the amalgamation of towns with rural areas brought in large numbers of rural populations, in particular, to be serviced by municipalities.

The demographic context of disaster management in KwaZulu-Natal is summarised as follows:

4.5 NUMBER OF PEOPLE / HOUSEHOLDS AFFECTED

According to [Statistics South Africa: 2001]¹⁵³, KwaZulu-Natal has a total population of 9.4 million people. Over half of these people live in the rural areas of the province. Actual figures from Stats SA indicate that KwaZulu-Natal has a

¹⁵³ Statistics South Africa Census : 2001

rural population of 5,091,365 million people and an urban population of 4,334,652 million people.¹⁵⁴

During an assessment of the impact of drought carried out in January 2004 by the National Government, it was estimated that 783843 people were affected. However, this figure did not distinguish between rural and urban households. A more detailed assessment has revealed that the original figure of 783 843 is closer to 1 552 567 affected people.

The President declared the District Municipalities of Zululand, Umkhanyakude, Uthungulu, Ilembe and Sisonke as disaster areas on 17 January 2004. This confirms the view that rural newly established municipalities have the highest risk exposure with regard to disasters. This exposure is directly related to the lack of access to basic but critical services.

Droughts and floods constitute the most frequent incidents of disaster in KwaZulu-Natal. The following table indicates population at drought/flood risk for the period ended June 2004.

| DISTRICT | POPULATION |
|-----------------|-------------------|
| Zululand | 804 446 |
| Umkhanyakude | 573 341 |
| Uthungulu | 885 963 |
| Ilembe | 560 390 |
| Sisonke | 398 394 |
| | |
| Total | 3 222 534 |

Table: 4.1 Population at drought/flood risk (KZN water and sanitation report, 2004)

¹⁵⁴ Statistics South Africa Census : 2001

4.6 FACTORS CONSIDERED IN THE DECLARATION OF DISASTERS: DROUGHTS AND FLOODS IN KWAZULU- NATAL

Droughts and floods remain major disaster factors and conditions in KwaZulu - Natal. According to Foster [1980: 143]¹⁵⁵ drought occurs when there is a deficiency in rainfall or other forms of precipitation for an extended period of time. This affects run-off, soil moisture levels, dam levels, food production and ultimately the ability to supply potable water and to maintain the natural ecology of a particular area. Depending on which of these are affected, a drought can typically be defined as being a meteorological, agricultural or hydrological drought.

According to Alexander [1993: 103]¹⁵⁶, the impacts of drought could be classified into 3 groups, namely economic, social and environmental.

Economic Impact relates to costs and losses to agricultural, livestock and timber producers, recreation and tourism, decline in food production and to water providers, revenue shortfalls, and increased cost of water transport and of supplemental water resource development.

Social Impact relates to deterioration in health, increased conflicts over water, reduced quality of life, changes in lifestyle and re-evaluation of social values, and

Environmental Impact relates to damage to animal species and hydrological effects such as lower water levels in dams, reduced flow from boreholes, reduced stream flow, loss of wetlands, estuarine impacts (e.g. changes in salinity levels), land subsidence, reduced recharge, water quality effects (e.g. salt concentration, increased water temperature, pH, dissolved oxygen and turbidity).

¹⁵⁵ Foster D., Disaster Planning, USA, 1980

¹⁵⁶ Alexander W.J.R. Flood Reduction Measures, 1993

According to Umgeni Water Drought Report¹⁵⁷, the rural areas of northern KwaZulu-Natal have been the most affected and are currently in a hydrological drought situation. Although the rest of KwaZulu-Natal is experiencing depressed water resource levels, it is still in the early hydrological drought stage. A local government needs assessment revealed that over 700 000 people are without clean drinking water after boreholes, rivers and springs in KwaZulu-Natal dried up. Areas worst hit by the drought are the district municipalities of Zululand, Umkhanyakude, Sisonke and Umzinyathi.

On 5 December 2003, the National government announced an Emergency Water Provision Programme and municipalities received emergency assistance to help maintain domestic water supplies. KwaZulu-Natal municipalities have already received R21.6 million for this purpose and a further R8.2 million was available for immediate allocation. In addition to this, the National Cabinet approved a further R250 million from which KwaZulu-Natal was allocated R49.05 million on 18 February 2004 for the following support programmes:

¹⁵⁷ Umgeni Water Drought Report, 2004

| ASSISTANCE PROGRAMME | NATIONAL FUNDING AGENT | PROVINCIAL IMPLEMENTING AGENT | NATIONAL PROGRAMME BUDGET | KWAZULU-NATAL PROGRAMME BUDGET |
|--|--|---|---------------------------|--------------------------------|
| Emergency relief to vulnerable rural communities | Department of Social Development | Department of Social Welfare and Population Development | R 60 m | R 15 m |
| Support for purchase of animal fodder | Department of Agriculture | Department of Agriculture and Environmental Affairs | R 30 m | R 10 m |
| Water for human consumption | Department of Water Affairs and Forestry | District and Local Water Service Authorities | R 100 m | R 12 m * |
| Water for animal consumption | Department of Water Affairs and Forestry | District and Local Water Service Authorities | R 20 m | R 5 m |
| Safeguarding of boreholes | Department of Water Affairs and Forestry | District and Local Water Service Authorities | R 5 m | R 0,95 m |
| Prevention of spread of communicable diseases | Department of Health | Department of Health | R 35 m | R 6,1 m |
| TOTAL | | | R 250 m | R 49,05 m |

Table: 4.1 Emergency Water Provision Programme (2003 Cabinet Memo – Declaration of Disasters).

Subsequent to a National Ministerial visit over the period 6 to 9 January 2004, the District Municipalities of Zululand, Umkhanyakude, Uthungulu, Ilembe and Sisonke, as well as the Local Municipalities of Impendle and Umhlatuze, were declared as disaster areas in terms of the Fund Raising Act¹⁵⁸. Of particular

¹⁵⁸ The Fund Raising Act (Act no. 107 of 1978)

concern, is that the District Municipalities of Umzinyathi, Amajuba, Uthukela, Umgungundlovu, as well as parts of Ugu, were omitted in this declaration. The situations in these districts are comparable and in certain instances even worse than in the declared disaster areas.

Following the 1999/2000 floods and the subsequent outbreak of cholera, Cabinet directed that a provincial rapid response structure be established to respond to all disasters and to co-ordinate disaster related activities¹⁵⁹. The Department of Traditional and Local Government Affairs (DTLGA) was tasked to chair the Provincial Emergency Reconstruction Co-coordinating Committee (PERCCO). At its meeting held on 16 January 2004, PERCCO resolved to focus on the following four functional areas and to ensure that appropriate institutional structures were established to address the current drought situation in KwaZulu-Natal interalia

- Safe drinking water for human consumption;
- Agricultural Support;
- Food Safety; and
- Prevention and Management of drought related diseases.

It is against this backdrop that the Department of Traditional and Local Government Affairs decided to re-activate PERCCO and involved all provincial departments, the Department of Water Affairs and Forestry (DWAF), eThekweni Metro.

¹⁵⁹ (Cabinet Resolution No. 176 of 29 March 2000)

4.7 SUCESSFUL DISASTER REDUCTION STRATEGIES IMPLEMENTED IN SOUTH AFRICA

The following are the examples of the strategies that proved to be successful;

4.7.1 NATIONAL CHOLERA PREVENTION STRATEGY

According to Cottle & Deedat (2002: 108)¹⁶⁰ in August 2000, South Africa experienced one of the wide spreading cholera epidemics in the world. The worst affected areas were KwaZulu-Natal and Limpopo provinces. During January and February 2001 Ministers and Provincial MEC's met in Durban and Cape Town to discuss the Cholera epidemic. It was agreed at these meetings that there was a need to develop a coherent strategy for government regarding the overall management of government response. A National Cholera Prevention Strategy was developed and implemented. The objectives of the national strategy were to;

- Minimize the fatality rate;
- Reduce rate of cholera infections ;and
- Prevent further spread.

The most fundamental aspect supporting the national strategy was the accuracy of the information on which all decisions were based. The outbreak of the epidemic required that all spheres of government respond in a co-ordinated manner. The response reflected that the outbreak related to a number of varied challenges. The challenges called for the positive response by various institutions that had an indirect role to the matter. The implementation of the strategy proved to be a success¹⁶¹.

¹⁶⁰ Cottle & Deedat Cost recovery and prepaid water metres and the cholera outbreak in KZN: A case study in Madlebe, (2002)

¹⁶¹ Ashpole, M. Cholera risks in well –served environments. 2001

It was argued that the high number of cases in the affected provinces was due mainly to unsafe drinking water and poor sanitation in the affected areas. The overall co-ordinated approach to the epidemic was officially closed by the end of July 2001. However, the second outbreak started during the months of October and November 2001 in KwaZulu-Natal. This was attributed to summer rains and mobility of migrant laborers contributing to the spread of disease¹⁶².

Long term intervention strategies to curb the cholera epidemic were implemented and involved the provision of safe water and adequate sanitation primarily in the most affected areas and under resourced communities. These measures were complemented by on-going health education and health promotion programmes at all levels of care. Health information activities were executed through posters, pamphlets and involvement of the media and consultations with at risk communities. Outbreak Response teams and Joint Operation teams were established. Chlorine was distributed to affected areas for purifying water, with instructions to be followed¹⁶³.

4.7.2 INTEGRATED PLAN FOR FIRE MANAGEMENT

The devastating losses suffered in the country as a result of veld fires (i.e. savannah grassland wildfires) had focused the need to establish an integrated plan for fire management. During 2002, the National Disaster Management

¹⁶² Ashpole, M. Cholera risks in well-served environments. 2001

¹⁶³ Cottle & Deedat Cost recovery and prepaid water metres and the cholera outbreak in KZN: A case study in Madlebe, (2002)

Centre (NDMC) and the Department of Water Affairs and Forestry (DWAF) in collaboration with forestry industry and various government departments, initiated the Working on Fire Programme (WoF). This was a pilot programme funded through Poverty Relief allocation that sought to promote an integrated approach to fire management in six regions through South Africa, by enhancing fire management capacity and by assisting in the establishment of Fire Protection Associations (FPA's).

In terms of the agreement an amount of R 10,5 million per year would be suspended from the budget vote of DWAF and transferred to vote of DPLG (sub-programme Disaster Management) for an initial period of three years, to ensure the effective implementation of the plan in seven provinces. This would include facilitating the establishment of FPA's with fire fighting capacity (including ground crews to support aerial fire-fighting capacity and fire control teams to do prescribed burning) in the six areas within seven provinces namely;

- Western Cape;
- Eastern Cape;
- Mpumalanga
- KwaZulu –Natal;
- Limpompo;
- Free State ¹⁶⁴

¹⁶⁴ Department of Water Affairs and Forestry document

4.8 CASE STUDIES

The following case studies illustrate the responses or reaction by authorities to emergency circumstances.

4.8.1 FLOODS

It was reported that the year 2000 experienced heaviest floods that Southern Africa had experienced over a century. It was argued that the decade leading up to 2000 floods had also been of the drier periods. The floods become heavier and swept through Botswana, Namibia, Madagascar, Malawi, Mozambique, South Africa and Swaziland. The effects of rains affected the both urban and rural communities.

According to Allen [2002: 8]¹⁶⁵, the floods destroyed the whole villages as well as crops and livestock. It was argued that the dirty floodwaters spread various diseases such as cholera and malaria throughout the camps. About 700 people died as a result of the floods and more than 2 million people were left without homes. It was the worst floods in the Region's history. It was during these floods when Cecilia Chirindza gave birth in the tree to baby-girl Rosita who made worldwide news and which helped to bring attention to the floods in Mozambique¹⁶⁶.

In the South African scenario, it was argued that at that time the flood management policy was in place, which was meant to dictate when the dams reached a certain level, the sluice gates should be opened and the water allowed into its rivers. However, the argument was that even if the gates had been controllable, other factors had contributed in exacerbating the problem¹⁶⁷. The destruction of South Africa's wetlands and grasslands had the negative impact.

¹⁶⁵ Allen J. Natural Disasters- Floods. 2002

¹⁶⁶ Allen J. Natural Disasters- Floods. 2002

¹⁶⁷ Alexander D. Natural Disasters, 1993

The wetlands channel the waters in different directions so their effect is spread, while grassland increases infiltration and absorption, lessening the amount of water in the river system. The high rainfall, traditional flood-management programme and the loss of wetlands and grasslands are the physical factors that contributed to flooding disaster in southeastern Africa.

Allen [2002: 27]¹⁶⁸ is of the view that when South Africa and Mozambique are compared, their history meant that the housing for the poor exposes vulnerable people to hazardous situations. It was argued that the homes for the urban poor in South Africa are often within townships, which themselves are on marginal land. In Maputo many of the urban poor live in barrios on the outskirts of the city.¹⁶⁹ According to Sunday Times , on tracking down the “*TREE CHILD*” it was reported that 2,5million people were affected by the floods, 250 000 people lost their homes in Mozambique alone. The floods killed 900 people, washed away roads, destroyed schools, grazing land, agricultural land, and ruined people’s livelihood strategies. The floods were attributed to the lack of proper construction and dangerous location, which resulted in many homes failing to stand up to heavy floods. People who were the victims of floods refused to leave their homes for the fear of loosing their plots and belongings¹⁷⁰.

4.8.2 FACTORS THAT CONTRIBUTED TO FLOOD DISASTERS

It was reported that South Africa responded to disaster within its borders and those in Mozambique. One of the reasons for crisis in Mozambique was that there was no strategy in place to cope with such incident. The Disaster Management Policy by Mozambican government was long overdue. The UNDP and other NGO’s who are active within the region had been encouraging for the creation and implementation of disaster management policy. Aid and help were

¹⁶⁸ Allen J. Natural Disasters- Floods. 2002

¹⁶⁹ Allen J. Natural Disasters- Floods. 2002

¹⁷⁰ Sunday Times (February 25; 2007)

sought, and provided by both African nations and first world governments. Dissatisfaction in Mozambique was around the fact that help only arrived when the international media publicised their plight. The response was viewed in as a double-edged sword. On one hand, food imports and aid are cheaper than other imported food items once they are considered relief items but on the other, the food and aid do not come without any political and economic strings attached¹⁷¹ .

In the South African case, during floods, the disaster management policy since 2000 and the National Disaster Management Centre was established within the Department of Provincial and Local Government in the same year. It was reported that within the township of Alexandra 6000 families living below the flood line had been identified as highly vulnerable to flooding and as such a warning system had been set up. The system worked on the premise that as soon as the water reached a certain point, a device along the river would register the increase and send signal of early warning to Sandton. The centre in turn would sound a signal in Alexandra, which would alert people to the incoming floods. The system did not work because the two of the three early warning devices had been vandalised. The equipment to mitigate disaster was also reported as a challenge. Only one fire engine in the area was working¹⁷² .

The lack of advance warning, the lack of care taken with people's possessions and construction materials which were often dumped on the streets and in some cases, physical force that was used to remove people, raised fairly serious human rights issues. The places to which people were re-located to were crowded and lacked services and infrastructure. The sites on which people were re-settled were over 30km away from Alexandra, making access to places of work extremely difficult.

¹⁷¹ Alexander D. Natural Disasters, 1993

¹⁷² Bradley, J. Human Rights .,1987

The case study highlights the some of the problems associated with policy in southern Africa. In Mozambique the total lack of policy meant that the floods affected millions of people in 2000/1. The economic and political ramifications of the responses by the international community go far beyond simple help and the mitigation of a disaster. In South Africa although the policy was in place, the early warning system failed and the subsequent policy on relocation brought with it a whole series of livelihood and constitutional issues that the local council had not really considered. This emphasises the need to integrate disaster risk management into planning and development processes, so that future policy creates sustainable future for the urban poor.

4.8.3 HOUSING CASE

Adequate housing is the responsibility of the government. In South Africa, access to appropriate housing is no longer considered a luxury but rather it is a constitutional right for all people (section 26 of the Constitution of South Africa). The Grootboom case received a lot of media coverage and set one of the most important legal precedents in the South Africa. The case revolved around a group of informal dwellers from Wallacedene in the Western Cape, who initially lived in that settlement¹⁷³. When the overcrowded, appalling conditions and constant flooding became too much, they moved to an adjacent property which was privately owned and had been designated as a land for low-cost housing project. The informal dwellers were swiftly evicted and their homes bulldozed with their property inside and other remains were burnt. It was reported that the eviction took place during the day, when many dwellers were at work. The community then settled on the sports field using whatever material they came across. The field had no infrastructure or service provision and was prone to

¹⁷³ ([Http// www. Sahrc.org.za/ housing for the poor.htm](http://www.Sahrc.org.za/housing_for_the_poor.htm))

flooding (*Grootboom vs Oostenberg Municipality and others* (2000(11) BCLR 1169(C))¹⁷⁴.

The community led by Mrs Irene Grootboom, went to the Cape High Court to try and attain an order that would force the government to supply the group with immediate basic essential services. The court advocated that although everyone had a right to housing, the Constitution did not state that everyone had a right to housing on demand. The government was directed to provide adequate housing for the children, with their parents until such time as their parents could provide it to themselves. In order for the court to monitor the situation, the government was ordered to report to the court after three months on the measures that had been undertaken. The matter was taken to Constitutional Court due to the fact that the municipality had appealed against the ruling of the High Court ¹⁷⁵. For example, in the *Grootboom* case, the Constitutional Court pronounced on the judicial enforcement of economic and social rights. The case affirms that South Africa has got a duty to observe both its constitutional and international obligations with regard to economic and social rights.

4.8.4 OUTCOME OF THE CASE

The judgement upheld the Constitution¹⁷⁶ further, stating that Section 26 (2) requires the State to devise and implement, within its available resources, a comprehensive and co-ordinated programme to realise the right of access to adequate housing and goes even further, adding that the housing scheme should provide relief for people who have no access to land, no roof over their heads, living in intolerable conditions and who are in crisis because of natural disasters such as floods and fires or their homes are under threat of demolition. The court asserted that the current housing practice does not facilitate the needs of the poorest and most vulnerable members of society, and as such was not a

¹⁷⁴ *Grootboom vs Oostenberg Municipality and others* (2000(11) BCLR 1169

¹⁷⁵ ([Http// www. Sahrc.org.za/ housing for the poor.htm](http://www.sahrc.org.za/housing_for_the_poor.htm))

¹⁷⁶ ¹⁷⁶ The South African Constitution (Act No. 108 of 1996)

reasonable strategy for providing housing and must therefore be changed. The Constitutional court defined parameters of what constitutes “reasonable measures”. It was stated that implementation plans that failed to be “reasonable” would not meet the State’s obligations in terms of section 7(2) of the Constitution. The manner of this change was to use part of housing budget for short-term relief for people who are living in intolerable conditions¹⁷⁷. *Grootboom vs Oostenberg Municipality and others* (2000(11) BCLR 1169(C)).

4.9 SUMMARY OF THE CHAPTER

In this chapter, disasters that have been experienced in South Africa outlined by the White Paper on Disaster Management were analyzed. Rationale for the Disaster Management legislation in comparison to the manner in which disasters were previously viewed was analyzed and contextualized within the South African scenarios.

Previously municipalities performed the function of civil protection. Disaster Management in South Africa is determined to a great extent by access to resources. It is therefore important that for IDP’s to be effectively implemented, integration of all relevant stakeholders is crucial. Vulnerability of South Africa is viewed as two-fold namely: weather hazards as well as the sharing borders with other regions. More specifically to KZN, drought and floods remain a major disaster and condition. This mostly affects rural areas.

The chapter further explored the strategies that were adopted in order to reduce disaster i.e. National Cholera Prevention Strategy as well as the Integrated Plan for Fire Management. Case studies that were cited in the chapter indicated clearly that as a country South Africa has a major role of ensuring that the rights of its citizen are always protected. Factors that need to be considered in declaring disasters are outlined.

¹⁷⁷ *Grootboom vs Oostenberg Municipality and others* (2000(11) BCLR 1169(C)).

CHAPTER 5

INTERNATIONAL PERSPECTIVE ON DISASTERS

5.1 INTRODUCTION

The chapter aims at exploring the types of disasters that had occurred around the globe. Factors that contributed to the occurrence of disaster(s) and the impact of disasters on the livelihoods of the respective communities will be discussed. Special focus and attention will be on the *Tsunami*, *Hurricane Katrina* as well as *famine* that affected Sudan.

In extreme weather conditions (the term “extreme” refers to a departure from what is considered a norm). These could be events which have a significant impact upon a local community or ecosystem. The potential health impacts of extreme weather events include both direct impacts, such as traumatic deaths and injuries, and indirect impacts, such as illnesses associated with ecologic or social disruption.

5.2 HEALTH EFFECTS ON EXTREME WEATHER CONDITIONS

It has been argued that extreme weather conditions can have an impact on direct morbidity and mortality health effects that are typically associated with disasters. In addition, secondary or indirect health impacts may be associated with changes in ecological systems and human population displacement. Both the direct and indirect impacts of extreme weather events can lead to impaired public health infrastructure, reduced access to health care services, and psychological and

social effects. Local population preparedness for extreme events is, therefore, an important determinant of a disaster's impacts. Factors affecting community preparedness include exposure to natural elements e.g. type of dwelling, socio-economic status, early warning capability and cultural practices¹⁷⁸.

5.3 DISASTERS- SPECIFIC OUTCOMES

The impact of disasters on individuals and communities depends on the likelihood of the event, whether it can be predicted or controlled, the type of agent (natural or technological, the speed of onset, the scope of impact and the destructive potential of the event.

It is established that floods are the most frequent natural disaster and the leading cause of death from natural disasters in the United States. The severity of a flood is largely determined by topography, the surrounding infrastructure of the flooded area, a variety of human –generated factors and the potential floodwater to spread over a large area. Flood controlling infrastructure such as levees, embankments, retention walls and drainage channels can affect the severity of flooding and contribute, if they fail, to resultant injuries and deaths¹⁷⁹.

According to Durham [1999: 9]¹⁸⁰ floods and disasters happen wherever people are prepared to put themselves and their livelihoods at risk. He further argued that in July 1993, Mississippi witnessed one of the worst natural disasters that lasted for over a month. A huge number of people were affected as well as crops and property destroyed and damaged. It was reported that a wet autumn was followed by heavy snowfall in the winter and heavy spring rains. The damage

¹⁷⁸ Environmental Health Perspective (May 2001).

¹⁷⁹ Allen J.: Natural Disasters- Floods, 2002

¹⁸⁰ Durham E. Floods Restless Planet, 1999

was huge, transport and communication could not function. It was estimated that 54000.00 people were evacuated and 350000 homes were destroyed.

With urbanization, more individuals live in higher risk areas, especially coasts and floodplains. Urbanization creates areas of land incapable of absorbing precipitation, placing greater numbers of people at risk for flash floods. The degree of flooding can cause injuries and deaths. Alexander [1993: 36]¹⁸¹ asserts that flash floods from heavy rainfalls in short periods are the most deadly, simply because of increased overall water volume, higher water flow rates and a limited warning period in which to seek safety. Displacement of large groups of people into crowded shelters has the potential for triggering respiratory and gastrointestinal infectious diseases outbreaks, especially when water and sewage systems are disrupted. In the aftermath of flooding and fungi grow on interior surfaces, providing an added risk to allergic persons, and aggravating or triggering airways reactivity among susceptible persons¹⁸² .

The above scenario could be linked to the argument advanced by Blaikie [1994: 46]¹⁸³ on the Access Model, which focuses on the manner where unsafe conditions arise in relation to the economic and political processes that allocate resources in a society. The Access Model involves the ability of an individual, family and community to use resources, which are directly required to secure a livelihood. Access to those resources would always be based on social and economic relations. It could be argued that resources required for people's livelihoods are rarely spread evenly in geographical space.

Hurricane is a concept that is referred to technically revolving storms; however they also have local names. They are called "hurricanes "when they occur over

¹⁸¹ Alexander W.J.R.: Flood Risk Reduction Measures. 1993

¹⁸² Glantz M. Drought follows the plow: Cultivating the marginal areas. 1996

¹⁸³ Blaikie P.: At Risk: Natural Hazards, People, Vulnerability and Disasters: 1994

Atlantic Ocean, “typhoons” in the Far East and “cyclones” in the Indian Ocean. By definition, all are characterized by rotating winds, which exceed the speed of 120 km/h on the Beaufort Wind Scale¹⁸⁴. It is argued that the threat of hurricane is an ever-present one. Even if precautions are taken, they can still cause misery and devastation. However, some countries are too poor to take precaution and unfortunately, it is often these areas that are hit most severely by tropical storms.

As a recommendation [Dineen 2002: 26]¹⁸⁵ refers to the theory that argues that global warming is having some effect on the climate. As the planet hit up, more parts of the world are developing the kind of climate that is ideal for tropical storms. It is established that the gases in the earth’s atmospheric pressure act like glass of the Greenhouse, trapping enough heat from the sun to keep the planet warm enough. The process is called “Greenhouse Effect”. One of the main greenhouse gases is carbon dioxide. The only way global warming could be prevented is by controlling the amounts of gases that are released into the atmosphere.

Morris [1999:117]¹⁸⁶ asserts that hurricanes classically trigger secondary weather effects, such as tornadoes, landslides and flooding that together with winds and storm surges, can cause extraordinary high rates of injury and death. The majority of hurricane fatalities are due to drowning associated with storm surges. Other causes and deaths include burial beneath the houses and penetrating or blunt trauma due to wind-stream debris. Injuries and deaths associated with hurricanes can occur during the impact phase of hurricane or the period of response and recovery immediately following the storm. Deaths from falling trees, trauma related to use of chain saws, and burns from unattended

¹⁸⁴ Dineen J. Hurricane and Typhoons . 2002

¹⁸⁵ Dineen J. Hurricane and Typhoons, 2002

¹⁸⁶ Morris N. Natural Disasters- Earthquakes: Why do they happen, where do they happen. 1999

flames were reported with other hurricanes. The need for food, shelter, clothing and sanitation may create public health problems in the post disaster phase. Crowding people into storm shelters may increase the probability of disease spread via aerosol or fecal-oral routes. The access to health care may require use of mobile hospitals when health care facilities have been destroyed or damaged.

Severe drought conditions have been associated with widespread crop failure and food shortages, resulting in famine in developing countries. In developed countries such as the United States, malnutrition and starvation have not been a public health concern associated with extreme weather events because of an advanced capacity for food production and distribution¹⁸⁷. However, drought has been associated with crop failure, economic losses and in some cases, increased potential for wildfires and infectious diseases. Forest fires causing public health hazards have been related to dry conditions associated with *El Nino events*. Drought-generated wildfires have less impact on mortality but cause an increased incidence of functional limitations and respiratory symptoms. Fire smoke carries a large amount of fine particles that exacerbate cardiac and respiratory problems including asthma and other chronic obstructive lung disease.

According to Bulletin of Worlds Health Organisation¹⁸⁸, human -caused disasters are associated with high level of post-traumatic distress than natural disasters e.g. mass transport disaster, fatalities are sometimes universal, and mutilation and serious injuries often occur. Some survivors develop a phobia for that type of transportation.

¹⁸⁷ Gobler R. A Framework for modeling losses arising from Natural Catastrophes in South Africa. 1993

¹⁸⁸ Bulletin of Worlds Health Organisation Genebra (2003)

5.4 PHASES OF A DISASTER

According to Joyner [1993:67]¹⁸⁹ the following are phases of disaster occurrences;

| Phase | Outcome/Focus |
|----------------------|---|
| Pre disaster | Conditions of the family and individual |
| Warning | Of impending disaster given by media or weather changes |
| Threat | Of a disaster, immediately preceding the actual impact |
| Post disaster | When survivors take inventory of events |
| Rescue Phase | In which survivors and emergency workers join to save those affected by the disaster. |
| Remediation | Performed by Local Relief Efforts |

Table 5.1 Disaster Occurrences (Joyner CD, Swenson CC.: 1993)

¹⁸⁹ Joyner CD, Swenson CC.: Community Level intervention after a disaster. 1993

5.5 IMPACT OF DISASTERS

According to [Foster 1980: 102]¹⁹⁰ each disaster differs in its effects based on its scope, intensity and the characteristics of the pre-disaster community, family and individual personalities. Effects are often widespread and include the following:

- Destruction of infrastructure;
- Absence of electricity, sanitation and potable water;
- Destruction of physical contact with the outside world (roadways, phones and bridges);
- Dissipation of community cohesion due to death and injury;
- Vulnerability and exploitation due to disaster and media sensationalism and
- Potential for recurrence.

Effects of disaster on families could be as follows:

- Death or physical injury to a family member;
- Loss of family dwelling/ possessions;
- Loss of family breadwinner;
- Relocation – school changes;
- Job loss; and
- Parental disorganisation or dysfunction.

¹⁹⁰ Foster D.: Disaster Planning, 1980

5.6 THE 2004 INDIAN OCEAN EARTHQUAKE: TSUNAMI

Montgomery [1991: 74]¹⁹¹ argues that a Tsunami often is confused with a tidal wave. Actually, they are two completely different natural events. Tidal waves are caused by ocean tides. The moon affects ocean tides by pulling on Earth with a force called gravity. Only sudden movements in the ocean cause tsunamis. Earthquakes, volcanoes and landslides are events that create these movements.

A tsunami starts as a group of large ocean waves caused by sudden movements deep in the ocean floor. These waves merge into one giant wave, as the tsunami gets closer to the shore. Tsunami waves can grow to more than 100 feet (30.5m) high and they can travel at a speed up to 600 miles (966 km) per hour across the ocean¹⁹².

Tsunamis do not occur as often as other natural disasters, such as earthquakes or tornadoes, yet they can be just as destructive and deadly. They can strike quickly and without warning. Their effects on people and on land can be devastating. It is argued that many times people drown in tsunami waters before they can even think about running for safety¹⁹³.

Most tsunamis occur in the Pacific Ocean. This is because many earthquakes and volcanic eruptions happen in the Pacific region. Most earthquakes occur where tectonic plates meet. Many of these plates meet in the Pacific Ocean. A lot of volcanic activity also occurs in this ocean. The region has been nicknamed the (Ring of Fire) because of the large circles of underwater volcanoes¹⁹⁴.

¹⁹¹ Montgomery C. Environmental Geology . 1991

¹⁹² Thompson L. Natural Disasters- Tsunamis. 2000

¹⁹³ Thompson L. Natural Disasters- Tsunamis . . 2000

¹⁹⁴Montgomery C. Environmental Geology . 1991

The 2004 Indian Ocean earthquake known by the scientific community the “Sumatra Andaman” earthquake was an undersea earthquake that occurred on 26 December 2004 in Thailand. Tsunami generated by the earthquake killed thousands of people and making it one of the deadliest disasters in modern history. The disaster is also known as the Boxing Day Tsunami. It is argued that the true final toll may never be known due to bodies having been swept out to sea. However, relief agencies warned of the possibilities of more deaths to come as a result of epidemics caused by poor sanitation¹⁹⁵.

Tsunami is characterized as the sudden vertical rise of the seabed by several meters during the earthquake, displaced massive volumes of water resulting in a tsunami that struck the Ocean. A tsunami that causes damage far away from its source is sometimes called a “teletsunami” and is much more likely to be produced by vertical motion of the seabed than by horizontal motion.

Carayannis [1986: 157-169]¹⁹⁶ defines Tsunami as a series of ocean waves of very great length and period generated by impulsive disturbances of the earth’s crust. Large earthquakes with epicenters under or near the ocean and with net vertical displacement of the ocean floor are the cause of the most catastrophic tsunami. Although infrequent, tsunamis are among the most terrifying and complex physical phenomena and have been responsible for the great loss of life and extensive destruction to property. Because of their destructiveness, tsunami has an important impact on the human, social and economic sectors of the societies.

¹⁹⁵ Wikipedia, The Free Encyclopedia(2005: 1)

¹⁹⁶ . Pararas- Carayannis G.from “Violent forces in Nature”, Chapter 11 Lamont Publication, 1986 p 157-169 and from Impact of Society” Vol 32, no.1, 1982, p 71-78

It is argued that, since 1900, the only earthquakes recorded with a larger magnitude were the 1960 Great Chilean Earthquake, the 1964 Good Friday Earthquake and the March 9, 1957 earthquake. It is further argued that each of these earthquakes also spawned Tsunamis (in the Pacific Ocean) but the death toll from these was significantly lower, a few thousands for the worst one, probably because of the lower population density along the coast near the affected areas and much greater distances to more populated coast¹⁹⁷.

It is further argued that the Tsunami that hit the Indian Ocean caused a disaster that was extreme and unusual. The last disaster even close to this magnitude was caused by the eruption of Krakatau in 1883, where it was reported that 36,417 people were killed. The 2004 wave was of similar proportion but the devastation monumentally more¹⁹⁸.

It was reported that there were no tsunami warning systems in the Indian Ocean to detect tsunamis or equally to warn the general population living around the ocean. Tsunami detection is not easy because while a tsunami is deep in the water, it has a very low height and a network of sensors is needed to detect it. The first warning sign of a possible tsunami is the earthquake itself. However tsunamis can strike thousands of miles away, where the earthquake is only felt weakly or not at all¹⁹⁹.

¹⁹⁷ Time Magazine (January, 2005).

¹⁹⁸ Policy Briefing Paper, 2005).

¹⁹⁹ (2004 Tsunami Disaster: Scholarly and Factual analysis).

5.6.1 HUMANITARIAN, ECONOMIC AND ENVIRONMENTAL IMPACT

The impact of December 26, 2004, South Asian Tsunami is still being assessed after the natural disaster, which is thought to have killed more than 150 000 people and affected millions²⁰⁰. The majority of deaths were a direct result of drowning and traumatic injuries. The force of the waves washed infrastructure, homes, medical facilities, businesses and livelihood away. The public health needs of the surviving populations were massive, but consistent with previous natural disasters of this type.

The basic requirements were for water, sanitation, food, shelter, clothing, and adequate protection from disease as well as appropriate medical care on the ground and for displaced communities. The regions affected included many rural and tropical environments in some of the poorest areas of the Indian Ocean in south Asia and Africa. The impact of public health is likely to be felt for years in these areas²⁰¹.

According to World Health Organisation,²⁰² the South Asian Tsunami was one of those disasters that required the mobilization of most or the entire public health workforce in the affected areas, supplemented with the resources of government and non-government agencies. Victim identification and need for forensics assistance was one area requiring international efforts. The challenges of this natural disaster were just as much about logistics as they were about health priorities. Logistics in the “absence of infrastructure, lost during the disaster, is often a domain of the largest government and non-government agencies such as the military”. This natural disaster highlighted the public health model i.e. a cycle of preparedness, mitigation, response and recovery. In the aftermath of the

²⁰⁰ Bloom S. Tsunami Threats: the long and short of it, 2005

²⁰¹ Van Rooyen M. After the Disaster– Facing the Public Health Challenges. 2005

²⁰² World Health Organisation, 2004

tsunami efforts had to be made to develop early warning systems in the Indian Ocean in conjunction with development of improved communication and evacuation systems. However, the understanding must be obtained, not only of the physical nature of the phenomenon and its manifestation in each geographical locality, but also of that area's combined physical, social and cultural factors.

Most of the people in the Pacific countries live on or quite near the coast since the interior is often mountainous and most of the good flatland is in the form of coastal plains. Many of these countries have populations with a natural maritime orientation. For many of these countries, foreign trade is a necessity and some maintain large fleets of ships and have major port facilities. Many of the Pacific countries and those with extensive continental coastlines depend also on transport by small coastal ships necessitating many small ports to facilitate inter-island and coastal trade as well. The fishing industry contributes around 3% of the total GDP in Andhra Pradesh and 0.7 in the worst affected states of Tamil Nadu²⁰³.

Reports indicated that a great deal of humanitarian aid was needed due to widespread damage of the infrastructure, shortages of food and water and economic damage. Epidemics were one of the special concerns, due to high population density and tropical climate of the affected areas. The main concern of the humanitarian and government agencies was to provide sanitation facilities and fresh drinking water to contain the spread of disease such as cholera, diphtheria and typhoid. In the days after the event, significant effort was spent in burying bodies hurriedly for the fear of disease²⁰⁴.

²⁰³ Special Report, January 2005,

²⁰⁴ (<http://earthquake.usgs.gov>).

According to the report²⁰⁵ on, the impact on the coastal fishing communities and fisher folk, some of the poorest people in the region, had been devastating with high losses of income earners as well as boats and fishing gear. A typical example is the Sri Lanka's coastal areas where artisanal fishery is an important source of fish for local markets and industrial fishery is the major economic activity, providing direct employment to about 250 000 people. According to the preliminary estimates, it was indicated that 66% of the fishing fleet and industrial infrastructure in coastal regions had been destroyed by the wave surges, which would have adverse economic effects at both local and national levels.

Beyond the heavy toll on human lives, the Indian Ocean earthquake caused an enormous environmental impact that will affect the region for many years to come. It has been reported that poisoning of the fresh water supplies and the soil was causing the main effect by salt-water infiltration and deposit of a salt layer over arable land. Other effects that relate to health which are psychological in nature have been the sightings of ghosts²⁰⁶. It is established that chances of surviving a disaster are greatly improved when people, local governments and emergency services, businesses and national governments prepare survival plans and assemble survival gear beforehand. It can be deduced that what constitutes sufficient preparation is highly dependent on the location and the disasters that are likely to happen in the area.

National governments maintain disaster response plans to support local governments and to isolate an event's effects to a localized area. Naturally occurring diseases, biological terrorism, and crop blights are examples of the events that may be containable to a small area. A command structure, pre-determined which may include specialized agencies need to be in place. Since nations have direct command control over military forces, they may choose to deploy personnel as requested or needed to assist in rescue, treatment of victims, and the maintaining of civil order. National governments can co-ordinate

²⁰⁵ Tsunami Disaster and the Globalization of Relief, 2005

²⁰⁶ <http://earthquake.usgs.gov>

the deployment of emergency services personnel from unaffected areas to reduce the administrative burden on local command structures and they also have more resources and funds to assist local governments with relief efforts²⁰⁷ .

It is asserted that in planning for the Tsunami hazard, there is very little that can be done to prevent the occurrence of natural hazards. Floods, droughts, earthquakes, hurricanes and tsunamis cannot be prevented. Humankind being as adaptive as it is has learned to live with all these hazards. While these natural disasters cannot be prevented, proper planning can reduce their results, such as loss of life and property. To plan for the tsunami hazard, response plans to minimize further death and property loss with quick efficient action. A pre-determined command structure containing the functions, names, telephone numbers, and addresses needed for a disaster are used to mobilize local police, fire and medical forces which are occasionally supported by the military forces. A disaster command structure attempts to quickly establish control over a disaster scene to rescue victims, clear casualties and where possible, subdue the thread²⁰⁸ .

Due to the rarity of large destructive tsunami, it could be difficult to institute successful tsunami –prediction schemes for warning people. It is argued that tsunami warnings are issued to the public for the purpose of convincing them to evacuate the endangered areas. Ample time must be allowed for evacuation, which is a rather difficult procedure. Often the public does not understand the meaning of the warning signals and is not aware of the location of endangered areas. Most people are reluctant to evacuate their homes and businesses, and their response to warnings in general may not be very good, particularly if a number of false alarms have been issued²⁰⁹ .

²⁰⁷ (World Health Organization, 2004)

²⁰⁸ Time Magazine, (August 2005).

²⁰⁹(Policy Briefing Paper: July 2005).

Disasters such as Tsunami in South Asia underline the vulnerability of the developing countries.

5.7 AN AMERICAN TRAGEDY- HURRICANE KATRINA

Hurricane Katrina was the eleventh named tropical storm, fourth hurricane, third major hurricane and first category 5 hurricane of the 2005 Atlantic hurricane season. It was the third most powerful storm of the season, behind Hurricane Wilma and Hurricane Rita, and the sixth –strongest storm ever recorded in the Atlantic basin. Hurricane Katrina got its name on Thursday, 25 August as it formed in the Bahamas and by the time it reached category three strength, it was reported that it appeared obvious that the storm was a major threat. The New Orleans Mayor C. Nagin in the news conference announced that the hurricane was not a test but a real deal, ordering the residents to evacuate²¹⁰.

According to Stephen Leatherman, who had studied hurricanes and runs the Hurricane Research Center, is of the view that hurricanes kill people because they refuse to settle out of their way. It is argued that New Orleans was built in a bowl between the Mississippi River and Lake Pontchartrain. New Orleans was a “fool’s paradise”. Katrina was the worst, vicious storm but was also a test²¹¹.

Most people viewed Katrina differently. A group of Columbia Christians for life announced that it had discerned God’s purpose in a storm because of the destruction of abortion clinics in the city. The proof was the photograph showing that the hurricane “looks like fetus facing to the left in the womb”, in the early weeks of gestation. At the other hand of the political spectrum, environmental activist, Robert F. Kennedy junior was blaming the hurricane on the governor of Mississippi who played a central role in derailing the “Kyoto protocol” on global

²¹⁰ Bloom S. Tsunami Threats: The long and short of it. 2005

²¹¹ (Time Magazine: August 2005).

warming. Based on the above explanations, the view on religion provides for the moral basis for human interaction and other provides for a forum for common action against external threats²¹².

The Chinese believe that natural disasters signal a fall of empires: a shift in the “Mandate of Heaven”. This was based on the 1976 Tang Shan Earthquake, where more than two hundred thousand people were killed and that marked the end of Mab’s reign. Therefore, this may be akin to seeing a fetus in the shape of a hurricane²¹³.

It was reported that reconstructing Katrina would take years; government could have built stronger, higher levees and shared up to the disintegrating coastline. In doing so, it could have been expensive, but certainly less costly than the Katrina recovery will turn out to be²¹⁴. It is argued that not all, US cities have good plans for taking out the sick, elderly and those without cars of their own. The officials knew that the least mobile residents lived in the most flood-prone part of town. This resulted in debates about racial implications of the tragedy since most of the victims were poor and black.

5.8 HEALTH IMPACTS AND CONCERNS

Aside from lack of water, food, shelter and sanitation facilities, there was a concern that the prolonged flooding might lead to an outbreak of health problems for those who remained in the hurricane affected areas. In addition to dehydration and food poisoning, there was a potential for communicable disease outbreak of cholera and respiratory illness, all related to the growing contamination of food and drinking water supplies in the area. People who suffer from allergies or lung disorders, such as asthma, may have health complications

²¹² Time Magazine: September 2005).

²¹³ Ludika S. South Asia Tsunami: DNA helps identify missing in the Tsunami Zone. 2005

²¹⁴ Sunday Tribune:(2 January 2005)

due to toxic and airborne irritants. It has been reported that five people had died of bacterial infection from drinking water contaminated with "Vibrio vulnificus," a bacterium from the Gulf of Mexico. It is established that outbreaks of severe infectious diseases such as cholera and dysentery are not considered likely because such illnesses are not endemic in the United States²¹⁵.

The impact of Katrina as a natural catastrophe indicated the need for environmentalists, government administration and emergency services to work together and develop strategies that will enhance the livelihood of the communities of New Orleans as well as prevention measures for future incidents²¹⁶.

A year after hurricane, it was reported that New Orleans was still affected by the disaster. As New Orleans prepared to mark the first anniversary of hurricane Katrina and the flood that swallowed 80% of the city, fewer than half of the 450 000 people who lived in its core had returned. Many have found new homes, new jobs and schools in other States, and are unable or unwilling to face the logistical, emotional and financial hurdles of trying to build their homes and lives there²¹⁷.

For those who had come back, the route had been paved with stress, confusion and frustration. In most homes progress remained elusive. It had been reported that the Lower Ninth Ward, a majority of black neighbors, there were houses still full of rotten debris and river sludge, rusting vehicles with grass growing through their radiator grilles, pylons leaning at odd angles. There is no electricity, water, and telephone service or school²¹⁸.

²¹⁵ (Daily News: 6 September 2005)

²¹⁶ Sunday Tribune, 2 January 2005:)

²¹⁷ World Health Organization, 2006

²¹⁸ Katrina's Legacy: A city of lost souls, Time Magazine: August 27 2006).

5.8.1 IMPLICATIONS FOR HEALTH AND ACCESS

It was established that Katrina threatened to lower the health status of Americans in the Gulf Coast region and increased health care disparities among racial and ethnic groups living there. The nation faced at least seven but interrelated challenges²¹⁹;

| CHALLENGE | OUTCOME |
|---------------------------|---|
| Public Health | The pre-existing public effort to prevent the spread of communicable diseases e.g. HIV pandemic were interrupted and needed to be resumed as quickly as possible. |
| Emergency and Trauma Care | In areas affected by Katrina, it had been destroyed or badly compromised and needs to be restored. |
| Primary Care | The care providers to serve low income populations remaining in directly affected areas had been reduced or eliminated. |
| Medications | Many of the patients lost their routine medication, diabetic supplies, asthma machines etc in the flood. |
| Acute Hospital Care | Capacity of hospitals for emergencies had been compromised. |
| Long –Term Care | The elderly and the frail lost their families and were in need of nursing home care. |
| Mental Health Care | The psychological stress and trauma caused by the destruction of homes increased the need for mental health services. |

²¹⁹ Challenges of Katrina (The Policy Brief on the Kaizer Commission on Medicaid and the Uninsured, 2)

Table: 5.2 Challenges of Katrina (The Policy Brief on the Kaizer Commission on Medicaid and the Uninsured, 2)

Across the city, Lake View a more affluent, majority white owned neighborhood, which suffered similar flooding, is also still devastated. But there are pockets of recovery, new houses have sprung up and roofs are being fixed. It has been reported that the suicide rate has tripled since Katrina and the doctors report an epidemic of depression and anxiety related illnesses. It is mentioned that for the people of New Orleans there is no “post” in post-traumatic stress disorder, says Father Jim Deshotel, a Jesuit priest²²⁰.

According to Medical Director of Catholic Charities of New Orleans, Dr Elmore Rigamer asserted that “the acute phase, the panic and high anxiety may have abated, but now, there is this chronic level of tension and depression. There is underlying despair and hopelessness, there is lack of confidence in leadership; there is worry that the levees are not ready to handle another big hurricane”²²¹

5.9 HOW PREPARED WAS THE GOVERNMENT TO DEAL WITH HURRICANE KATRINA?

Media reports indicated that the Bush administration was totally unprepared to tackle the onslaught of Hurricane Katrina. The *Sunday Tribune*²²² reported that ‘more and more people were demanding to know why federal funding for flood contingency had been cut again and again since the Republicans took power in 2001.

²²⁰(Wikipedia, the Free Encyclopedia, 17).

²²¹Bloom S. *Tsunami Threats: The long and short of it*. 2005.

²²² The Sunday Tribune (4 September 2005)

Max Hastings writing in *Sunday Tribune*²²³, noted that George Bush faced public anger and this had threatened his credibility as President of the United States of America. Ray Nagin, Mayor of New Orleans stated that government officials did not have a clue of what was happening'. He turned his anger against Bush, who flew over the devastated city, returning to Washington from a holiday on his Texas ranch. 'We had an incredible crisis here, and his flying over in Air Force One does not do it justice.'

But many Americans were already asking the question, 'If our government were so poorly prepared to meet a natural disaster, how can we expect it to do better if terrorists trigger a biological or nuclear catastrophe?'²²⁴. There was no mention by Bush and his aides of why the relief operation took so long to get off the ground. The *Daily News*²²⁵ notes that no reasons were given why the country's chief executive took more than 48 hours to get in and act and why President Bush omitted to make an on sight appearance. It has been reported that President Bush chose unqualified politicians rather than disaster experts to head the agency leading the relief operation in New Orleans. The *Washington Post* reported that five of the top eight FEMA officials had little or no experience in handling disasters and owed their appointment to their political ties to Bush.

5.10 ROLE PLAYED BY OTHER STAKEHOLDERS

Due to the lack of initial government assistance for Hurricane Katrina victims, both national and international stakeholders played a significant role in assisting destitute people. According to the *Mail and Guardian*²²⁶, promises of assistance came from the following countries:

- Britain's Ministry of Defence said a consignment of 500 000 military ration packs would be flown to the devastated region;

²²³ *Sunday Tribune* (4 September 2005)

²²⁴ *Sunday Tribune*: 4 September 2005)

²²⁵ *The Daily News* (9 September 2005)

²²⁶ *the Mail and Guardian* (9 -15 September: 2005)

- Kuwait stated it would donate 500 million dollars of oil products;
- Italy sent a military aircraft packed with blankets, cots bed supplies, inflatable dinghies, water purifiers and first aid kits to help 15 000 people;
- Cuban President offered to fly 11000 doctors to Houston with 26 tons of medicine;
- Japan provided 200 000 US dollars to the American Red Cross;
- Mexico sent 15 truckloads of water, food and medical supplies;
- Iran had offered to send humanitarian aid to the US even though President Bush has labelled the country part of the 'axis of evil';
- Saudi Arabia would donate 5 million US dollars to the America Red Cross; and
- Some of the other countries that also offered assistance are Sri Lanka, Canada, Singapore, Germany, Australia, Netherlands, Spain and Sweden.

5.11 MEASURES TO BE ADOPTED IN DEALING WITH DISASTERS

In the light of the increasing number of natural catastrophes that more countries are facing, according to Sunday Tribune²²⁷ the following are some tangible strategies that should be put in place:

- The government and its administration must have the will and foresight to protect the citizens of its country. In this regard, a comprehensive rollout plan for disaster management should be developed and emergency drills should be undertaken, this will help when the 'real' disaster occurs.
- With increasing technological sophistication the use of satellites may be used to offer an early warning system. Residents should be informed of the impending disaster so that appropriate evacuation measures can be put in place to save the loss of human life.
- Emergency services should be on high alert to assist in the evacuation and rescue efforts.

²²⁷ Sunday Tribune(4 September: 2005)

- Governments should include in their budgets, funds to help build devastated communities like New Orleans.
- With regard to New Orleans, international engineers on levee construction should be brought in. For example, the Dutch have an intricate system of dams and dykes to keep the land dry in a country that would have been engulfed by water if man had not intervened.

There should be a will and commitment by government to assist citizens of its country if they are in distress, for instance in New Orleans the US government took considerable time to address the catastrophe caused by Hurricane Katrina.

5.12 FAMINE IN SUDAN: CAUSES AND CONSEQUENCES

Famine is defined as “the moment when a group’s normal access to food completely collapses and mass starvation occurs. ” In Sudan, where 200 000 children can die from diseases like diarrhea and measles in a “normal year, the toll jumped to somewhere between the 350 000 and 700 000 during 1984, and in the next twelve months one million more could die, out of only a total child population of 6 million²²⁸ .

When one assesses the above figures, a clear indication of the devastation caused by famine in Sudan during 1984 is evident. According to the United Nations agencies, it is estimated that over half of the population of 20 million inhabitants were affected by famine. The inhabitants were ranging from pastoralists, peasants to the urban poor and refugees.

It is established that famine in Sudan was a humanitarian disaster caused mainly by human rights abusers, as well as drought and desertification. Although a marked drop in rainfall has been recorded in several parts of Sudan, where dura

²²⁸ Downing T. Vulnerability to hunger in Africa, 1991

(sorghum) the major food crop is produced, the occurrence of famine was still not a direct result of the drought²²⁹.

Sudan is a developing country and is categorized among the poorest in the world. Adaptive capacity to projected climate change is extremely low. Food supply is based on subsistence farming in marginal areas with mostly rain fed agriculture. Decrease in rainfall and climate extremes such as persistent drought or sudden flooding would put additional stress on fragile farming systems, reducing yield and food supply to the growing population²³⁰

However, other major groups of factors underlying famine in Sudan are as follows:

5.12.1 NATURAL CONDITIONS

It has been noted that since the seventies, Sudan began to experience a gradual drop in the amount and frequency of rainfall. The impact of the natural conditions was significant for the food base of the country. Drought had also affected the livestock population of the country, which adversely affected the increase in price of crops and animal products. However, drought could not still be regarded as the prime factor behind the occurrences of famine in Sudan²³¹.

5.12.2 GOVERNMENT POLICIES

According to De Beer & Mentz [1990:115]²³², in Sudan, the agricultural sector employs between 60 % and 75 % of the Sudanese working population. It is

²²⁹ Mentz J.C.N. and De Beer F., Development Problems in the Third World. 1990

²³⁰ Downing T. Vulnerability to hunger in Africa: 1991

²³¹ Glantz M. Drought follows the plow: Cultivating the marginal areas. 1996

²³² Mentz J.C.N. and De Beer F., Development Problems in the Third World. 1990

argued that the expansion in the agricultural schemes also contributed significantly in the process of environmental degradation in the central parts of Sudan.

5.12.3 SOCIAL IMPACT OF FAMINE

The aftermath of famine in any society is one of devastation insecurity, physical and economic weakness and vulnerability, particularly among small isolated communities. In Sudan, particularly the displacement of population, with its connotations of instability, migration and its disintegration of communities and families was a major effect.

Vagrancy as an urban phenomenon, in developing countries is usually associated with juvenile delinquency, riots, vandalism and crime in general. In the case of Sudan, a concomitant feature of vagrancy was glue-sniffing and inhaling of benzene, which is a health hazard, not only for sniffers, but also for the community at large²³³.

In view of the above, it can be argued that the nature of some of the social systems in the rural areas themselves have contributed to the problem of vagrancy. For example, in urban areas when people move in, with already limited resources in respect of social services, more pressure will be experienced on services like health, housing, education as well as job markets, leading to unemployment of not only migrants but the urban dwellers as well²³⁴.

5.12.4 DESTRUCTION OF INDIGENOUS SOCIAL SYSTEMS

One very negative effect of famine in rural areas is the destruction of indigenous social systems and organizations. The traditional power system had failed to

²³³ Fuggle, R.F. and Rabie, M.A. Environmental Management in South Africa. 1992

²³⁴ Fuggle, R.F. and Rabie, M.A. environmental Management in South Africa. 1992

respond positively to alleviate or minimize the impact of famine. This was manifested in the following ways:

- The failure to provide for the needy when crisis started due to decline of authority of the traditional leaders;
- Continuation of drought over long periods weakened the stored stock, even for the better off groups; and
- The failure of local leaders to control or manage the distribution of relief materials²³⁵ .

5.12.5 DEATH AND DISEASE

According to Goldthorpe [1984: 121]²³⁶ disease and loss of life, especially of infants, was another serious effect of famine. The common conditions of poverty, widespread illiteracy and the lack of services in the rural areas increased tremendously, the vulnerability of rural communities and this explains the high death toll caused by famine. Malnutrition, vitamin deficiency and the change of environment resulting from displacement of population may have caused the immediate death of 12% (96 000) of babies born annually during the last few years.

The figures indicate some very serious long-term consequences of famine in the area of health. Food shortages and starvation slowly destroy the body's immune system and gradually cause death. With diseases like tuberculosis, cholera and others being endemic in the country, there is high infant mortality. When a child escapes this death trap, he remains under threat of being mentally or physically handicapped for life. In addition, a deficiency in vitamin A leads to gradual loss of vision which is a problem reported in Eastern Sudan. Starvation influences

²³⁵ Downing T. Vulnerability to hunger in Africa: 1991

²³⁶ Goldthorpe J.E. The Sociology of the Third World" Disparity and Development 1984

mothers and in the end might lead to permanent infertility, which again influences that natural population growth²³⁷.

5.12.6 LESSONS OF FAMINE IN SUDAN

Some scholars assert that famine was not all evil, there were some positive implications that would reduce risk of famine in the future, minimize environmental degradation and ultimately halt it. It is argued that regarding environmental awareness; there was some noticeable rise in the understanding of the environment, especially those that were drought stricken. Rural farmers became more aware of the marginality of their environment. For government, the availability of food crops within the country was the first priority²³⁸.

In comparing other countries experiences to the South African context, legislation on the management of disasters (inclusive of all communities) is as recent as 2002. Most countries in the developed world have integrated their communities and they do not have racial segregation. Access to emergency and/or disaster management facilities is open to all citizens. There are very few similarities between South Africa and the developed world. On the African continent, the economic realities remain a major constraint in the management of disasters.

The African experience is very similar to the Indian experience with regard to man-made disasters. The well-known case of Union Carbide in India is about a huge explosion in an insecticides factory almost two decades ago. The extent of the disaster bears testimony to the fact that local disaster management facilities in the developing countries are inadequate to deal with risks arising out of industrial activities²³⁹.

²³⁷Avissar R., Land – Atmospheric interaction, Encyclopedia of Earth Science, 1995

²³⁸ Downing T. Vulnerability to hunger in Africa: 1991

²³⁹ Disaster Management Seminar notes).

Whilst this chapter is discussing the international experience, it is important to highlight the industrial activities of multinationals operating from developed economies but locating huge chemical based industrial plants in the developing countries including South Africa. It is not known at this stage whether these industrial plants are located in India and Africa because of the low cost of labour or because of the non-stringent environmental and/or disaster management requirements. This area requires its own separate investigation. What is noted here is that international best practices in developed countries do not seem to follow the activities of the under-developed countries where industrial activity is located.

There are many cases, which can be quoted including the oil refining industry. Recent disasters in the Nigerian context have been associated with the bursting of oil pipes, which are running close to very densely populated settlements. In KwaZulu- Natal, the communities of Wentworth are engaged in running battles with Engen Petroleum Company on the basis of the pollution of the air, pollution of underground water and the general high risk and vulnerability situation occasioned by the oil refinery in the midst of this community. Studies are currently underway to establish the actual disaster-vulnerability of the area as a result of the refinery. These are being monitored closely.

A similar situation is unfolding in the Table Bay area around Caltex Oil Refinery in Cape Town. This study draws from experiences from international best practices. Recently there has been high levels toxicity found from Bluff explosion. It was reported that a local environmental organisation sent samples to the US and tests revealed a high concentration of chemical called

“bromomethane”, however this was despite the assurance by municipal authorities that people’s lives were not in danger²⁴⁰ .

SUMMARY OF THE CHAPTER

The chapter explored the disasters that had occurred around the world. Special focus was given to the 2004 Indian Earthquake, Hurricane Katrina as well as Famine that was experienced in Sudan. Definitions of disasters as well different types of disasters were clearly outlined.

The above cases were analyzed individually, which provided an insight on humanitarian, economic, health as well the environmental impact that was experienced in each case. The chapter also explored the challenges or state of readiness by Governments in dealing with disasters. Measures to be adopted in dealing with disasters were outlined. In the case of famine in Sudan, positive lessons emanated such as the level of awareness in dealing with the environment was enhanced. Discussions of the impact of disasters that have occurred in KwaZulu- Natal, more especially in the Bluff and Wentworth areas were highlighted.

²⁴⁰ TNT Magazine: 2007

CHAPTER SIX

RESEARCH METHODOLOGY AND ANALYSIS AND PRESENTATION OF DATA

6.1 Introduction

The empirical investigation focuses on the impact of Disasters on Public Health: An investigation of Disaster Management requirements in the rural municipality of Ndwedwe.

6.2 Aims of the study

The study generally aims at exploring the current Disaster Management Framework as set out in the Disaster Management Act, with a view to establishing the elements of a Disaster Management Plan that can cater for the Disaster Management requirements of a rural Municipality.

The study specifically aims at identifying administrative opportunities within Public Health Law for the management of Disasters in rural areas. In addition, the study specifically researches and presents a Rural Municipality Disaster Management Plan.

6.2 Objectives of the Questionnaire

The following objectives have been outlined:

- to establish the local understanding of disasters;
- to identify the most affected groups in the study area;

- to establish the nature of disasters and emergencies that are common in the area;
- to determine the extent / impact of such disasters in the context of basic health and safety;
- to establish in broad terms previous disasters that have occurred in the study area;
- to identify the source of help received during the previous disasters;
- to establish from local people the adequacy of help;
- to establish accessibility of help; and
- to determine the appropriateness of assistance against the Disaster Management Framework.

6.3 The Sampling Technique and Description of the Sample

According to Sekaran [1992: 226]²⁴¹, “a sample is a subset of the population”. However, not all the elements of the population would draw form in the sample”. By studying the sample, the researcher would draw conclusions or make inferences that would allow generalizations about the target population.

The reason for selecting a sample can be attributed to various factors, the most important being that, it is simply not possible to study every element in the population or to engage in a laborious exercise to collect data from the entire population.

Therefore, studying a small sample is likely to yield reliable results and facilitate the data collection whilst minimizing the error impact.

²⁴¹ Sekaran U.. Research Methods for Business. 1992

The population parameters have been determined precisely in a sample survey since not every element in the target population is included in the research design. However, the fundamental premise for choosing a good sample is that it should be representative of the target population [Pillay 2000: 331]²⁴².

To test the hypothesis, the investigator had to decide on how many subjects to choose and how to select those subjects so as they represent a whole.

The respondents included community members of Sigudu area and Ezindlovini, community leaders as well government officials.

6.4 Selection of the Sample

The selection of the sample was a two –way procedure involving:

- Selection of officials
- Selection of community

6.5 Data Collection Techniques

Specific data collecting techniques enabled the researcher to systematically collect information in order to answer questions in a conclusive way.

A survey was conducted to answer certain questions, test certain hypotheses or serve as an explanatory study and it was essentially a method of obtaining information from a group of respondents by means of direct contact, namely either through personal interviews or self-administered questionnaires.

²⁴² Pillay P. impact of Urbanisation on Municipal Service Delivery with particular emphasis on the provision of water in the Durban Metropolitan Area, 2000

6.5.1 Procedure

The researcher undertook the administration of the questionnaires to respondents. Participation was voluntary and the respondents were assured of confidentiality. The respondents were clearly informed about the purpose of the research.

6.6 The Research Instrument

The research instruments used to collect data in this project were:

- 1) Questionnaires; and
- 2) Interviews

6.6.1 The Questionnaire comprised of seven sections

The questionnaire was divided into the following sections;

6.6.1.1 Section A: Demographic Details

A good introduction at the beginning of the research is important. The intention is to let the respondents know about what is sought by the researcher. The exercise is to ensure that respondents are informed about the exercise and are participating at own will. Demographic information such as the gender, marital status, age, level of education income level and number of the children in a household was sought in this category. This was to ascertain the nature of respondents that participate in the study.

6.6.1.2 SECTION B: UNDERSTANDING OF DISASTERS

Information sought in this section included the respondent's understanding of disasters. It also looked at the types of disasters that they had experienced as well as how they were affected by such disasters.

6.6.1.3 SECTION C: PAYMENT FOR SERVICES

This section intended to establish the cost recovery and indigent policy aspects in a rural municipality. It also looked at types of services that are available in the area as well as those that the respondents are not able to afford.

6.6.1.4 SECTION D: DISASTER MANAGEMENT FACILITIES

In this section, the researcher intended to assess the impact of the inclusion of the rural municipality within the established disaster management facilities of the area.

6.6.1.5 SECTION E: INFRASTRUCTURE AND SERVICE DELIVERY

This section intended to determine the role of infrastructural and service delivery in respect of Disaster Management in the area of Ndwedwe.

6.6.1.6 SECTION F: INSTITUTIONAL ARRANGEMENTS

In this section, the researcher intended to provide an analysis in respect of the role of stakeholders in assisting municipalities in managing disasters.

6.6.1.7 SECTION G: PLANNING POLICY ALIGNMENT

The intention of the section is to establish the alignment between local government planning, public health law as well as disaster management planning.

6.7 The Interview

Interviewing as a method of collecting data and evaluating data can be very informative. The advantages of interviewing are primarily related to naturalness and spontaneity, flexibility observation and control of the environment, high response rate, and access to information and non-verbal responses²⁴³.

6.8 Response Rate

In total 120 questionnaires were administered. This was distributed in two areas that were specifically targeted for the study within Ndwedwe. The two areas were Isigudu and Ezindlovini. There was a 100% response rate to all questionnaires administered to the respondents. However, 90% of the returned questionnaires were considered fully completed. The remaining 10% of the questionnaires were not properly answered or incomplete and were therefore not taken into account. However, information that was relevant to the study was scrutinized.

6.9 Limitations

The study encountered some limitations, which were carefully assessed so that the reliability and validity were not compromised. The Provincial Department of Local Government is currently finalizing a Provincial Disaster Management

²⁴³ Kerlinger B. Foundations of Behavioural Research. 1986

Strategy, which will assist municipalities to implement the Act. When the study was conducted, the Provincial Disaster Management Strategy had not been finalized and therefore the emerging Disaster Model has not been tested against the strategy.²⁴⁴

6.10 The Findings of the Study

The findings of the study are as follows;

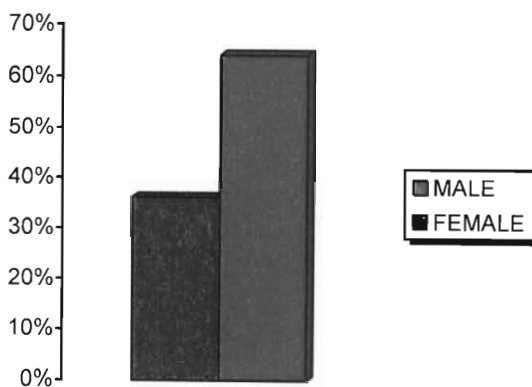
6.10.1 SECTION A: DEMOGRAPHIC DETAILS

Gender Respondents

TABLE 6.1

| | | |
|---|--------|-----|
| A | Male | 36% |
| B | Female | 64% |

FIGURE: 6.1 GRAPHICAL REPRESENTATION OF GENDER



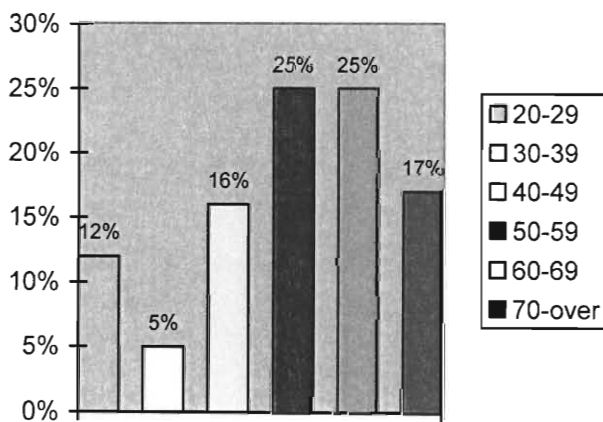
²⁴⁴ Source: General Manager- Disaster Management Centre, Municipal Infrastructure and Disaster Management Directorate)

Age Group

TABLE 6.2

| | |
|-------------|-----|
| 20-29 | 12% |
| 30-39 | 5% |
| 40-49 | 16% |
| 50-59 | 25% |
| 60-69 | 25% |
| 70 and over | 17% |

FIGURE 6.2 GRAPHICAL REPRESENTATION OF AGE

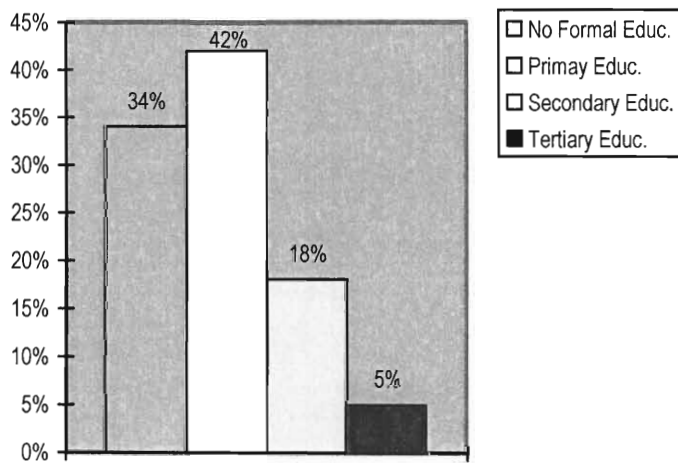


Educational Level

TABLE 6.3

| | |
|---------------------|-----|
| No formal education | 34% |
| Primary Education | 42% |
| Secondary Education | 18% |
| Tertiary Education | 5% |

FIGURE 6.3: GRAPHICAL REPRESENTATION OF EDUCATIONAL LEVEL

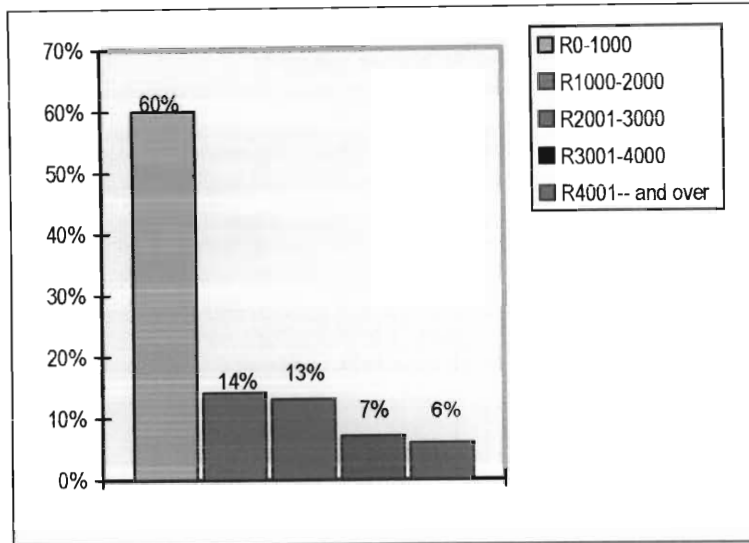


Income Level

TABLE 6.4

| | |
|----------------|-----|
| R0-1000 | 60% |
| R1001- R 2000 | 14% |
| R2001-R3000 | 13% |
| R3001-R4000 | 7% |
| R4001 and over | 6% |

FIGURE 6.4: GRAPHICAL REPRESENTATION OF INCOME



Number of children in household

| Number of children in household | % |
|---------------------------------|-----|
| 1-2 | 5% |
| 3-4 | 10% |
| 5-6 | 50% |
| 7-8 | 20% |
| 9 and above | 5% |

6.10.2 SECTION A: DEMOGRAPHIC DETAILS

The survey was conducted amongst residents of Indwedwe Local Municipality. In total 120 respondents participated in the study. They composed of 64 % rural women with 36 % being rural male including the youth. This is indicative of the rural situation where men have been attracted to urban centres given the employment potential of such areas. The age group among the respondents

ranges as follows; 20-29 categories constitutes 12%, 30-39 constitutes 5%, 40-49 constitutes 16%, 50-59 constitutes 25%, 60-69 constitutes 55% and 70 and above constitutes 17%

The majority of the women respondents were between the age group of 50 years to 69 years. About 70 % of them are heads of their households. They were born in the area or they have moved from adjacent areas into the study area. 50% of the children in a household are between the ages of 5 to 6 years old.

About 34 % of the respondents are in formal employment. These are mostly teachers and employees in the agricultural sector. 66 % of the respondents are either unemployed or they rely on social grants from the government. The research could not establish the reasons why the majority of these women are heading their households.

The educational levels of all respondents were established. 5% had tertiary education, 18% had senior secondary education 42 % attained primary school education and 26 % had no educational background. The majority of skills in the study area are associated with domestic work and manual work in sugarcane plantations. The income levels with regard to households are limited to R0 to R1800.00 per month, except for some official who earn more R4000 per month. This consists of social grants and contributions from family members who work in the cities but do not necessarily reside in the study area.

6.10.3 SECTION B: UNDERSTANDING OF DISASTERS

There is no clear distinction between disasters and emergencies in the study area. Respondents made examples of incidents when they refer to disasters. Although some were able to display the understanding of disasters, this was mainly related to their past experiences

90 percent of respondents interviewed pointed the following types of disasters that had affected them severely in the past: drought, floods, fire and violence. Other types of disasters although were mentioned, were not of the same magnitude compared to the four prioritized.

Type of disasters experienced in the area:

| Disasters | % of respondents experienced |
|-----------|------------------------------|
| Drought | 30% |
| Floods | 30% |
| Fire | 30% |
| Violence | 10% |
| Other | none |

Emergency situations that face families and residents from time to time, particularly with regard to the need for ambulances are associated with more developed areas. There is a general acceptance that access to such facilities is not possible in the study area.

All respondents highlighted the incident of fires, floods and violence as a major disaster occurrence. More than 80 % of houses in the study area have a thatch roof structure. The incident of these structures catching fire was quoted as being frequent. The seasons of the year do not have any significance. In the hot seasons, most houses catch fire as a result of storms. In the cold seasons, most houses catch fire as a result of carelessness with fire-based heating systems. Unfortunately the success of the electrification project has not been able to alleviate the incidence of fires.

Another incident of disaster noted by respondents is the flooding of rivers. This affects school children in the main that cross-rivers at points where there are no bridges to get to their schools. This disastrous situation is exacerbated by the

age of the children (from 6 years to 17 years) and the fact that rivers in the area tend to flood even on days when it is not raining. Further discussions revealed that when it rains in the river catchments areas outside of the study area, flooding occurs without notice.

Violence that occurred during 1994 has been indicated by respondents as an incident which caused people to leave their homestead and move to other areas. This distorted their patterns of living hence schools had to be closed and people had to live in the mountains. Family members died, houses were burnt down and livestock was also lost.

6.10.3 SECTION C: PAYMENT OF SERVICES

Payment of services

| Type of service | % of respondents who are able to pay |
|---------------------|--------------------------------------|
| Water | 60% |
| Solid Waste removal | 15% |
| Electricity | 25% |
| Rates | 0% |

About 60% of the respondent's interviewed are paying for water services. The electricity is still reported as a challenge to install or connect directly to a household; hence respondents are mainly using the card system. This is still a privileged to areas closer to the Municipality compared to those that deeply rural. Solid waste removal is not paid for by the majority of the respondents hence they still dig holes to discard waste and at times burn it at night.

None of the respondents are aware of the Municipal Property Rates Act (Act no. 6 of 2004). They regard the usage of land and other resources associated with land as free of charge. There is an understanding that there is a cost associated with the provision of emergency and disaster management facilities. This however is regarded as a government responsibility. The respondents'

understanding is that the government (unclassified) should provide emergency and disaster management facilities free of charge.

Further discussion revealed that the government should charge for services in communities where residents are in formal employment. The indigent households, which include those, that are headed by women and children should be exempted from these payments.

Respondents seem to accept other forms of payment, which they must make to the institution of traditional leadership but not to local government. Categories of payments made to the institution of traditional leadership in the area of Indwedwe (also known as Qadi) were given as follows:

- (a) Ukukhonza (Contributions towards the well-being and upkeep of the institution of traditional leadership);
- (b) Administration costs (Payments for administrative services);
- (c) Land use costs;
- (d) Dispute resolution costs (Criminal); and
- (e) Dispute resolution (Civil).

SOME INDICATION OF APPLICABLE TAXES

Figure 6.5

| CATEGORIES OF TAXES | AMAQADI |
|---|--|
| Residential Tax | <R200 pa |
| Land Use Tax | <R50 – 400 |
| Thatch Grass Tax | |
| Contributions towards the Chief's car | - From purchase to maintenance - Periodic |
| Fields – Tilling Tax | - |
| Payment for ceremonies and/or events at the Chief's place | |
| Dog Tax | Varies with type of Induna R10 pa fd R2 md |

All the categories of payments listed above are made to the traditional leadership institution. These payments are mainly for services provided which are administrative in nature.

6.10.4 SECTION D: DISASTER MANAGEMENT FACILITIES

In responding to disaster management facilities responsible for their area the participants highlighted the following;

- The Municipality (unclassified) = 44%
- Traditional Leadership Structures = 50%
- Those that were unsure = 6%

The performance of disaster management facilities listed above was rated as good or bad amongst the choices that were given.

Respondents remarked that there are no emergency services in the area. There are no facilities for fire fighting and medical emergencies. They have never seen a fire-fighting vehicle coming into their area to assist with the putting out of fires. Their interaction with and visits to the urban areas of Verulam, Tongaat and Durban has exposed them to ambulance services and fire fighting vehicles. They associate the availability and involvement of such facilities in disasters and emergencies with urban areas and not with rural areas.

For emergency services, residents rely on private facilities. This means that in the event of an emergency requiring the transportation of a resident to a medical facility, a private individual is hired (at a fee) to provide these services. The mode of transportation differs according to available access. Vehicles are hired where there is road infrastructure. In both cases, the family concerned pays a fee.

6.10.5 SECTION E: INFRASTRUCTURE AND SERVICE DELIVERY

Respondents cited the inadequate and poor physical infrastructure as a challenge in the provision of emergency and disaster management assistance. 60 % of the respondents claim that they do not have access to usable roads. In instances of illnesses and injuries, wheelbarrows are used to take patients to the nearest clinic over long distances. The absence of bridges was regarded as a major contributory factor in flooding situations.

Respondents are not aware of emergency vehicles, which include ambulances and fire management infrastructure advertised or publicized by the local government in their area. In instances where expertise had to be brought in to assist with flooding situations, members of the South African National Defense Force brought their own vehicles and equipment from outside. Traditional leadership in the area contacts the available infrastructural support that is provided mainly by the South African Police Services.

6.10.6 SECTION F: INSTITUTIONAL ARRANGEMENTS

In the 1987 floods, respondents are aware of the involvement of churches, the Red Cross and other organisations. All these organisations came in to provide support and assist affected families. Respondents are not aware of the co-ordination of these disaster mitigation initiatives. They, however, noted that at the time Indwedwe Local Municipality had not been established. The interventions included the following:

- The provision of tents;
- The provision of blankets;
- The provision of food; and
- The placement of families in community halls.

The traditional leadership at the time played a role in ensuring that the correct beneficiaries receive assistance. They also ensured that law and order was preserved and the vulnerable communities were protected. The mitigating initiatives were linked later to housing development projects and families were assisted by the relevant officials to reconstruct their damaged houses.

Respondents have no clarity on what should be the role of government in disaster management. The army has been seen in the past playing some role. This was the experience during the 1987 floods. Local government has not been seen playing any role in emergency services or disaster management. It does not seem to be a good understanding of the presence and the role of local government in the area. Respondents do not believe that local government has got the experience and resources to provide emergency and/or disaster management services.

Respondents believe that the assistance they have received so far was as a result of the involvement of traditional leadership. Traditional leaders had always led the co-ordination and the reporting of disaster and emergency situations

6.10.7 SECTION G: PLANNING POLICY ALIGNMENT

Respondents indicated that the following skills should drive their local disaster management plan;

- Health = 70%
- Engineering = 25%
- Defence = 5%

100% of the respondents expressed that public health law experts should be involved throughout the planning of a local disaster management plan. 100% of the respondents strongly disagreed that the disaster management plan can be approved without the Public Health Law input.

None of the respondents are aware of any consultation process engaged into by local government with regard to disaster management. Meetings have been held in some community halls where the Integrated Development Planning was discussed. This was, however, limited to investigation of social facilities such as halls and schools.

There are izinduna in the area have organised meetings to talk about pressing emergency issues. This has been the practice in instances where flooding had taken place. Izinduna have been quite feasible when children were not accounted for and searches had to be organised. The South African Police Services play some role alongside Izinduna in the mitigation of emergencies and disasters. Local government on the other hand is not seen to be visible or to be playing any significant role in the consultation process regarding emergencies and disasters. Respondents are of the view that local government will require

capacity to be able to take the consultation process to all the rural areas of Indwedwe. Other transportation modes would have to be used because vehicles will not be able to reach all the places.

6.11 Discussion of Impact of Disasters

The impact of disasters in communities is outlined as follows;

6.11.1 Disruption of Livelihood

Floods and fires in the study area are known to have disrupted livelihood resulting in destitute families and increasing the already high levels of poverty. Families in these areas are mostly subsistence farmers who rely on land and other assets used for tilling the land. None of the people in the area insure their properties and other assets and this leads to total losses in the event of floods. Families who keep crops over long period of time to provide grain and other sources of proteins and carbohydrates lose out in the event that such crops are washed out into the rivers. The timing of floods is critical with regard to whether the crops that were washed out were already in storage or they were still in the field before harvest time.

The vulnerability of the community in the study area is understood against the specific circumstances and the people at risk in flood-prone areas. It is noted also that people in the study area build their houses without any reference to the flood line. In other words, flood planes are freely available for home construction purposes. The 1987 flood is regarded in the study area as a flash-flood. This means that there were no warning signs for people in the flood planes and therefore no precaution was taken.

6.11.2 Impact on Health

Floods are known to be followed by an outbreak of cholera in the study area. Floodwaters were capable of increasing the risk of diseases such as cholera in the study area. Pit latrines which are in the majority of the homes were washing their contents into the drinking water and in the absence of water-born sewage systems, the spread of diseases increased long after the flooding had abated.

The aftermath of the flooding that has occurred in the area was characterised by respiratory illnesses. This is associated with the incidence of malaria brought about by the multiplication of insects in the various pools of stagnant waters. The absence of storm water drainage systems along the various access ways in the study area created a number of pools of dirty water, which attracted mosquitoes and other insects.

6.11.3 Environmental losses

The study area has noticeable traces of soil erosion. There is an understanding that the impact of free flowing water and occasional floods are behind this environmental occurrence. Another significant development is the diminishing indigenous forests in the area. Respondents believe that there is a relationship between environmental degradation and generally unsafe conditions in the area. Alongside this are the development of informal settlements and the general increase of settlements.

Informal settlement dwellers seem to be at the highest risk in the event of flooding. Overcrowding complicates evacuation processes and the numbers of people are generally too high for the limited resources, which are brought in during flooding periods. This relates to tents, blankets and foodstuffs. It is not clear whether the informal settlements found in the study area represent an urbanisation process. There are traces of households who have been attracted

to neighbouring urban areas after displacement by floods in the study area. The promise of jobs in the urban areas has resulted in the retention of such families.

6.12 Emergency and Disaster Management Needs

Communities in the study area have been excluded from access to emergency and disaster facilities. This exclusion is racially based given that these communities were governed by traditional authorities flowing directly from an environment arising out of the Black Administration Act²⁴⁵, as well as the Black Authorities Act²⁴⁶. The neighbouring areas falling outside of this legal reality are characterised by infrastructure and access to emergency and disaster management facilities.

The need for access to emergency facilities is confirmed. Although there is confusion between emergencies and disasters, the legal framework provides clarity. Emergencies are daily occurrences in respect of which interventions are required. On the other hand, disasters have to be declared in accordance with a process set out in the Disaster Management Act,²⁴⁷. An emergency situation does not need any legal declaration. On the other hand, government resources can only be mobilised in response to a disaster situation if such disaster situation has been duly declared in accordance with the law.

The community of Indwedwe have emergency and disaster management needs within the area of floods, droughts, fires and risk situations associated with households. These risk situations include injuries and illnesses of a life-threatening nature. Illnesses in this regard include pregnancies and complications associated therewith.

²⁴⁵ Black Administration Act (Act No. 38 of 1927)

²⁴⁶ Black Authorities Act (Act no. of 1951)

²⁴⁷ Disaster Management Act, (Act No. 57 of 2002)

The emergency medical care required by the community is guaranteed (in terms of access) by the Bill of Rights. Exclusion of access negates the intentions behind the allocation of disaster management competencies and powers to local government in terms of Schedule 4(b) and Schedule 5(b) of the Constitution. The position of exclusion has prevailed for many years and the communities seem to have resigned themselves to the fact that they are different to other communities with access to these facilities.

Previous incidents confirm the ongoing vulnerability and the need for emergency and disaster management capacity in the area. These incidents have the most negative impact on women and children. The rural nature of the area results in a higher number of women in the area as opposed to men. Lack of access to facilities therefore seriously compromises the quality of life enjoyed by the women and children. This will have long-term negative effects on the Human Development Index (DHI).

6.12.1 Government Support

Although the Disaster Management Framework Act provides the basis for District Municipalities, Indwedwe Municipality, which is part of Ilembe District Municipality, has a responsibility to intervene in emergencies and disasters. There is failure on the part of local municipality to provide this service. It can be argued that Ilembe District Municipality may have made provision for Indwedwe communities. The reality, however, is that no infrastructure is as yet in place and no services are received in the context of emergencies and disasters.

Indwedwe Municipality has not established itself as a visible government intervention in the area of disasters and emergencies. This has led to serious concerns and lack of confidence in the system of local governance as a whole. There has been no significant local co-ordination of government interventions. The South African Police Services and the South African National Defence Force have been seen coming in after traditional leadership had initiated

communication. There is no formal cooperation between traditional leadership structures and local government. This can be understood against the failure of the Municipal Structures Act²⁴⁸ to accommodate traditional leaders as part of formal municipal structures. The Traditional Leadership Framework Act,²⁴⁹ makes provision for cooperation between local government and traditional structures. This Framework Act however makes provision for provinces to draft their own legislation. This legislation will take into account provincial sensitivities regarding the required levels of co-operation between municipalities and traditional leadership.

Access to disaster and emergency assistance is not locally co-ordinated. Assistance is regarded as some form of social responsibility or humanitarian effort by a wide range of stakeholders, which include government and non-governmental organisations.

6.12.2 Consultation

There is limited evidence of a consultation process in the study area. Consultation appears to have taken place in terms of Chapter 5 of the Municipal Systems Act. This is with regard to IDP meetings, which have been held in the area. It could not be established whether consultation took place with regard to the development of the Ilembe District Municipality Disaster Management Plan. Indwedwe is one of the local municipalities within Ilembe District Municipality. It can be expected that the Australia/South Africa Local Government Partnership's initiative in the development of the district municipality's disaster management plan should have covered the consultation process in Indwedwe. This could not be established from the respondents who participated in the study.

Some level of participation has been achieved in the traditional constituencies. The izinduna held meetings in these constituencies whenever disasters and

²⁴⁸ the Municipal Structures Act (Act no. 117 of 1998)

²⁴⁹ The Traditional Leadership Framework Act, (Act No. 41 of 2003)

situations of emergency were threatening. These meetings have been successfully held to co-ordinate the assistance provided to beneficiaries. Potential and real conflict have been resolved and avoided as a result of these meetings.

6.12.3 Indigenous Knowledge

This analysis covered the historical background to disaster management in the area. This can assist in ensuring that the incorporation of indigenous approaches and methodologies (as required by the Disaster Management Framework Act, 2004) can be possible.

Indigenous approaches to disaster management refer to practices contained in indigenous knowledge systems which continue to be used by traditional communities to respond to disasters. These practices differ from community to community and they are based on a sense of civic duty amongst the communities which flows directly from the traditional and communal nature of society. This characteristic of the community can be ascribed to indigenous knowledge. There are possibilities for a further development of this approach to encourage the voluntary involvement of communities in disaster management. This can reduce the costs of providing disaster management services. There are, however, implications for training given the low levels of education and the responsibilities that come with the management of disasters.

6.12.4 Cost recovery

The biggest challenge in the recovery of costs is the indigent nature of the community. Economic activities are almost non-existent. There is a heavy reliance on government grants. The incidents of extended families exacerbate the problem of cost recovery as each family has a number of mouths to feed. There is a culture of entitlement to government grants. This culture, however, has developed from a reality of exclusion from all forms of economic activity.

Even those that are involved in the farming activities do so, on a subsistence basis. The accessibility of the government social grant against the reality of lack of employment opportunities increases reliability on social grants particularly given the combined financial benefit of old age and children's grants on a single household.

Most communities in the area are catered for in the indigent policy of the municipality. The incidence of high number of women increases the vulnerability levels. The Municipal Property Rates Act²⁵⁰ is not enforced in this area. There is also no evidence of a land and property audit. In other words, residents are not aware of the value of their property. There is no billing system in place and this brings in another dimension to cost recovery. Although the study did not seek to establish tenure arrangements, the entire land use management system in the study area allocates land on "permission to occupy basis" which is common in all land under Ingonyama Trust. The study confirms two dimensions. The first dimension is the culture of non-payment and the second dimension is the culture of non-collection.

Regarding the community's ability to pay for services received, the analysis (indicated on payment of services statistics) reveals that the municipality is not recovering any service delivery costs in the area. It is noted that the study was conducted before the Municipal Property Rates Act came into operation. However, some forms of payments are being made on a regular basis to the institution of traditional leadership. The definition of indigent communities does not seem to affect the ability of the communities to make payments to traditional leadership. Opportunities exist for the training/education of communities and the consolidation of local governance to include traditional governance. If this can be done successfully, payments and/or contributions that have a traditional basis can be re-routed towards the costs of the provision of emergency and disaster management facilities and services.

²⁵⁰ The Municipal Property Rates Act (Act no. 6 of 2004)

6.12.5 Infrastructure

The analysis shows a poor state of the infrastructure. The road network has not provided for all-weather access to these rural communities. There is no evidence of a comprehensive Integrated Transportation Plan (ITP) as a subsection of the IDP. It could not be established whether Indwedwe's future infrastructure is catered for in the Municipal Infrastructure Investment Plan (MIIP) for the next five years. This uncertainty has serious implications for infrastructure development, which will be funded through the Municipal Infrastructure Grant (MIG) in the next 5 years. Some activities were noted where road infrastructure was provided by the Department of Transport in KZN and by Ilembe District Municipality utilising funding from the Consolidated Municipal Infrastructure Programme (CMIP). This funding mechanism (CMIP) was consolidated into MIG in 2004.

There has been no technical assessment of infrastructure backlogs in the study area. These assessments are required by the provincial government in order to monitor the size of the challenge and the future requirements for capital investments.

In dealing with the infrastructure, this analysis indicates that there are no emergency infrastructural capacities in the study area. Ambulance services and fire fighting vehicles have to be brought in from outside the area. There is also no management and no administrative capacity for both the emergency and disaster management requirements. There is heavy reliance on external capacity.

6.12 .6 Communication

Some form of telecommunication is in place. Cellular networks augment this. None of these networks are dedicated to disaster management. In areas where

there is no telecommunication infrastructure, there is also no wireless communication arrangement. This factor is exacerbated by the absence of active municipal ward committees.

The community is not aware of whom to contact (in the municipality) in the event of emergencies or disasters. There is no communication campaign through billboards and other forms of advertising setting out disaster communication protocols. The old order arrangements that preserve communication lines between traditional leadership and the SAPS seem to be working and the communities rely on these channels.

6.12.7 Intervention and mitigation

It is not clear whether the Provincial Disaster Management Centre co-ordinated the interventions that had been activated in the past. These interventions brought stability in the study area. The post-disaster mitigation process attracted large groups of provincial, national, parastatals and private sector stakeholders. This helped in increasing the bulk of food and blankets delivered. It could not be established whether these stakeholders are part of a permanent forum, which is mobilised for this area each time a disaster or emergency occurs as per the requirements of legislation. It is noted that none of the respondents are aware of the contact details of members of the group that contributes to the stabilisation and mitigation processes.

6.12.8 COMMUNITY SAFETY PLAN

The community of Indwedwe does not have a safety plan. The identification and assessment of a hazard is the first step in the establishment of a Local Community Safety Committee (LCSC). This structure has to be affiliated to the ward committee. The institutional arrangements can be summarised as follows:

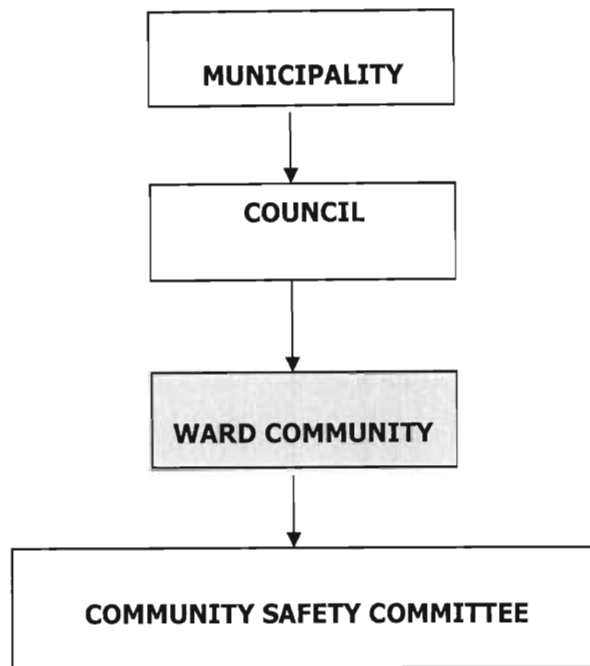


Figure 6.1: Community Safety Plan (Disaster Management Summit: 25-26 May 2006)

The committee is expected to monitor changes in the environment, particularly “unanticipated” changes. The monitoring role plays a major part in improving the disaster preparedness of the area. The appointment of a local community safety committee moves disaster management from being a “right” to being a “responsibility”. The community’s responsibility to respond to adverse events has been compromised through failure to establish local committees.

6.13 SPECIFIC FINDINGS

The specific findings in the study are as follows;

6.13.1 The Relationship between Disasters and Vulnerability

The general findings lead to a conclusion that there is a correlation between vulnerability and disasters. There are different levels at which the impact of a hazard is linked to vulnerability. Hazards can be natural or man-made. There

are causes for the various levels of vulnerability. The following causes emerging out of the study area can be discussed as follows:

- (a) Limited access to electricity, physical infrastructure and resources;
- (b) Lack of proper institutional arrangements;
- (c) Lack of appropriate skills;
- (d) Rapid population growth, rapid urbanisation, deforestation;
- (e) Lack of disaster preparedness;
- (f) Prevalence of diseases;
- (g) Indigent communities with no or low income levels; and
- (h) Vulnerable livelihoods.

The causes listed above are confirmed by the Indwedwe Local Municipality Integrated Development Plan of 2005/06. Effective coping strategies are required to address the vulnerability of communities. This therefore, entails understanding the pattern of disaster situations and taking cognisance of the community' actions in preparation for future disasters. This, however, does not apply to major disasters, which have no previous pattern to refer to, and all prior learning becomes irrelevant.

6.13.2 Strategies for Prevention

There is no strategy for the prevention of disasters in the study area. The actions by traditional authorities are an indication of lack of political and/or government commitment to address disasters in the area. Government is required to intervene and play a role in the designing and implementation of prevention strategies. This is done in co-operation with the public and for this reason it entails a public awareness campaign.

The findings reveal opportunities for devising prevention strategies at the level of individuals and small groups. The small groups involved in the construction of homesteads can be educated to understand environmental factors such as

flooding. This situation requires government support in the determination of flood lines. The environmental impact assessment requirements for the inner-city must therefore apply to the outlying rural areas as well. Unfortunately, the realities are that rural based municipalities do not have the requisite skills and finances to finalise environmental impact assessments.

6.13.3 The mitigation of impact

There seems to be one dominant activity in the study area, which focuses on the distribution of shelter and food. The risk however extends to the loss of physical security and to a limited extent, the loss of income. It is, therefore, possible for local government in the study area to broaden the agricultural sector to include the participation of subsistence activities and create additional social support networks. The introduction of insurance can lead to a great minimization of impact, which is referred to in the South African legislation as “mitigation”.

6.13.4 Emergencies and Disasters

Situations of emergency are encountered in the study area where communities require immediate access to medical facilities. According to Indwedwe Municipality IDP for 2005/06, there are no hospitals in the area. Communities have access to clinics and households have an average travelling distance of 5-8 kilometres to the nearest public clinic. Communities require access to medical/health facilities during times of disasters or emergencies. This is usually brought about by natural and/or man-made factors. Natural factors include injuries sustained or potential injuries in the event of household fires. Snakebites and drowning constitute a few of the nature based emergency situations in respect of which communities require assistance. All these eventualities require services from an operational emergency facility, which has at its disposal the following equipment and capabilities:

(a) Ambulance services;

- (b) Fire fighting vehicles;
- (c) Medical skills;
- (d) equipment; and
- (e) Fire and other emergency skills

Disasters on the other hand are brought about by natural and manmade hazards. They differ from emergencies in that for them to be addressed, a specific group of stakeholders must be activated. This group must be able to mobilise a list of predetermined resources. For both the group and resources to be mobilised, there are specific requirements of legislation that must be met. The cardinal requirement is that a disaster must be declared in terms of present legislation (Disaster Management Framework Act, Act No. 57 of 2002). In short, the management of emergencies and the management of disasters should utilise similar resources. In fact, a local municipality cannot distinguish between emergency and disaster management equipment. The same equipment used for disasters (when disasters are declared) is used on a daily basis for emergencies. The incidence of emergencies is expected to be of a daily nature but of a much-reduced scale compared to that of a disaster.

6.13.5 Disaster Requirements

The study area has the following disaster management requirements:

- (a) Flooding

With regard to floods, the community in the study area require disaster preparedness interventions. These include the scientific determination of safe areas for the construction of houses. For this to be possible, the community must know flood-planes and the intervals of flooding in years.

Evacuation procedures including alternative land for shelter and other considerations must be determined at the onset (before disasters occur). In

addition, the mobilisation of resources in mitigation of flooding can be planned. In the current period all mitigation interventions occur on an ad hoc basis with the leadership of South African Police Services in conjunction with the South African National Defence Force.

(b) Fires

The study has shown disaster incidents associated with fires. All respondents however agree that there is no preparedness for this kind of eventuality. The requirements are of an infrastructural nature. These requirements include the construction of spinal and access roads. They include the re-design of human settlements to ensure that there is access to each and every household at least for emergency vehicles.

The community is aware of fire hazards presented during the harvest period of sugarcane plantations in the area. Migrant workers from northern KZN as well as from the Eastern Cape are accommodated in informal settlements in and around the sugarcane plantations. The electrification of compounds, low cost housing and the mushrooming informal settlements will reduce the risk of fires caused by candles and other forms of lighting and heating which are flame-based.

6.13.6 Disaster Management Requirements

The following are disaster management requirements in the study area;

6.13.6.1 Policy and planning

The study area has two distinct areas of governance. There is the local government area and the traditional leadership section. The two components are required by local communities to cooperate in disaster policy making and planning. Currently, communities are assisted by traditional leadership structures outside of a formal policy or planning procedure.

There is a planning process at the level of local government namely, the Integrated Development Planning. There is a general understanding that the Integrated Development Planning will incorporate the design of a disaster management plan. The disaster management plan is expected to cover policy issues. The planning process according to these findings must make provision for the identification of vulnerable communities. In addition, it must identify underlying factors, which must be taken into account in the determination of disasters.

A comprehensive consultation process is necessary in order to ensure that policy formulation and planning procedures take into account the comments and requirements of all stakeholders. The limitations with regard to the Municipal Structures Act are that the highest policy making body within local government is the Executive Committee of Council (EXCO). At this stage unfortunately, traditional leadership are not part of this structure. The requirements of the Integrated Development Planning process are that EXCO must endorse the final planning process. This however does not exclude a comprehensive consultation process, which must be embarked upon to ensure that disaster policy formulation, and planning is informed by contributions of all affected stakeholders including traditional structures.

The study area has shown that a majority of the women and the youth can be found in rural municipal areas. All efforts must be made to ensure the participation of rural women, in particular, in the formulation of disaster management policies and the design of disaster management plans. Municipal policies will require by-laws to lend effect to such policies. It is a requirement of a rural municipality therefore, to have in place the requisite capacities to pass by-laws in support of its disaster management policies.

6.13.6.2 Physical Infrastructure (Disaster management facilities)

A disaster management centre as defined by legislation is required in the study area. In the event that the district municipality has designed its own disaster management centre, the requirements on the ground are that a local facility is required. This facility must be able to respond to both the emergency and disaster requirements. With regard to emergencies, the facility should have the following physical infrastructure:

- Ambulances;
- Fire fighting vehicles;
- Anti-venom medication ; and
- Rescue equipment

With regard to the management of disasters, the disaster management centre must have (in addition to the above) the following:

- Water tanks (for drinking water in addition to water for fire fighting);
- Warehouses for the storage of tents, blankets and non-perishable foodstuffs;
- All weather on and off road vehicles; and
- Mobile clinic facilities

Both the emergency and disaster management facilities will only operate successfully if both the managerial and technical skills are in place. The list of skills includes emergency/rescue skills, medical skills, engineering skills, logistical support/administrative skills, planning and other operational skills.

6.13.6.3 Physical Infrastructure (Environmental)

The study area is rural in nature. The specific findings indicate a potentially disastrous situation exacerbated by generally poor physical infrastructure. The

distribution of roads has no relationship with the distribution of settlements in the area. The first requirement therefore is the alignment of the road planning process with settlement patterns. In areas where some formal roads are in place, it is possible to engage in a comprehensive road upgrade process. The backlog in the provision of roads and the upgrading of existing roads must be undertaken to ensure accessibility of all settlements.

It is noted that police facilities, which are used during incidents of disaster, are located outside of the study area. This exacerbates the impact of disasters given the time it takes to reach these facilities. The requirement is that this infrastructure (catered for in the Integrated Development Plan) must be aligned with disaster management planning. The absence of bridges and the provision of dangerous low-level bridges in some of the areas are other aspects of the physical infrastructure, which must be addressed in the disaster planning exercise.

The study did not cover the potential disasters from the commercial/industrial activities. The sugar industry, private dams and other physical infrastructure, which could be factors in future disasters have been identified as areas for further study. The assessment of the physical infrastructure must include both the public and private sector owned facilities.

6.13.6.4 Service delivery

The requirements of disaster management planning in the study area have to take into account the realities of service delivery. Access to water, electricity and sanitation remain the biggest challenges. Ethekwini Municipality, which is adjacent to the study area, has embarked on a major electrification campaign. Eskom is providing electricity in the study area. The pace of this exercise is affected negatively by the absence of road infrastructure. Settlements are also not planned and this slows down the speed of the electrification process.

The absence of water reticulation means that fire-fighting vehicles have to either bring their own water or rely on water in the rivers and streams. The absence of sanitation promotes the spread of diseases particularly cholera during floods and droughts.

6.13.6.5 Cost recovery

Majority of the people in the study area is dependant on grants. Local Economic Development is almost non-existent. There is a high incidence of indigent households. The municipality has not conducted an audit of its land and evaluate properties. Unfortunately households that can afford to pay rates are not doing so. It will be some time before a proper billing system can be in place. The challenge, therefore, is the development of a culture of paying for services received as well as an internal culture of collecting payments for services rendered. For both these cultures to be in place, the municipality is required to formulate a number of appropriate policies. In addition to these policies, the municipality is expected to pass by-laws, that will serve as a mechanism in ensuring policy enforcement.

6.13.6.6 Capacity

One of the major setbacks with regard to disaster management is the absence of the required capacity. There is provincial capacity, which can be activated in the event of certain levels of disasters. Internal capacity, however, requires the acquisition of equipment and skills. Buildings and fire-fighting equipment are examples of capital investment projects, which the municipality should undertake. In addition to this however, the municipality must attract the relevant skills.

6.14 Chapter Summary

The research methodology utilised adequately achieved the objective of the survey. It also highlighted the sampling employed, the description of the questionnaire and how it was administered. The questionnaire was analysed personally by the researcher. The presentation and analysis of results were described and interpreted against the background of the questions raised in Chapter one. It is noted that the research and study period coincided with the hosting of the KZN Disaster Management Summit in 2006. In addition, the research coincided with the flurry of articles in the wake of disasters such as the Tsunami and Hurricane Katrina. The interest in public health issues in general and in public health law in particular resulted in an increase in information exchanges. The insistence on the finalisation of disaster management plans by municipalities in KZN is one of the outcomes of increased focus on public health law issues and disasters during the time of the study.

The findings, arising from empirical evidence, have been contextualised within the broader framework of the study. The analyses of data under the relevant themes have given an integrated and holistic overview of the study as a whole. The analysis of the information was depicted in graphs. The feedback from the research methodology utilised, assisted in making recommendations as well as conclusions.

CHAPTER SEVEN

CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

The research sought to analyse the impact of disasters on public health, especially within the context of a rural municipality. From the research undertaken and the analyses of the data collected, the conclusions discussed below have been drawn.

7.2 CONCLUSIONS

7.2.1 The General Planning Context

According to this study, there are aspects of disaster management at local government level, which are covered in the Disaster Management Framework Act,²⁵¹. This study has however shown that disaster management is dealt with in the general context of development planning within municipalities in KZN. The study has also revealed that there are functional and operational relationships between disaster management planning and other general development planning processes.

The sequence of the planning process can be traced as follows:

²⁵¹ Disaster Management Framework Act, (Act No. 57 of 2002)

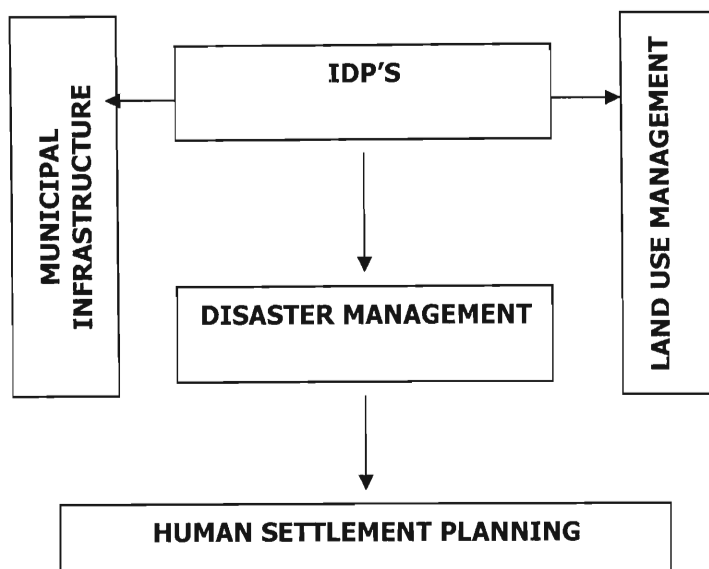


Figure: 7.1 Planning Process (2005/2006 Annual Performance Plan of KZN Municipal Infrastructure Chief Directorate).

The integrated nature of planning seek to ensure that all communities have a community safety plan defined by legislation as a disaster management plan. This community safety plan is only valuable in so far as it impacts on the safety of communities. For this reason, such a plan must align itself to the human settlement plan. The study has shown that the non-availability or lack of infrastructure is a major determining factor in disaster management planning. The Municipal Infrastructure Investment Planning is intended to be aligned with the disaster management planning exercise. It has also been established in this study that the distribution of settlements, the allocation of land for agricultural purposes and other land use decisions must be co-ordinated taking into account the need for the management of disasters.

7.3 Recommendations

7.3.1 The Analysis and Consultation Context

The Integrated Development Planning structures including the stakeholder forums and sector committees must be utilised for the analysis of disaster

requirements and overall disaster management consultation. The IDP process has covered the institutional arrangements and requirements exhaustively. This study adds that with regard to disasters and emergencies, stakeholders should include rural women and industrial actors involved in the area in the identification of disaster management requirements.

The situational analysis in the Integrated Development Planning process must include a comprehensive analysis of disaster propensities. This must be done thoroughly and critical areas must be highlighted. Where possible, the situational analysis must provide a review of the success and/or failures of the actions that were taken in the past. This analysis must include a list of all indigenous and locally developed responses and initiatives.

7.3.2 The Policy Environment

Appropriate local government policy should be in place for the management of disasters. At the core of these policies, there should be the intention to achieve equity with regard to access to disaster management facilities. The policies must also cater for the most vulnerable groups as well as the indigent. One of the major policy challenges is therefore, the recovery of costs for disaster management services provided. It means that policies must be developed to address property rates, billing and the development of systems to monitor the payment process. It remains a challenge to develop by-laws to ensure that policies are enforced.

7.3.3 Strategy Requirements

Various strategies must be put in place as part of the disaster management planning process. A strategy for emergencies as distinct from a strategy for disasters must be agreed upon. The emergency strategy will have to deliver on the shortest possible response time. The municipality will need to follow the requirements of medical and other practitioners with regard to applicable

response times for different types of emergencies. A good example that illustrates this point is with regard to snakebites, which create situations of emergency, which cannot be ratified if the emergency response is not within 60 minutes in respect of highly toxic venoms.

Strategy requirements with regard to disasters on the other hand, have to be designed in close alignment with the disaster declaration procedures set out in the legislation. This strategy must address all the activities, which must be finalised for disasters to be declared. In addition, it must provide a clear template with regard to resources within the municipality, which must be activated and deployed in times of disaster.

7.3.4 The Operational Context

The disaster management planning process must categorise the entire municipal area according to applicable emergency and disaster risks. Geographic information systems should be used to develop a presentation of risk areas with clarification of causal factors and background responsible for such risk. Once this is done, this information can be communicated to stakeholders in the area. The relevant implications of such categorisation can be discussed for the understanding of all concerned. One of the key indicators of this understanding should be the alignment of general plans and construction methods, which should differ from one risk area to the other.

7.3.5 Disaster Preparedness

A disaster preparedness checklist must be prepared in respect of each risk category. This may include the requirements of environmental impact assessments, the pre identification of shelters for evacuation purposes and the training of communities. Preparedness will include the monitoring of environmental changes and climatic conditions. This will also take into account people-movement activities as well as population growths.

7.3.6 Management and Administration

Disaster management must be part of the development planning of the municipality. This is a deviation from community services/technical services approach of the past. What has emerged from the study is that disaster management is very much a part of development planning. The recommended structure is therefore as follows:

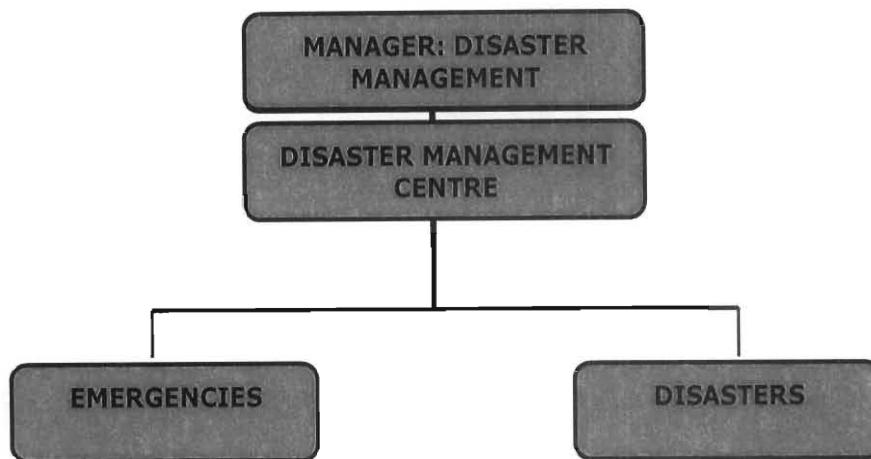


Figure 7.2: Organisational establishment (KZN Provincial Disaster Management Centre Establishment Plan 2005).

7.3.7 The Financial Context

The study has highlighted that rural communities in the main are indigent. The study has also shown that rural communities are making payments to traditional leadership structures. It is important that local government (municipalities) must take the initiative to consolidate traditional governance into mainstream local governance. Once this is done, payments must be consolidated to encourage the making of payment for services delivered to one (common) local government. This is critical to the successful implementation of the Municipal Property Rates Act. This is also critical to the success of disaster management planning.

With regard to disaster management infrastructure, it is essential that the municipal infrastructure investment planning exercise must be expedited and it must prioritise disaster management infrastructure to be funded by MIG. Where

such infrastructure falls outside of the MIG funding mechanism, alternative capital funding must be identified and sourced.

7.3.8 RECOMMENDED RURAL MUNICIPALITY DISASTER MANAGEMENT PLAN

The rural municipality disaster management planning exercise is recommended as follows:

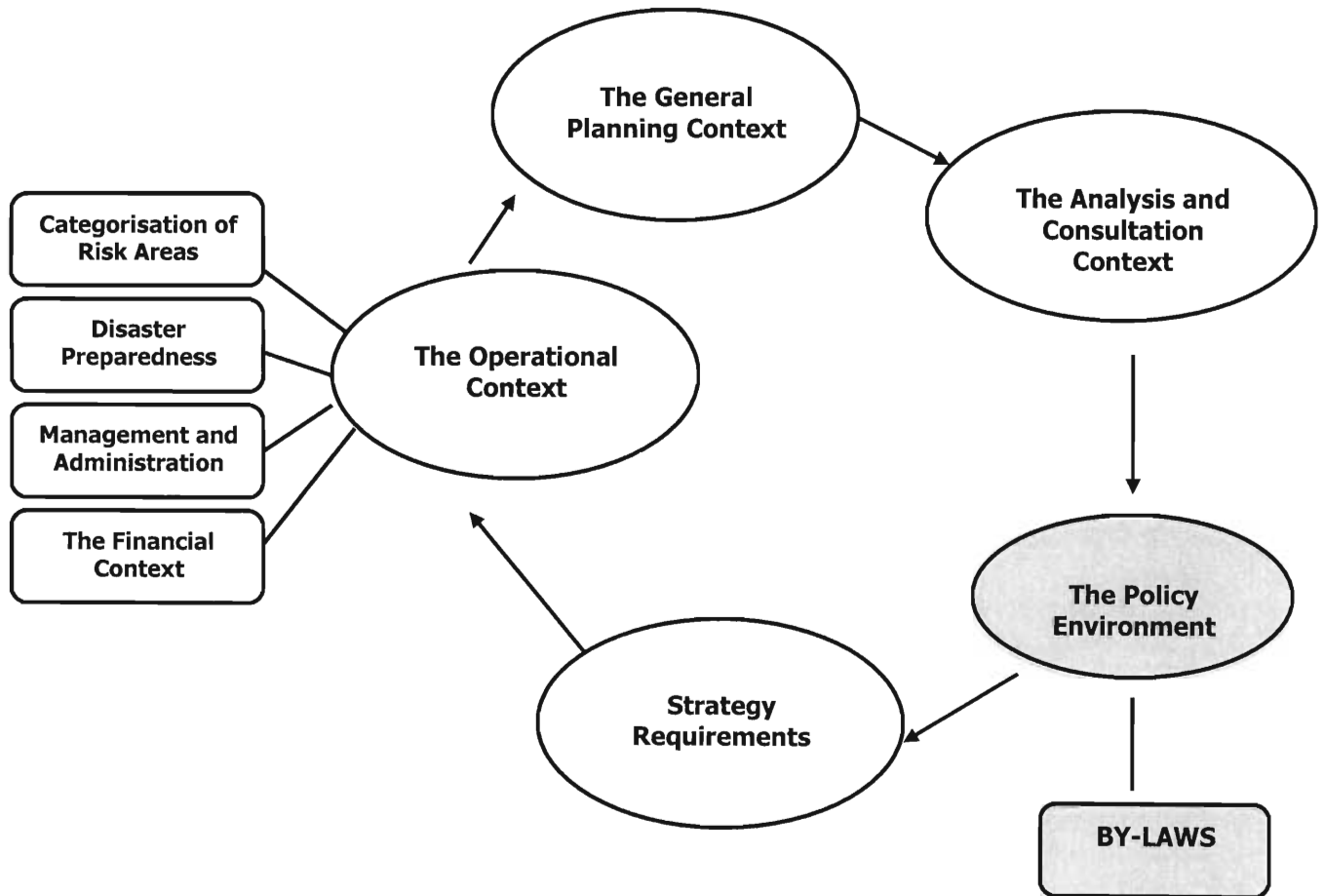


Figure 7.3: Recommended Rural Municipality Disaster Management Plan (KZN Disaster Management Summit, 25-26 May 2006).

7.3.9 Recommended Milestones in the Municipal Disaster Management Planning Process

| Activities | Milestones |
|---|--|
| <ul style="list-style-type: none"> - Consultation - Awareness Campaign - Identification of stakeholders within the IDP forums and committees | 1. Development of a common disaster management vision |
| <ul style="list-style-type: none"> - Assessment of disaster management needs - Categorisation of different risk situations - Establishment of cost recovery requirements | 2. Disaster management policy |
| <ul style="list-style-type: none"> - Analysis of enforcement requirements - Drafting of by-laws | 3. Enforcement strategy |
| <ul style="list-style-type: none"> - Identify infrastructural requirements - Costing of infrastructural requirements - Incorporation of costs into MIIP | 4. Disaster management capital projects |
| <ul style="list-style-type: none"> - Prepare MIIP for submission to MIG - Establish local MIG PMU | 5. Securing of funding for disaster management infrastructure |
| <ul style="list-style-type: none"> - Establish emergency procedures - Establish disaster declaration protocols | 6. Disaster management strategy in respect of each risk category |
| <ul style="list-style-type: none"> - Establish disaster institutions and committees in terms of the Act - Set up institutional mobilisation systems and procedures - Design and publish communication protocols - Publicise important stakeholder contact details | 7. Disaster mitigation procedures |

Table: 7.4.1 Milestones in the Disaster Management Planning Process (KZN Disaster Management Summit, 25-26 May 2006)

7.3.10 Phases of the planning process

In addition to phase 1 activities covered above, the disaster planning exercise must include a secondary level that entails the following sections:

7.3.11 Activation of Disaster Management Plan

This section must deal with all protocols and procedures to be followed and observed in the activation of the plan. With regard to disasters, the triggering effect must take into account the legal stipulations in the declaration of disasters.

7.3.12 Preliminary Activities: Assessment of Community Disaster Probabilities

This section must cover all preliminary feasibility studies and investigations, which include the assessment of vulnerability levels of the different sections of the community.

7.3.13 Disaster Scenarios

In the main, this includes the simulation of disasters. It is the mathematical projection of various scenarios showing the likely numbers of casualties, numbers of shelters and sizes required and projections of mitigating factors.

7.3.14 Relationships with other Levels of Government

This being a municipal disaster management plan, it must be clear on intergovernmental relations. This section must deal with the participation of the private sector, traditional government, local government, provincial and national government.

7.3.15 Authority and organisation

This section must focus on the vesting of powers and functions during and immediately after the disaster. There must be no ambiguity with regard to the source of instructions to either the military or SAPS or humanitarian forces involved in a disaster situation.

7.3.16 Publication of stakeholder contact details

To ensure smooth mobilisation, this section must deal with the institutional arrangements, which will be obtained during the disaster. All members of such institutional arrangements must be known beforehand and their contact details must be publicised.

7.3.17 Operation of Warning Systems

With regard to disasters that are determined before impact, this section is compulsory. It covers all protocols relating to the warning systems. It sets out how the systems must be developed and maintained. Most importantly, it covers the protocols of the different levels of management, which have the authority to operate such warning systems.

7.3.18 Pre-impact Preparations

Where incidents like flooding can be pre-detected, this section must be included to set out all procedures and activities to be executed before the impact. By definition therefore, this section must include timeframes in respect of each pre-impact preparation.

7.3.19 Emergency evacuation

This section must contain a map showing the routes to be followed during the evacuation. It must also indicate the spread of safe areas and their allocated volumes. It must also include a record of ongoing maintenance of evacuation centres. The section also contains institutions and places, which are likely to be used in the emergency evacuation process.

7.3.20 Shelters

This section of the plan is also a map indicating available shelters. It categorises shelters according to the various emergency requirements. Shelters from a war situation will have different characteristics as opposed to shelters from a flooding situation where there is no threat of attack after the victims have been evacuated.

7.3.21 Disaster Control and Sub centres

It is the important section of the plan. It sets out the disaster management nerve centre. It shows who will coordinate as well as the communication methodology. It looks at equipment for communication especially in instances where the disaster situation has led to the disruption of telecommunications.

7.4 CONCLUDING REMARKS

The Ndwedwe Local Municipality covers a rural area that was previously excluded from the emergency and disaster management facilities offered by the City of Durban before 1994. The municipal ward structure system operates alongside the tribal ward system in the area. The study has shown that the local community considers itself as tribal wards. The recommended disaster management centre model has taken into account the reality that the alignment of the two ward systems may not be achieved.

The accuracy of findings and recommendations on the model has been enhanced by the passing of the KwaZulu-Natal Traditional Leadership and Governance Act²⁵², (Act No. 5 of 2005). This legislation provides for synergistic partnerships between traditional leadership and municipal structures. Traditional Councils have been established in all the traditional wards (Tribal Wards) in the province. It is therefore expected that the recommended model will be successfully implemented as a result of co-operation between the municipal and tribal ward structures. The eThekweni Municipal Council and the eThekweni Local House of Traditional Leaders are expected to play a leading role in ensuring that rural communities in the municipal area are assisted to have access to facilities in terms of the general requirements of public health law. The implementation of the model supported by this study will enrich the partnership between the two structures (Municipal and Traditional).

²⁵² KwaZulu-Natal Traditional Leadership and Governance Act (Act No. 5 of 2005)

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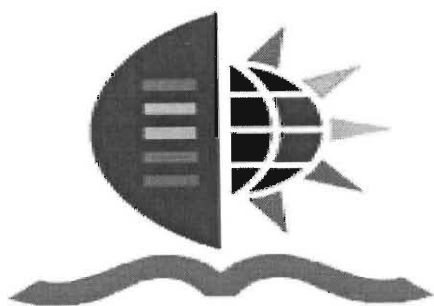
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QUESTIONNAIRE: TO COMMUNITY OF INDWEDWE

TITLE: THE IMPACT OF DISASTERS ON PUBLIC HEALTH: AN INVESTIGATION OF DISASTER MANAGEMT IN THE RURAL MUNICIPALITY OF NDWEDWE

Dear Sir/ Madam

Rural communities of KwaZulu-Natal are exposed to continuous natural and other threats and some live in underserved and ecologically fragile areas. The disaster vulnerability of communities is exacerbated by the lack of basic services such as health, education, water and sanitation. Rural communities endure the highest and worst service backlogs.

The Constitution states that local government is a sphere of government in its own right. This implies that the local government has a legal mandate and obligation to provide all people living within its area of jurisdiction with basic services. In the urban areas and rural towns, vulnerable communities are exposed to the threats of informal settlements, fires and floods. Rural municipalities in the province are working hard to meet the Presidential Service Delivery Target. All citizens must have access to water, sanitation and electricity. However, lack of access to basic services continues to increase the vulnerability of rural communities and impacts negatively on their health.

Disasters have shown that they can cause injury, death and destruction of infrastructure. KwaZulu- Natal is characterized by coastline which exposes the province to numerous

Aim: The questionnaire is part of a data-gathering tool aimed at investigating and recommending an appropriate municipal disaster management intervention(s) within the context of disaster management framework and public health.

NB. The investigation is carried in part fulfillment of the academic requirement for the Master's programme in Public Health Law. University of Kwa Zulu- Natal.

INSTRUCTIONS FOR THE COMPLETION OF THIS QUESTIONNAIRE

Please complete the following questionnaire by crossing (x) on an appropriate answer or provide full sentences by a way of response where it has been indicated. You have a right to remain anonymous and all data received and processed will be treated with strict confidentiality.

Your co-operation is greatly appreciated.

Thank You.

G. H. Sikhakhane (Masters Student)

Student no. 200301693

0721525178

Academic Supervisor

Dr. P. Pillay

031- 260 7059

Director

Prof. Y. Vawda

031-260 7860

SECTION A: DEMOGRAPHIC DETAILS

PLEASE COMPLETE THE FOLLOWING DETAILS

1. Gender:

| | |
|--------|----|
| Male | 01 |
| Female | 02 |

2. Marital Status:

| | |
|----------|----|
| Single | 01 |
| Married | 02 |
| Divorced | 03 |
| Widowed | 04 |

3. Age (in years)

| | |
|---------|----|
| 20-29 | 01 |
| 30-39 | 02 |
| 40-49 | 03 |
| 50-59 | 04 |
| 60-69 | 05 |
| Over 70 | 06 |

4. Level of Education

| | |
|---------------------|----|
| No Formal Education | 01 |
| Primary Education | 02 |
| Secondary Education | 03 |
| Tertiary Education | 04 |

5. Income Level

| | |
|----------------|----|
| R 0-R 1000 | 01 |
| R 1001-R 2000 | 02 |
| R 2001- R 3000 | 03 |
| R 3001- R 4000 | 04 |
| Over R5000 | 05 |

6. Number of children in a household

7. Other dependants

SECTION B:

This section is aimed at the conceptual understanding of the term “disaster”.

1. What do you understand by the term “disaster”?

2. What type of disasters have people experienced in your area? (You may tick more than one category).

| | |
|------------|----|
| Drought | 01 |
| Flood | 02 |
| Storm | 03 |
| Wind | 04 |
| Fire | 05 |
| Violence | 06 |
| Mud Slide | 07 |
| Earthquake | 08 |
| Other | 09 |

3. How were you affected?

SECTION C: Payment for Services

This section is intended to establish cost recovery and indigent policy aspects in a rural municipality.

1. Do you pay for any of the following services?

| | | | | |
|---------------------|-----|----|----|----|
| Water | Yes | 01 | No | 02 |
| Solid Waste Removal | Yes | 01 | No | 02 |
| Electricity | Yes | 01 | No | 02 |
| Rates | Yes | 01 | No | 02 |

2. Which services are unaffordable? (Give reasons).

SECTION D: This section intends to assess the impact of inclusion of the rural municipality within the established disaster management facilities of the area.

1. Which disaster management facility is responsible for your area?

2. Rate the performance of the disaster management facility in your area in the last disaster.

| | |
|-----------|----|
| Excellent | 01 |
| Good | 02 |
| Bad | 03 |
| Poor | 04 |

3. What infrastructural problems were experienced in your area in this time?

| | |
|--------------------------|----|
| No Water Provision | 01 |
| No Telephone Network | 02 |
| No Road Access | 03 |
| No Electrical Connection | 04 |
| Other | 05 |

SECTION E: INFRASTRUCTURE AND SERVICE DELIVERY

This section seeks to determine the role of infrastructure and service delivery in disaster management.

1. How have you contributed to the local Integrated Development Plan?

2. In your opinion, how did the municipality manage the disasters that have been experienced in your area?

SECTION F: INSTITUTIONAL ARRANGEMENTS

This section analyses the role of stakeholders in assisting municipalities in managing disasters.

1. Provide a list of threats to health and safety, as a result of the last disaster

| Disaster | Public Health Threat |
|--------------------|------------------------------|
| E.g. (1987 floods) | E.g. (1987 Cholera Outbreak) |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

2. Provide a list of government and non government organizations which played a key role in the above mentioned disasters,

SECTION G: PLANNING POLICY ALIGNMENT

This section is intended to establish the alignment between local government planning, public health law as well as disaster management planning.

1. What skills should drive your local disaster management plan? (You may tick more than one).

| | |
|--------------------|----|
| Health | 01 |
| Engineering | 02 |
| Defense (National) | 03 |
| Administrative | 04 |
| Managerial | 05 |
| Other | 06 |

2. At what stage must the public health law experts be involved?

| | |
|-----------------|----|
| Planning | 01 |
| During Disaster | 02 |
| Post-Disaster | 03 |
| Throughout | 04 |
| Other | 05 |

3. A disaster management plan can be approved without public health law input.

| | |
|-------------------|----|
| Strongly Agree | 01 |
| Agree | 02 |
| Neither | 03 |
| Disagree | 04 |
| Strongly Disagree | 05 |

4. What suggestions can you propose for the local disaster management plan to be more effective and efficient?

5. Any additional comments:

Thank you for your time and effort.