FRANCES BAARD DISTRICT MUNICIPALITY

DISASTER MANAGEMENT PLAN

April 2006

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ABBREVIATIONS

DDMAF	District Disaster Management Advisory Forum
DDMC	District Disaster Management Centre
DIDMC	District Inter-departmental Disaster Management Committee
DMC	Disaster Management Centre
DMF	Disaster Management Framework
DMP	Disaster Management Plan
FBDM	Frances Baard District Municipality
HOC	Head of the Disaster Management Centre
IDP	Integrated Development Process
KPA	Key Performance Area
LIDMC	Local Inter-departmental Disaster Management Committee
MDMAC / F	Municipal Disaster Management Advisory Committee / Forum
SOP	Standing Operating Procedure

1. Introduction

FBDM appointed Watees Consulting PTY Ltd to compile a Disaster Management Plan. As a point of departure, all potential hazards were identified at local municipal level, using indigenous knowledge. After this, all information was transferred to GIS maps to execute a disaster hazard, vulnerability and risk assessment for FBDM. Using GIS-techniques, it was possible to identify communities and infrastructure at risk in the FBDM area of jurisdiction. All the potential hazards were then prioritised to guide FBDM in the implementation of risk reduction strategies.

Apart of the disaster risk assessment, a disaster management framework and appropriate disaster management response plans (consisting, *inter alia* of Standing Operating Procedures (SOP's), checklists, resource database, media liaison and a trauma management plan) were compiled,.

The main purpose of this document is therefore to summarise all detail findings of the above-mentioned reports. Hence, an overview of all requirements of the Disaster Management Act will first be given, followed by a summary of the results from the disaster management framework and disaster risk assessment reports. Also included is a disaster management action plan which was compiled (Appendix C) to guide the Disaster Management Component of FBDM in the implementation of this disaster management plan.

2. Disaster Management Legislation

The following reflects a summary of those aspects that must be undertaken by municipal entities.

- **Section 42**: They **must** establish and implement a framework that will ensure an integrated and standardized approach by all undertakings (NGO's; private sector, and municipalities). **Districts** must discuss their frameworks with local municipalities before finalization and the final product must address the relevant aspects of the Act and be in line with the national framework and that of the relevant province.

  The DMC may act as an advisory body for all undertakings within the municipal area on issues pertaining to disaster management. It may promote disaster management research as relevant to the municipal area.

- **Section 43:** Each metro and district must establish a disaster management centre (DMC). The district must consult with its local municipalities before the DMC is established. (The DMC at district level may be operated in partnership with local municipalities)

- **Section 44:** Powers and duties: ADMC **Must**:
  - specialize in issues concerning disaster management;
  - promote an integrated and coordinated approach between all role players (with emphasis on prevention and mitigation);
  - make recommendations on the funding of the function;
  - be able to provide information on disasters and disaster management issues;
  - promote the recruitment of volunteers as well as their training and utilization;
  - promote capacity building, training and education within the municipal area;
  - perform its powers and duties in terms of the IDP for the municipality and within the necessary adopted frameworks;
  - **Must** liaise and coordinate its activities with the national DMC and the relevant provincial DMC;
  - **Must** perform duties delegated to it by the national DMC.

- **Section 45:** Municipalities must appoint someone to head the DMC in accordance with the applicable provisions reflected in the Municipal Systems Act.

- **Section 46**: The DMC must assist the national DMC and relevant provincial Centre with the development and maintenance of an electronic database capable of providing disaster management information (for the area of jurisdiction) on disasters; risk factors; reduction of risks strategies; prevention and mitigation; vulnerable areas; early warning systems; any indigenous knowledge on disaster management; directory of role players; emergency response resources and level of emergency preparedness. (refer section 17).

The DMC **must** also report any failures to comply with the supply of information as requested by any municipal organ of state, to the executive mayor or mayor.

It may request any municipal organ of state for information to assist the national or provincial DMC in obtaining essential information.

- **Section 47:** The DMC m**ust** be able to give guidance (to the extent that it has the capacity) to all undertakings within its municipal area, on matters pertaining to prevention and mitigation.

  It **must** also promote formal and informal initiatives that encourage risk-avoidance behaviour amongst all role players.

- **Section 48:** The DMC **must** monitor the preparation and implementation of disaster management plans (in terms of sections 52 and 53). It **must** also monitor compliance with key performance indicators in terms of IDP planning and **must** measure performance and evaluate progress at regular intervals.

- **Section 49:** The DMC **must** determine whether any adverse event could be classified as a disaster.

  It may recommend the classification of an event as an appropriate disaster, if the national or provincial DMC has been informed of the incident.

- **Section 50**: The DMC **must** submit an annual report to its municipal council and the national and provincial DMC's (Copies of district reports **must** be forwarded to each local municipality).

- **Section 51** Municipalities may establish a municipal disaster management advisory forum with details on whom may be part of such a forum. Also the purpose of such a forum is given.

- **Section 52:** **Powers and duties of municipalities.**
  - Each municipal entity must prepare disaster management plans, which must be coordinated between role players and regularly reviewed/updated. Such plans must be submitted to all higher authorities. Failure to do so must be reported to the relevant mayor.
  - Section 53: This covers those aspects with which plans must comply with and the plans must consist of.

3. Disaster Management Plan for FBDM

The main purpose of the Disaster Management Plan (DMP) is *inter alia* to implement appropriate disaster risk reduction measures to reduce the vulnerability of communities and infrastructure at risk. The DMP is in line with national policy (National Disaster Management Framework), which requires the following:

- The compilation of a Disaster Management Framework (policy).
- The execution of a detailed disaster hazard, vulnerability and risk assessment.
- The compilation of disaster risk reduction measures.
- The compilation of appropriate Standing Operating Procedures (SOP's).
- Establishment of a District Disaster Management Centre (DDMC).
- Establishment of a Disaster Management Advisory Forum.
- Capacity Building, training and awareness programmes.

Hence, to accommodate the above-mentioned requirements, the DMP for Frances Baard District Municipality (FBDM) comprises various plans, namely;

- District Disaster Management Framework (policy).
- Disaster Hazard, Vulnerability and Risk Plan.
- Disaster Risk Reduction Plan.
- Disaster Response and Recovery Plan (SOP's and checklists).
- District Disaster Management Centre Plan.
- Guidelines to establish the Disaster Management Advisory Forum and Volunteer Contingent.

4. Disaster Management Framework (Policy) for FBDM

The Disaster Management Framework (DMF) is a **strategic policy** document and guides all spheres of government in the implementation of the disaster management act. Hence, the DMF of FBDM guides all local municipalities in FBDM area of jurisdiction in the implementation of disaster management. To be in line with the National Disaster Management Framework, the DMF of FBDM proposed five Key Performance Areas (KPA's), namely;

- Institutional Capacity Building for Disaster Management.
- Pre-Disaster Risk Reduction.
- Post-Disaster Recovery.
- Public Awareness, Education, Training and Research.
- Monitoring, Evaluation and Improvement.

Vision of Disaster Management for FBDM

A peaceful environment to ensure and enhance sustainable development in the Frances Baard District Municipal area of jurisdiction.

Mission of Disaster Management for FBDM

An integrated, holistic and cost effective approach in disaster management to reduce the risk of any possible disaster.

Proposed Objectives for each KPA

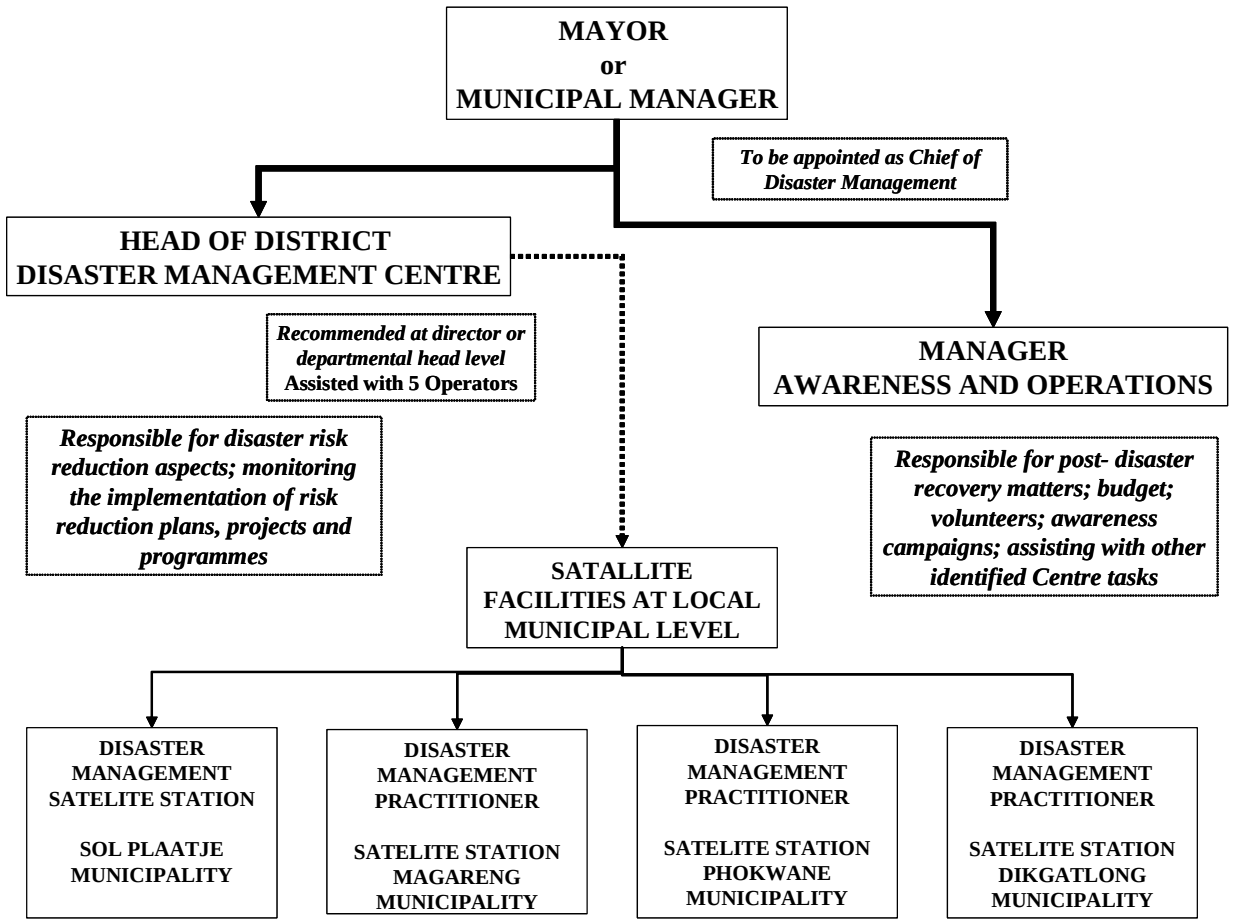
KPA	Objective
KPA I: Institutional Capacity Building for Disaster Management	**Objective 1:** To establish effective institutional arrangements (the disaster management structure and organisation) for the development and approval of an integrated disaster management policy. **Objective 2:** To set out the mechanisms for the funding of disaster management. **Objective 3:** To develop a district strategic disaster management implementation plan to implement the Disaster Management Act. **Objective 4:** To establish and maintain a District Disaster Management Centre (DDMC) for FBDM. **Objective 5:** To establish a Disaster Management Advisory Forums. **Objective 6:** To establish, train and maintain a Disaster Volunteer Contingent. **Objective 7:** To compile appropriate Mutual Assistance Agreements between all identified role players. **Objective 8:** To develop a comprehensive Disaster Management Information System (DMIS). **Objective 9:** To develop and establish integrated (horisontal and vertical) communication links with all disaster management role players in national, provincial and municipal spheres of government.

KPA II: Pre-Disaster Risk Reduction	**Objective 1:** To identify all potential hazards and threats by inter alia using indigenous knowledge. **Objective 2:** To execute a hazard assessment to compile a disaster hazard profile map for the FBDM area of jurisdiction. **Objective 3:** To execute a vulnerability assessment, using GIS analysis to identify communities, property and infrastructure at risk. **Objective 4:** To execute a risk assessment to compile a disaster risk profile for the FBDM area of jurisdiction **Objective 5:** To align the disaster management plan with the spatial development plan and with the IDP. **Objective 6:** To compile appropriate risk reduction strategies for each identified hazard. **Objectives 7:** To link each risk reduction strategy with Key Performance Areas of Line Functionaries to ensure effective and efficient implementation of risk reduction strategies. **Objectives 8:** To formulate appropriate development policy to ensure sustainable development in future.

KPA III: Post-Disaster Recovery	**Objectives 1:** To develop effective and efficient response and recovery plans (SOP's and contingency plans) for all identified hazards and risks. **Objectives 2:** To avert or reduce the potential impact in respect of health impacts, personal injury, loss of life, property, infrastructure or environment. **Objectives 3:** To ensure that relief operations following significant events are coordinated and equitably distributed. **Objectives 4:** To ensure that all rehabilitation and reconstruction strategies conducted following a disaster are implemented in a developmental manner.
KPA IV: Public Awareness, Education, Training and Research	**Objectives 1:** To disseminate Disaster Management information to communities at risk, to the public and other identified role players after the execution of a hazard, vulnerability and risk assessment. **Objectives 2:** To continuously execute public awareness campaigns to promote a culture of risk avoidance among stakeholders. **Objectives 3:** To ensure positive media coverage and publicity to increase public awareness and understanding of disaster management. **Objectives 4:** To develop appropriate educational and training programmes for disaster management to be implemented into regular training programmes. **Objectives 5:** To create applied knowledge through disaster management research programmes.

KPA V: Monitoring, Evaluation and Improvement	**<u>Objectives 1:</u>** Performance audits, self-assessments and peer reviews. **<u>Objectives 2:</u>** Mechanisms required for monitoring incidents and significant events, disaster review and reporting. **<u>Objectives 3:</u>** Guidelines for rehearsals, simulations, exercises and drills to evaluate the effectiveness of disaster management planning. **<u>Objectives 4:</u>** Highlights the resources required for effective monitoring, evaluation and improvements.

Disaster Management Structure for FBDM



Section 43 (1) of the Disaster Management Act (Act 57 of 2002) stipulates that each District must establish a disaster management centre. The centre must be established in consultations with the local municipalities in the FBDM area of jurisdiction.

This process will take place in consultation with the following local municipalities:

- Sol Plaatje
- Magareng
- Phokwane and
- Dikgatlong

It is recommended that various Satellite Disaster Management Centres will be established within FBDM area of jurisdiction. This will be done at each local municipality.

The satellite stations will be manned by persons who will be appointed by the Frances Baard District Municipality.

1. PLACING OF THE DISASTER MANAGEMENT FUNCTION

The function must be placed in the office of the Executive Mayors or the Municipal Manager. This will actually fast track the decision making process if the need arises during emergencies.

*NB!: For FBDM it may be the best option to have the function (Disaster Management) in the **Municipal Managers Office** as most of the Activities will be of an administrative nature, but reports of all disaster management activities need to be submitted the MAYORAL COMMITTEE. Disaster Management must be involved with all developmental issues, especially with the IDP,S.*

2. HEAD OF THE DISASTER MANAGEMENT CENTRE

The Head of the District Disaster Management Centre (HOC) must be appointed in accordance of the Act, Section (45) 1. The HOC must exercise the following powers and duties, amongst others;

- Within the duties of the National Disaster Management Framework (NDMF), the Provincial Disaster management Framework (PDMF) and the District Disaster Management Framework (DDMF);
- Subject to the Municipal Integrated Development Plan and other directions by Council and,
- In accordance with the administrative functions of the Municipal Manager.
- The Management activities of the District Disaster Management Centre must be in accordance with the powers and functions as stipulated in the Act.
- The HOC will also be mainly responsable for disaster risk reduction aspects; monitoring the implementation of risk reduction plans, projects and programmes.

3. MANAGER: AWARENESS AND OPERATIONS

The Manager Awareness and Operations will mainly be responsible for;

- Post disaster recovery matters,
- Budgeting
- Establishment, training and recruitment of disaster management volunteers (for both proactive and reactive matters)
- Awareness campaigns
- Any other task and assistance with the District Disaster Management Centre.

These responsibilities will be done in collaboration with the Disaster Management Practitioners at each local municipalities.

4. DISTRICT DISASTER MANAGEMENT CENTRE (DDMC)

The personnel in the DDMC will be responsible for the functions as spelt out in Section 44 and 46 as per the Act.

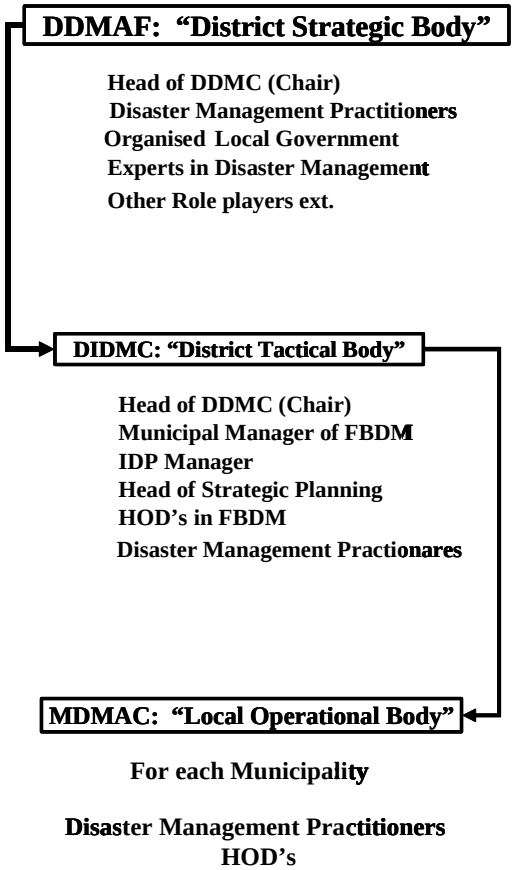
Assistance must also be given to Satellite Disaster Management Centres in terms of the implementation of risk reduction strategies.

5. DISASTER MANAGEMENT PRACTITIONERS- SATELITE CENTRES

As the DDMC is responsible for Disaster Management in its area of jurisdiction, it is important to have Disaster Management Practitioners on the payroll of the FBDM. This will ensure the effective and efficient operation of all disaster management responsibilities within the local municipalities and therefore assist the local municipalities to implement the function according to the requirement of the Act.

The Disaster Management Practitioners will work closely in collaboration with the Awareness and Operation Manager to ensure continuous involvement within disaster management.

Disaster Management Organisation for FBDM



The main aim of the DDMAF is to decide on strategic disaster management decisions, e.g. compile and approve disaster management framework, facilitate the execution of hazard and risk assessments and approval of disaster management organisations and structures in FBDM.

The DDMAF must consist of;

- the Head of the District Disaster Management Centre (DDMC);
- representatives from each of the district departments;
- representatives of organised local government;
- other role players, such as;
  - the South African Police Service
  - the South African National Defence Force
  - the South African National Weather Service
  - the insurance industry
  - business chambers
  - organised agriculture
  - traditional leaders
  - religious and welfare organisations,
  - medical, paramedical and hospital organisations and
  - NGO's

- Co-opt role-players;
  - representatives from the District Disaster Management Centre
  - representatives from the Provincial Disaster Management Centre
  - the Head of the DMC at each Local Municipality
  - organisations representing disaster management professions in South Africa
  - institutions of higher education and research
  - international organisations
  - statutory bodies regulating safety standards in particular industries.
  - Institutions that can provide scientific and technological advice or support to municipal disaster management, and
  - experts in the field of disaster management.

DIDMC

The DIDMC is of a tactical nature and aims to bring together all line functionaries at District level to decide on risk reduction and post disaster recovery strategies. The DIDMC must consist of;

- the Head of the DDMC
- the Mayor and/or Municipal Manager of FBDM
- all Municipal Managers
- all IDP Manager
- all Head of Departments within FBDM

MDMAC

The MDMAC is an operational body and aims to implement risk reduction and post disaster recovery strategies at local government level and has to be established for;

- FBDM including three local municipalities:
  - Magareng Local Municipality
  - Phokwane Local Municipality
  - Dikgatlong Local Municipality
- Sol Plaatje Local Municipality

The MDMAC must consist of;

- HOC
- Disaster Management Practitioners
- HOD's

5. Disaster Hazard, Vulnerability and Risk Plan for FBDM

Using indigenous knowledge, it was possible to identify all potential hazards in FBDM area of jurisdiction. The following table summarise all identified hazards.

Table 1: Identified hazard for FBDM, 2006.

Extreme Weather Conditions
Heavy Rain
High Winds
Snow storms
Tornado
Floods
Drought
Sink holes
Veld fires
Disease
Epidemics
Pollution (Air and Water)
Environmental degradation
Power Plants
Fuel depots
Large Industry
Bridges
Dams
Gas & Electricity
Mines
Sewerage Works
Transportation and storage of HAZMAT

Prioritising of hazard for FBDM

It was possible to prioritise all identified hazards and risk for FBDM during the risk assessment analysis. The worst-case scenario for all identified hazards was used to execute the risk assessment. The following results were obtained;

Table 2: Prioritising of potential hazards and risks in FBDM, 2006.

	Hazard	Total
1	Poverty	245
2	Drought	200
3	Epidemics / Disease	185
4	Fire	180
5	Pollution - Water	160
6	Floods	145
7	Aircraft Accidents	140
8	Hazardous Materials	137
9	Road Accidents	110
10	Dam Failure	109
11	Pollution - Air	100
12	Lightning	100
13	Erosion	97
14	Environmental Degradation	85
15	Geological Hazard	57

Notwithstanding the fact that poverty is not a hazard, it is worthwhile to be mentioned. When a threshold value is linked to poverty, it is clear from the above table that poverty received the highest score. Hence, the alleviation of poverty is the highest priority, above all identified hazards, as this should also have a positive impact on the aspects listed above. FBDM therefore has to reallocate its resources to eliminate poverty related issues above all other identified matters.

Drought, epidemic / disease and veld fires in FBDM received a very high threshold value, making this event the most severe hazard for FBDM. It is highly recommended that FBDM formulates appropriate epidemic and disease prevention and mitigation strategies for all stakeholders in its area of jurisdiction in order to decrease the vulnerability of communities.

Water pollution, floods, aircraft accidents and hazmat follows with threshold values between 137 and 160. Appropriate risk reduction strategies are required to decrease the vulnerability of communities at risk.

The following hazards received a threshold value between 100 and 110;

- Road Accidents
- Dam Failure
- Pollution - Air
- Lightning

It is deemed necessary to formulate appropriate SOP's and contingency plans for these hazards, which can be activated during an event to enable all Emergency Departments to react timely during such an event. The following hazard received a threshold value less than 100, indicating a low priority. However this does not mean that disaster management do not have any responsibility in managing these risks, but rather indicate a low priority to implement appropriate risk reduction strategies.

- Erosion
- Environmental Degradation
- Geological Hazard

It is possible to graphically display the information in Table 2 (Figure 1). Figure 1 gives the IDP an indication of how much to spend on prevention and mitigation strategies.

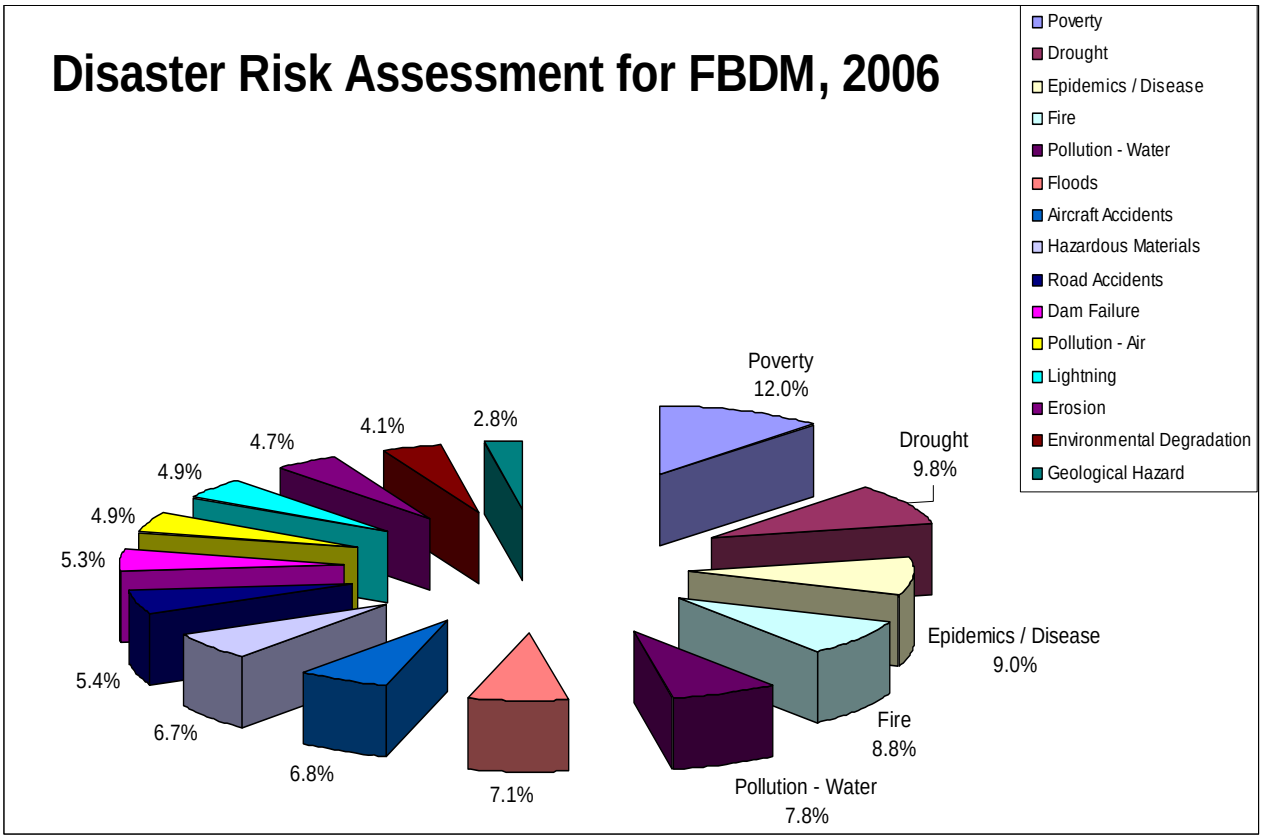


Figure 1: Percentage of total capital budget to be spent on prevention and mitigation strategies.

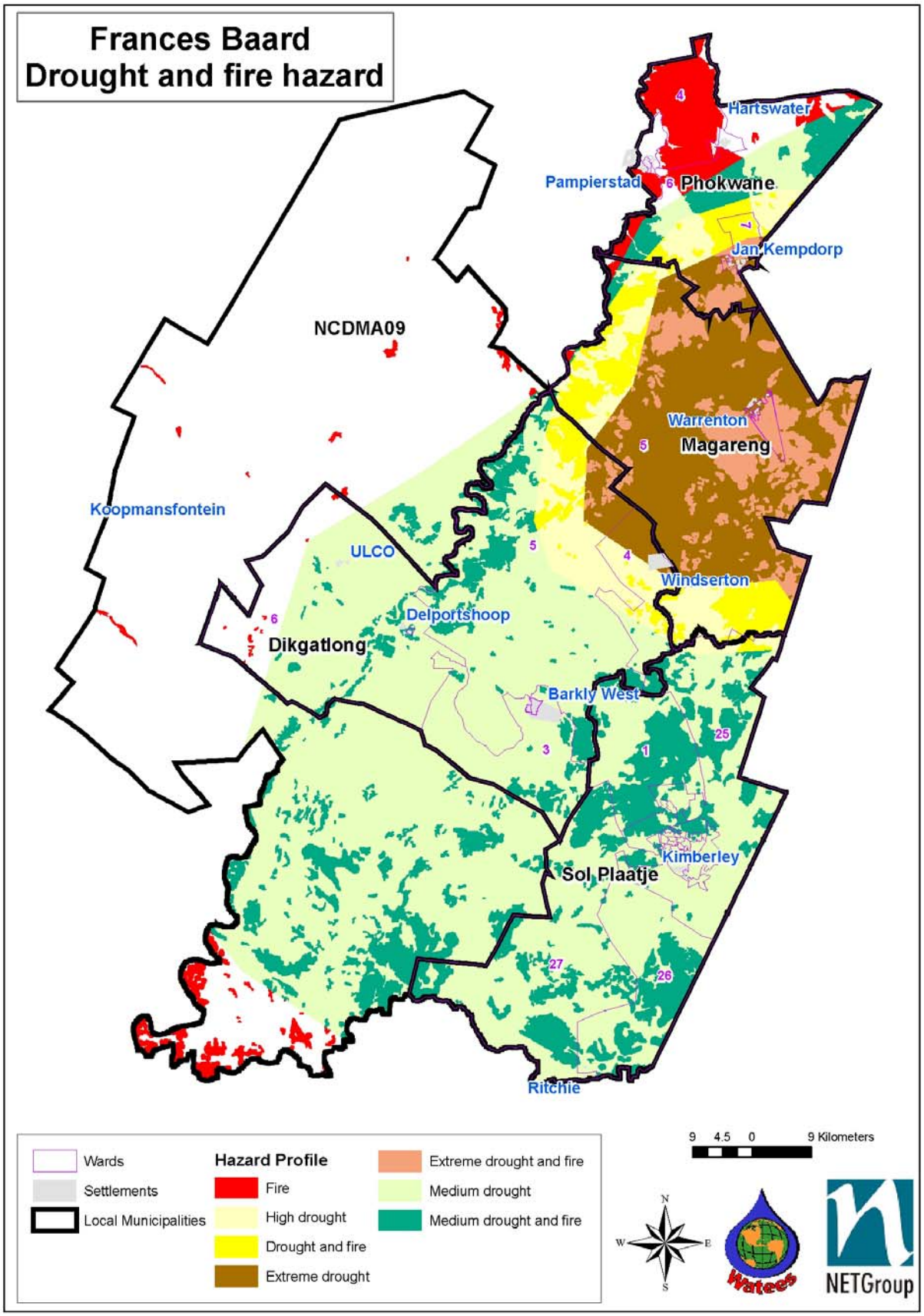
Twelve per cent of the total budget may be spent on poverty alleviation programmes. Twenty five per cent (8% to 9% on each) can be spent on drought, epidemic, veld fire and water pollution relief measures. This is only a first round indication to guide the IDP in the allocation of funds to line departments, for this purpose.

Hazard Profile of FBDM

Using the detail disaster hazard, vulnerability and risk assessments of FBDM it was possible to compile appropriate GIS profile maps. These GIS-profile maps summarise the disaster hazard, vulnerability and risk analysis of FBDM. Hence, these profile maps indicate the risk profile of the FBDM area of jurisdiction.

When drought and veld fires (which received the highest threshold value during the risk assessment) were combined, it was possible to compile a disaster hazard profile map for FBDM (Map 1).

From Map 1 it is clear that the most vulnerable area in the FBDM area of jurisdiction is the Magareng Local Municipality around Warrenton. This area has been very dry the previous 3 years and it is also located in the medium to high fire hazard zone.



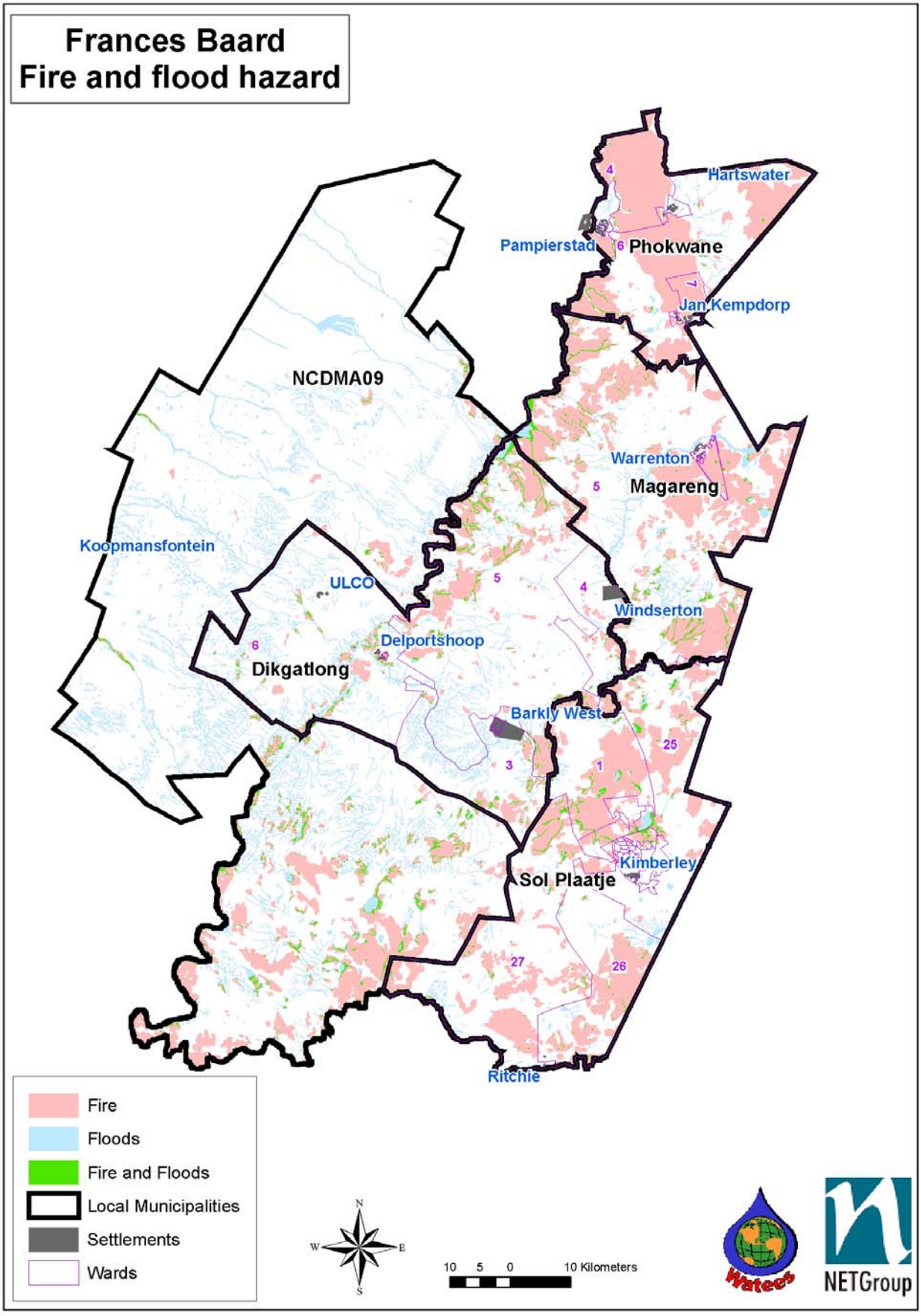
Map 1: Disaster hazard profile (drought and veld fire) for FBDM, 2006

From Map 1 it was possible to identified wards at each local municipality at risk (Table 3).

Table 3: Wards at fire and drought risk in FBDM area of jurisdiction, 2006.

Ward number	Local Municipality
6 7 9 8 3	Phokwane
5 4	Dikgatlong
5 4 2 3 1	Magareng

A second hazard profile map was compiled (Map 2). Map 2 indicates the combination of floods fire (high and medium to high) hazard. These are the most important natural hazards in FBDB that can be spatially predicted and demarcated. It is clear that all settlements in the FBDM area of jurisdiction can be considered to be at risk of both fires and floods.



Map 2: Disaster hazard profile (fire and flood) for FBDM, 2006

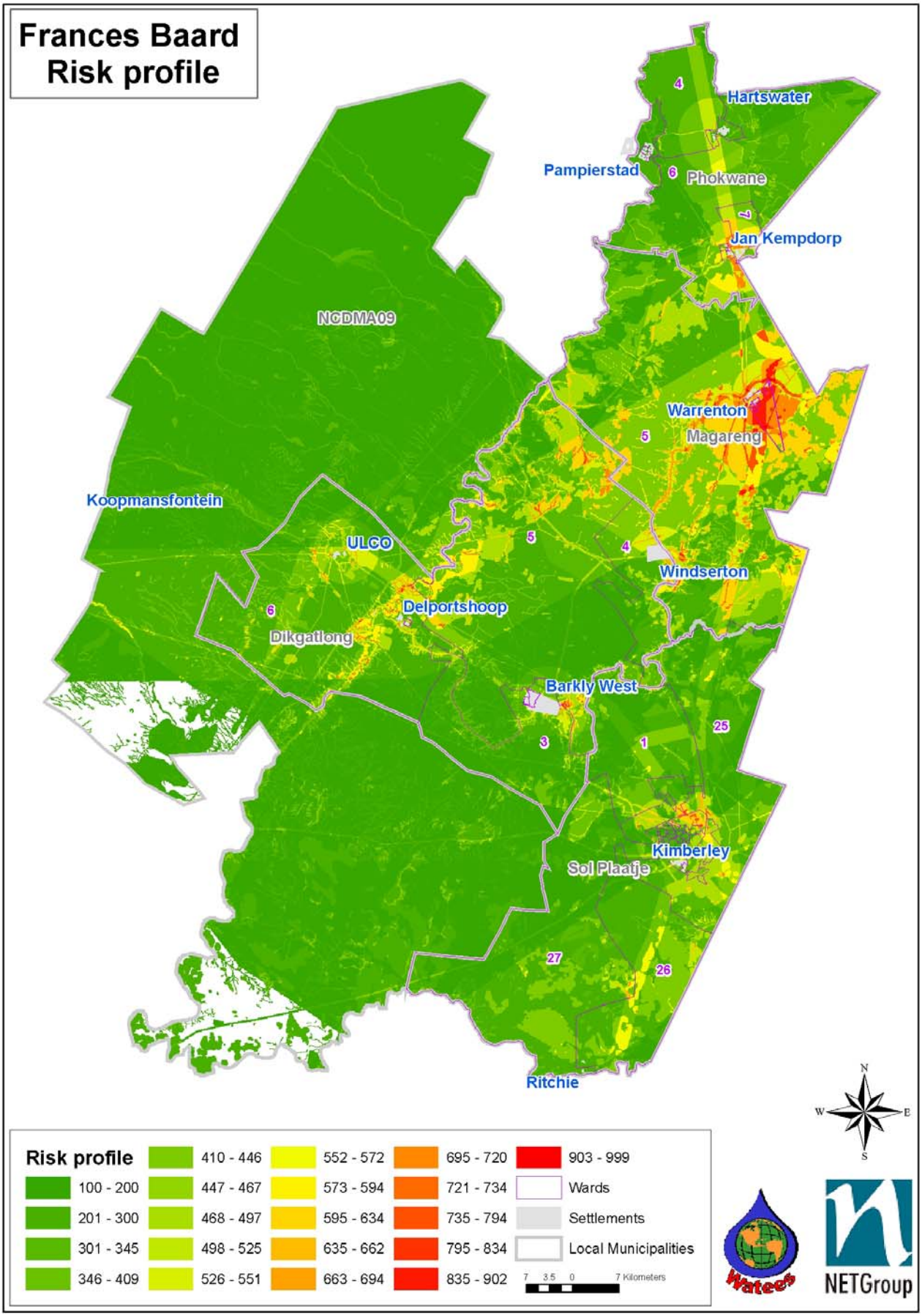
Risk profile for FBDM

A risk profile map was compiled for FBDM, using the threshold values of the risk assessment (Map 3). A high value indicates a high priority to implement risk reduction measures.

The Jan Kemp, Warrenton, Delportshoop, Barkley West and Kimberley area received that highest threshold values. Hence these areas are the highest priority to implement risk reduction measures. The Magareng Local Municipality seems to be the most at risk, mainly because of the possible drought, flood, fire, dam failure and hazmat hazards that may and/or could occur in this area.

Table 4 summaries the results of Map 3 on ward level. Table 4 indicates all the wards in FBDM where the implementation of disaster risk reduction strategies are a high priority. Only hazards that could be indicated spatially are included in Table 4.

Hazards such as poverty, diseases and epidemics are not included in the table as these affect all settlements. Drought and geology, especially seismic activity is difficult to predict and would probably also affect the whole area of jurisdiction. The drought attributes are therefore based on historical data and not predictions as most of the other hazards. Traffic accidents can also occur in all settlements as accidents could occur on any road.



Map 3: Disaster risk profile map for FBDM, 2006

Table 4: Wards located in a high risk zone in the FBDM area of jurisdiction, 2006

Local Municipality	Ward number
Sol Plaatje Municipality	21 3 4 18 25 26 1 14 27
Dikgatlong	5 4 6 3
Magareng	5 4 1 2 3
Phokwane	6 3 7 8 9 4 5 1 2

Tables 5 summarises the information in Map 3 for each local municipality. These tables indicate all the wards at local municipal level in the FBDM area of jurisdiction expose to disaster risks. Mainly because of the lack of appropriate spatial data, it was only possible to execute this analysis at ward level. The ideal situation is to analysis this at community level. Hence, it is highly recommended that a detail risk assessment need to be executed for all local municipalities at erven level. This is necessary to implement proposed risk reduction strategies by identifying appropriate risk reduction projects and plans at erven level for each local municipality. After this, it will be possible to link each risk reduction project with the IDP and Spatial Development Framework.

The red colour in Table 5 indicates a high priority to mitigate, while yellow and green colours indicate a medium and low priority for the implementation of risk reduction measures at each ward at the local municipality.

Table 5: Wards in the FBDM area of jurisdiction where risk reduction measures needs to be implemented, 2006.

Sol Plaatje (Wards)	Dikgatlong (Wards)	Magareng (Wards)	Phokwane (Wards)
21	**5**	**5**	**6**
3	**4**	**4**	**3**
4	**6**	**1**	**7**
18	**3**	**2**	**8**
25		**3**	**9**
26			
1			
14			
27			
23	2		4
7	7		
2			
6			
16			
20			
24			
5	1		5
8			1
17			2
22			
13			
9			
11			
12			
19			
10			
15			

Community capacity

Next was to analyse the capacity of the community and institutions (such as emergency services) to deal with disaster risk. For this purpose distinguish was made between the **socio-economic status** of communities and the **level and institutional resources**. The socio economic level of communities could contribute to the vulnerability of a community to disasters. The lower the socio economic status of communities, the higher the vulnerability of the community to disasters. In contras with last-mentioned, access to institutions with appropriate risk reduction resources could decrease the level of vulnerability to disasters.

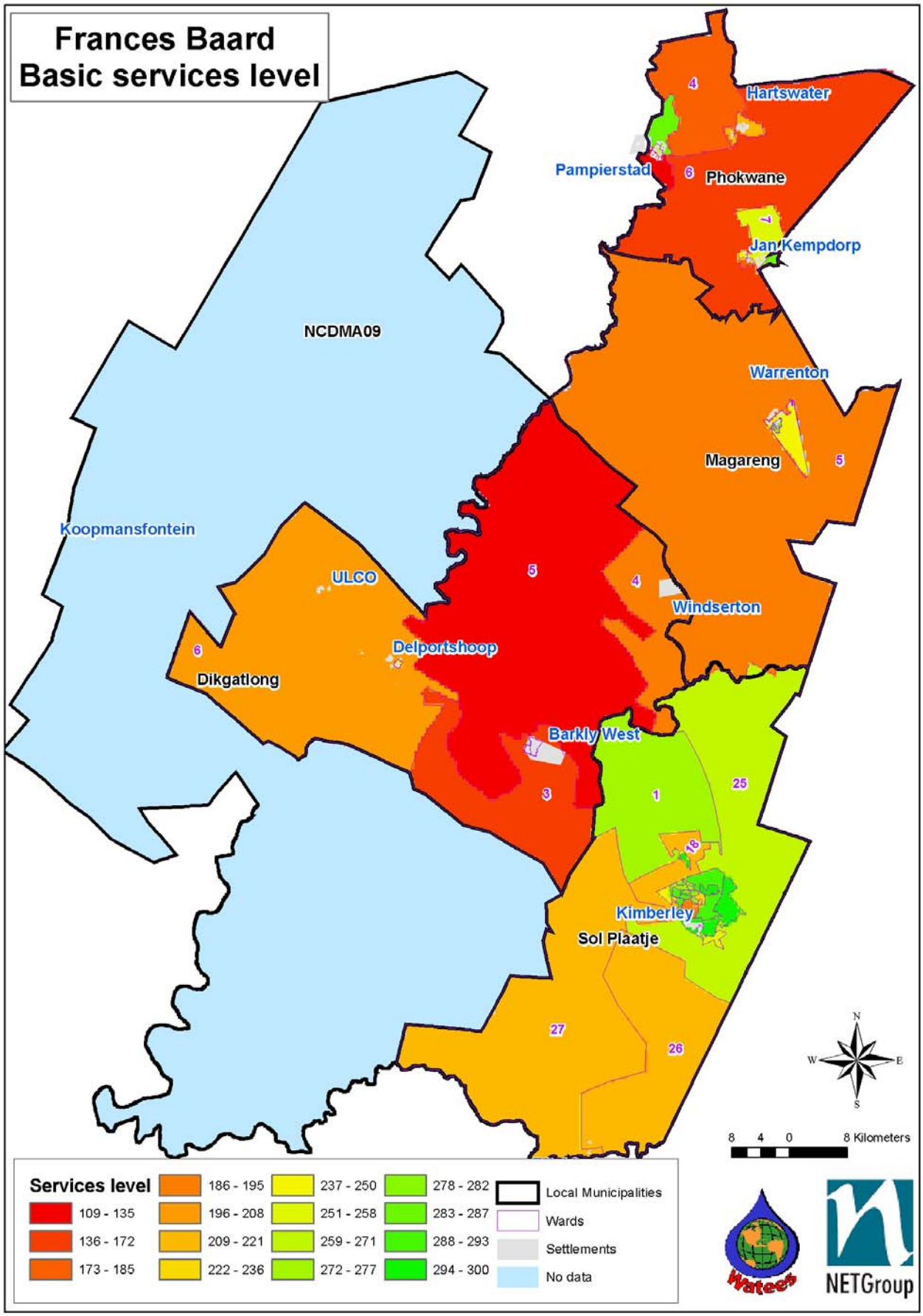
Socio-economic status

The assumption is made that communities with a low socio-economic status will be more vulnerable to disaster than communities with a higher socio-economic status. Hence, it was decided to compile a socio-economic status profile map for FBDM, indicating the vulnerability status of communities in the FBDM area of jurisdiction.

The percentage of households in all wards that have access to piped water, electricity and flush toilets have been added together. A total of 300 would indicate that a community has full access to all basic services, while 0 would indicate no access to services at all.

The red and orange shaded areas indicate communities with a higher need for basic services / infrastructure in comparison with the yellow and green areas (Map 4).

Based on this result one could assume that communities in red and orange areas have the need for more basic infrastructure. These areas include the rural areas of Dikgatlong and Phokwane Local Municipalities.

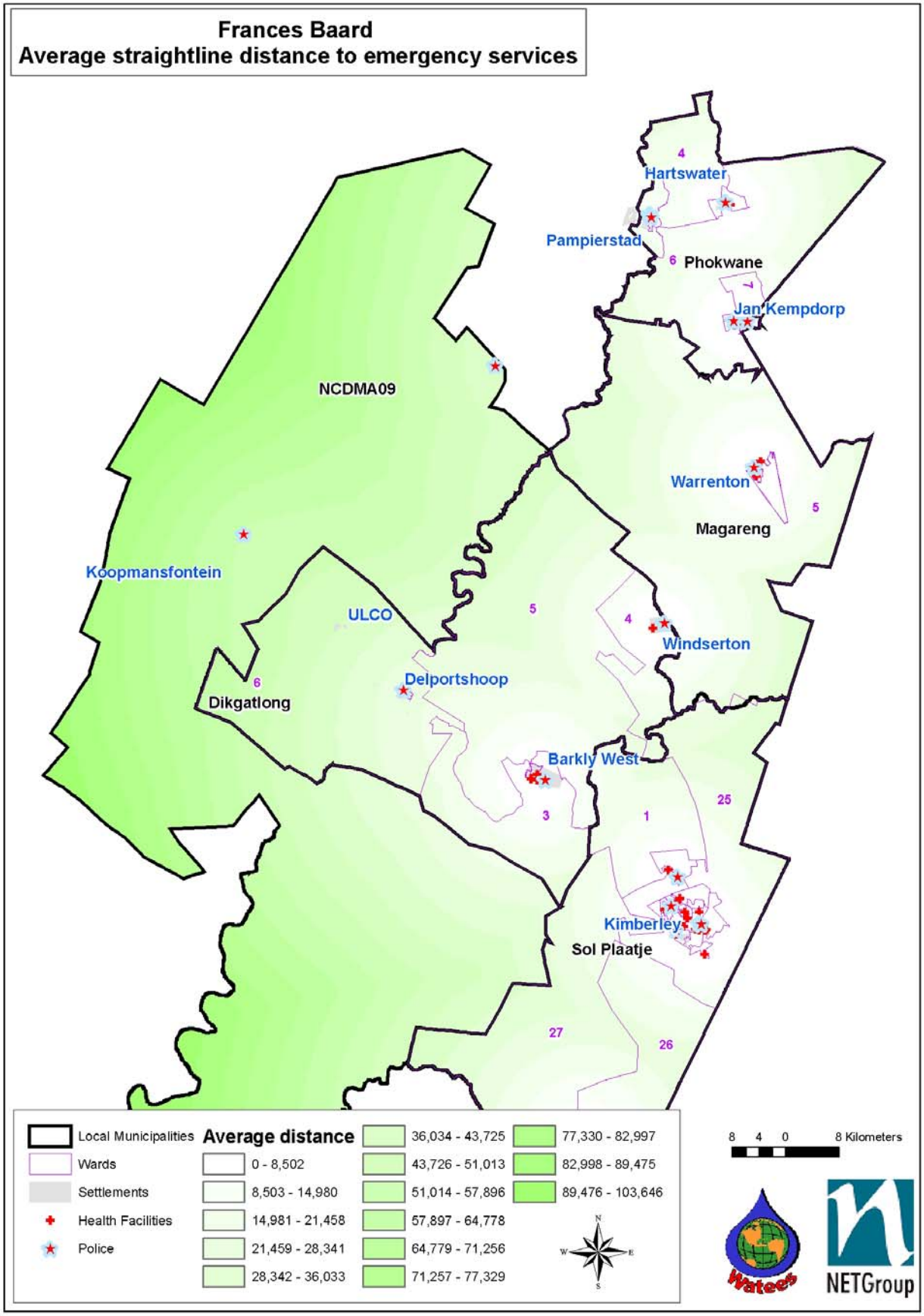


Map 4: Socio-economic status profile map for the FBDM area of jurisdiction, 2006.

Institutional capacity: Access to emergency services

The presence and well equipped emergency services could lower the vulnerability of communities to disaster. Map 5 is a distance matrix, indicating the average straight-line distance to the nearest police station or health facility.

As is indicated on Map 5, all the towns except for Koopmansfontein have relatively good access to emergency services.



Map 5: Average distance of communities from emergency services in the FBDM area of jurisdiction, 2006.

Contingency planning

Easy access to institutions or good spatial distribution of emergency services amongst communities will have no effect on the vulnerability status of communities if not well equipped to deal with potential disaster risks.

Hence, it is deemed necessary to compile a institutional resource profile map to assist FBDM in resource management at each emergency service station.

Institutional resource profile

The results from the hazard and risk assessment have again been used to compile an institutional resource profile. For this purpose, the following hazards were used:

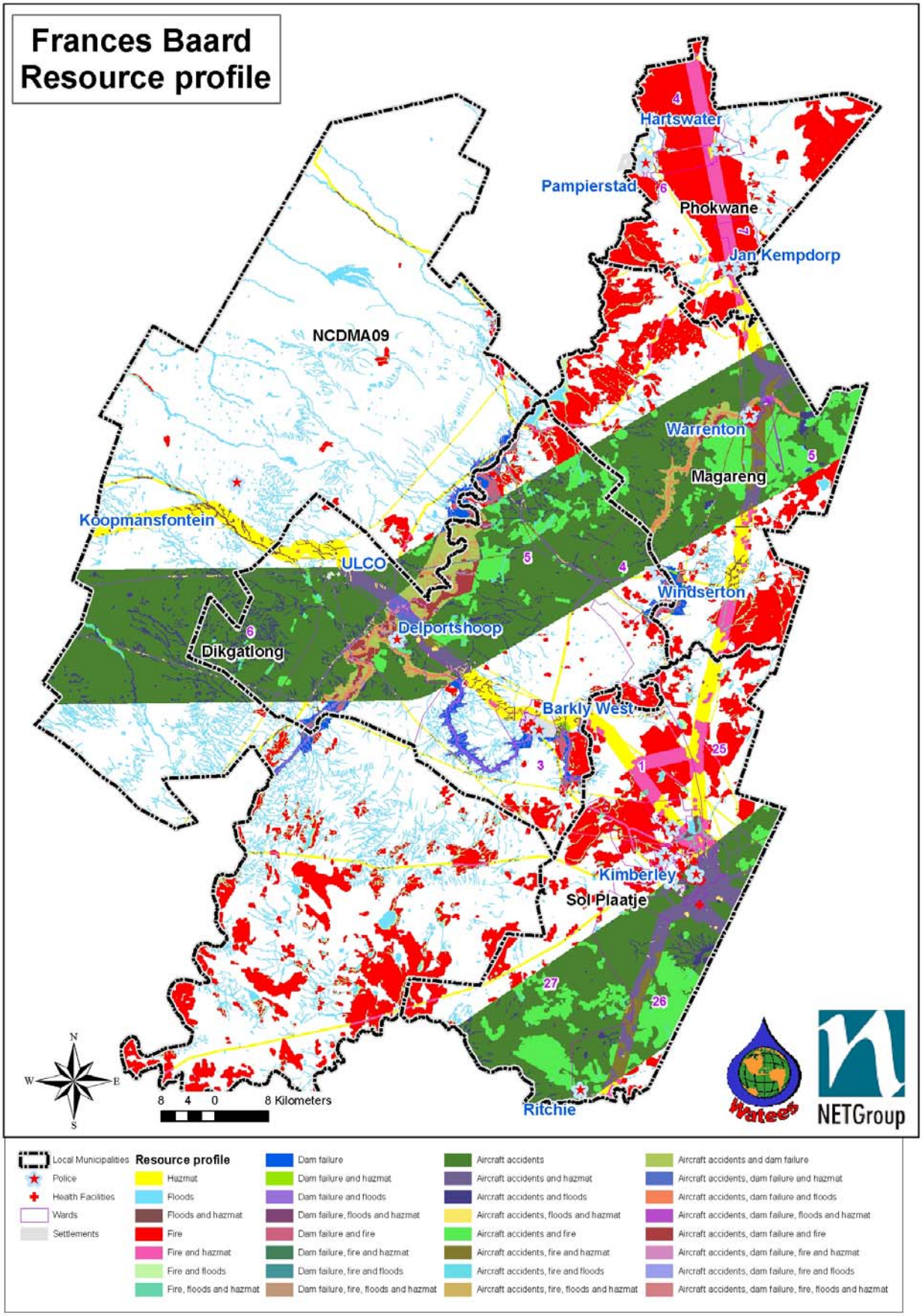
- Fire
- Floods
- Hazmat
- Road accidents
- Dam failure
- Aircraft accidents

The spatial distribution of these hazards was then compared to the spatial distribution of emergency services to assess the type of resources these institutions may need to respond to a potential incident and / or disaster.

Firstly it was assumed that road accidents could occur on any road and therefore all emergency services should be able to respond to car accidents. The remaining hazards were then used to compile Map 6.

Map 6 indicates the types of relevant hazards found in each emergency service area of jurisdiction. The emergency services in these areas should therefore have measures in place to be able to respond to these potential disaster risks. It must also be considered that the patrol boundaries of police stations are not restricted by municipal boundaries and some emergency services might need to respond to emergency situations outside their area of jurisdiction.

Emergency services in Phokwane Local Municipality must do the necessary preparations to respond to fire, floods, road accidents and hazmat incidents, while all the other Municipalities need to prepare for the above-mentioned hazards as well as a possible dam failure incident and aircraft accidents.



Map 6: Institutional Resource Profile map for FBDM, 2006.

6. Disaster Risk Reduction Plan

General

All disaster risk management plans must give explicit priority to the core principles of disaster prevention and mitigation. Internationally, disaster prevention, mitigation and preparedness are referred to as disaster risk reduction measures, mainly because it lessen likelihood of harmful losses by avoiding endangering hazards or reducing vulnerability. In this way, prevention and mitigation are central to achieving the goal of disaster risk reduction, in which vulnerabilities and disaster risks are reduced an sustainable development opportunities strengthened.

It is often difficult to distinguish between preventive or mitigative intervention. For this reason it is more practical to refer to risk reduction measures. Both (prevention and mitigation measures) minimise the risk of disasters.

Disaster Prevention
Disaster prevention refers to actions that provide "outright avoidance" of the adverse impact of hazards and related environmental, technological and biological disasters. Strategies applicable to preventive intervention are *inter alia (*see Appendix A for detail list*)*;

- Effective land-use planning,
- Basic public works and
- Effective municipal services that factor in the frequency and severity of natural or other hazards as well as human actions.

Examples are;

- Replanting indigenous grasses or trees on a recently burned slope near roads or dwellings to stabilise the soil and prevent damaging land subsidence.
- Locating critical rail. Road and telecommunications structures behind a coastal "setback" line in areas exposed to storm surges to prevent disruption to critical services during violent summer or winter storms.
- Careful positioning of storm water drainage and its ongoing maintenance, along with protection of natural wetlands, to prevent destructive flooding during heavy rain.

It is not possible to completely prevent all disaster events. Their severity can be reduced, however, through ongoing disaster mitigation efforts.

Disaster Mitigation
Disaster Mitigation refers to structural and non-structural measures that are undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards on vulnerable areas, communities and households. These efforts can target the hazard or threat itself – e.g. a fire break that stops a fire spreading close to residential areas. This is often referred to as structural mitigation, since it requires **infrastructure or engineering** measures to keep the hazard away from those at risk.

Disaster mitigation efforts can also target people who are at risk, by reducing their vulnerability to a specific threat – e.g. promoting community responsibility for controlling fire risk in an informal settlement. This is often called "non-structural" mitigation, as it **promotes risk-avoidance behaviours** and attitudes. A shift from structural to non-structural measures took place worldwide. The main reason for this is mainly because of the non contribution of structural measures to sustainable development objectives. In most cases, structural measures only reduce disaster damage and the level of risk remains the same. Hence, structural measures only create a false sense of security for communities.

The following non-structural measures strategies may be considered by disaster management (see Appendix A for detail list):

Public Instruments
The main aim of public instruments is to guide human behaviour in such a way that it will contribute to the reduction of disaster risk and / or the vulnerability of communities and infrastructure

- Disaster Information – Dissemination of disaster information to communities as part of awareness campaigns. This will also guide communities in the implementation of more safe best practices.
- Training and education of communities in disaster related matters.
- Disaster Insurance
    - Only act to reduce the impact of the loss after it has occurred, hence it does not reduce any risk, but rather redistribute the risk to the insurer.
    - However, the premium gives an indication of the risk involved, when insured against any possible loss.
- Tax and subsidies
- Disaster precautions
- Disaster Aid and Relief actions

Planning and Organising

Dangerous, uneconomical and undesired actions can be reduced by better planning and organising. Such measures include;

- Zoning and building regulations
- Disaster Proofing – "A body of adjustments to structures and building contents")
  - Permanent – Choice of building material to erect buildings
  - Unforeseen – After early warning has been distributed, e.g. secure of walls and closing of unnecessary openings ect.
  - Emergency – e.g. the use of sand bags during a flood.
- Land-use planning (Planning and establishment, permanently evacuation)
- Development Policy (which will contribute to sustainable development objectives)
- Organising for disasters
- Early warning systems – the better communities react on any warning message, the lower the impact of a disaster.
- Health related regulations
- Permanent Evacuation – this option leads to huge reallocation and development project. The social disruption to reallocate people cannot always be justified.

Research indicates that it is not economic viable to implement risk reduction measures to prevent the total risk of a disasters. Hence, it is important to determine the optimum in such a way that the total benefit exceed the total cost (must include all economical and social benefits and costs). In some cases the optimum may only be reached by the implementation of both structural and non-structural measures.

Risk Management

The following operational sequence is important during risk management to take cognisance of.

Risk Control

- Terminate: Eliminate the potential of loss
- Tolerate: Live with the risk
- Treat: Implement risk reduction measures

Risk Financing

- Terminate: Transfer -Self-funding or Insurance

Risk Control Hierarchy

- Elimination, Avoidance or Substitution.
- Control at Source
- Minimisation of Frequency
- Minimisation of Consequences
- Mitigation

Disaster Management plays a fundamental role to ensure that the identified risks are brought to a level which the municipality / community is willing to tolerate. Risk management programmes should pay for itself due to lower number of injuries, less disruptions, etc - if implemented properly it will ensure more sustainable practices.

Risk reduction strategies, when appropriately implemented, will;

- Stimulate the economy growth
- Strengthen infrastructure
- Help create more employment
- Vastly improve general development
- Ensure greater stability

Disaster Risk Reduction Plans, Projects and Programmes

According to the National Disaster Management Framework, there are eight requirements that must be applied and documented by all spheres of government. When planning for disaster risk reduction initiatives.

1. Use disaster risk assessment findings to focus planning efforts.

Any disaster risk reduction effort must be informed by a reliable disaster risk assessment.

2. Establish an informed multidisciplinary team with capacity to address the disaster risk and identify a primary entity to facilitate the initiative

Disaster risk reduction planning must be multidisciplinary and must draw on appropriate expertise. Disaster risk management requires both technical expertise in hazard processes as well as understanding of the complex social and economic conditions that drive disaster risk in vulnerable communities.

3. Actively involve communities or groups at risk

All initiatives must involve constructive consultation between at-risk groups and/or communities and external service providers. Risk reduction initiatives are more effective when they are discussed and implemented collaboratively with those affected, as this allows for the inclusion of local knowledge and expertise.

4. Address multiple vulnerabilities wherever possible

Risk reduction is a value-adding capability, as it aims at reducing disaster losses in vulnerable areas and groups. Hence, any disaster risk reduction projects and programmes must add value to other development initiatives. Vulnerabilities can be addressed by:

- improving socio-economic conditions and building community cohesion
- ensuring the continuity of protective environmental services
- increasing resilience and/or continuity of public services and infrastructure to better respond to expected external shocks.

5. Plan for changing risk conditions and uncertainty, including the effects of climate variability

Disaster risk is extremely dynamic and is driven by many rapidly changing environmental, atmospheric and socio-economic conditions. Hence, plans are not sufficiently adaptive to minimize the impacts of unexpected events or processes.

6. Apply the precautionary principle to avoid inadvertently increasing disaster risk

Effective disaster risk reduction planning efforts must apply the precautionary principle of "do no harm". The likelihood of negative consequences is reduced if a careful disaster risk assessment actively informs the planning process, a competent multidisciplinary team is established, and mechanisms for transparent community consultation are put in place.

7. Avoid unintended consequences that undermine risk-avoidance behaviour and ownership of disaster risk

The disaster risk reduction planning process must anticipate and manage unintended consequences that increase disaster risk. Well-intentioned disaster risk reduction programmes that deliver external services to at-risk areas, communities and households can inadvertently reward risk-promotive behaviour and undermine existing capabilities.

8. Establish clear goals and targets for disaster risk reduction initiatives, and link monitoring and evaluation criteria to initial disaster risk assessment findings

Disaster risk reduction plans must define clear monitoring and evaluation criteria for measuring their effectiveness. These must be linked to initial assessment findings to demonstrate the effectiveness of the specific initiative in reducing vulnerability or reducing disaster loss. Assessment findings must also be used to highlight learning points for future projects and programmes.

Municipal and provincial disaster management centres must include documented accounts of the disaster risk reduction projects, programmes and initiatives planned and implemented.

Including Disaster Risk Reduction efforts in other structures and process

Disaster Risk Reduction initiatives must also be included in other structures and processes, hence the Disaster Management Plan has to be aligned with the Spatial Development Plan and the IDP.

- **Spatial development planning**
  Disaster risk is driven by both hazard and vulnerability factors reflected in spatial development frameworks. All disaster risk assessment findings are directly applicable to spatial development planning. Hence, all relevant spatial information must inform disaster risk reduction planning and also ensure that verified risk information is incorporated into spatial development plans and maps.

- **Integrated development planning**
  Disaster risk reduction efforts are multi-sectoral efforts focused on vulnerability reduction over a medium to long term period. To be efficient and effective they must be incorporated into ongoing IDP projects, processes, programmes and structures. They are best planned and implemented as development initiatives through IDP mechanisms and phases.

- **Risk avoidance enforcement**
  Critical components of effective disaster risk reduction are regulations, standards, by-laws and other legal enforcement instruments that discourage risk-promotive behaviour and minimize the potential for loss. Within provincial and municipal spheres, this may involve:
  - amendment of urban planning standards
  - amendment of land-use regulations and zoning
  - amendment of minimum standards for environmental impact assessments
  - introduction of standards for risk-proofing lifeline services and critical facilities from known priority disaster risks
  - introduction of by-laws to implement extraordinary measures to prevent an escalation of a disaster or to minimize its effects.

Implementation and monitoring of Disaster Risk Reduction Plans, Projects and Programmes

Effective implementation
The monitoring processes and evaluations for disaster risk reduction initiatives specifically targeted at at-risk communities and must include both qualitative and quantitative vulnerability reduction outcomes.

Measurable reductions in disaster losses
The provincial and municipal disaster management centre must include in their annual reports documented accounts of the disaster risk reduction projects, programmes and initiatives planned and implemented. All centres must report on disasters that occurred within their areas of jurisdiction, e.g. on the frequency and severity of small-, medium- and large-scale disaster events, especially those in communities and areas identified as high risk through disaster risk assessment processes.

Reduced need for social relief
The disaster management centre must indicate the number of households received social relief assistance. This information must be further differentiated by location, date, disaster type and amount provided.
An important benchmark for monitoring the effectiveness of disaster risk reduction initiatives in the most vulnerable communities will be changing demands for social relief assistance.

Generation and dissemination of case studies and best-practice guides in disaster risk reduction
The promotion of a "culture of prevention" is practically enabled by access to examples of best practice in disaster risk reduction. Disaster management centres must develop as a component of its education, training and capacity-building strategy, and mechanisms for disseminating information on best practice in disaster risk reduction.

Three levels of implementation of disaster risk reduction strategies, plans and projects
The next diagram (Figure 1) summaries the implementation of appropriate disaster risk reduction strategies at three levels, namely a strategic, tactical and operational level.

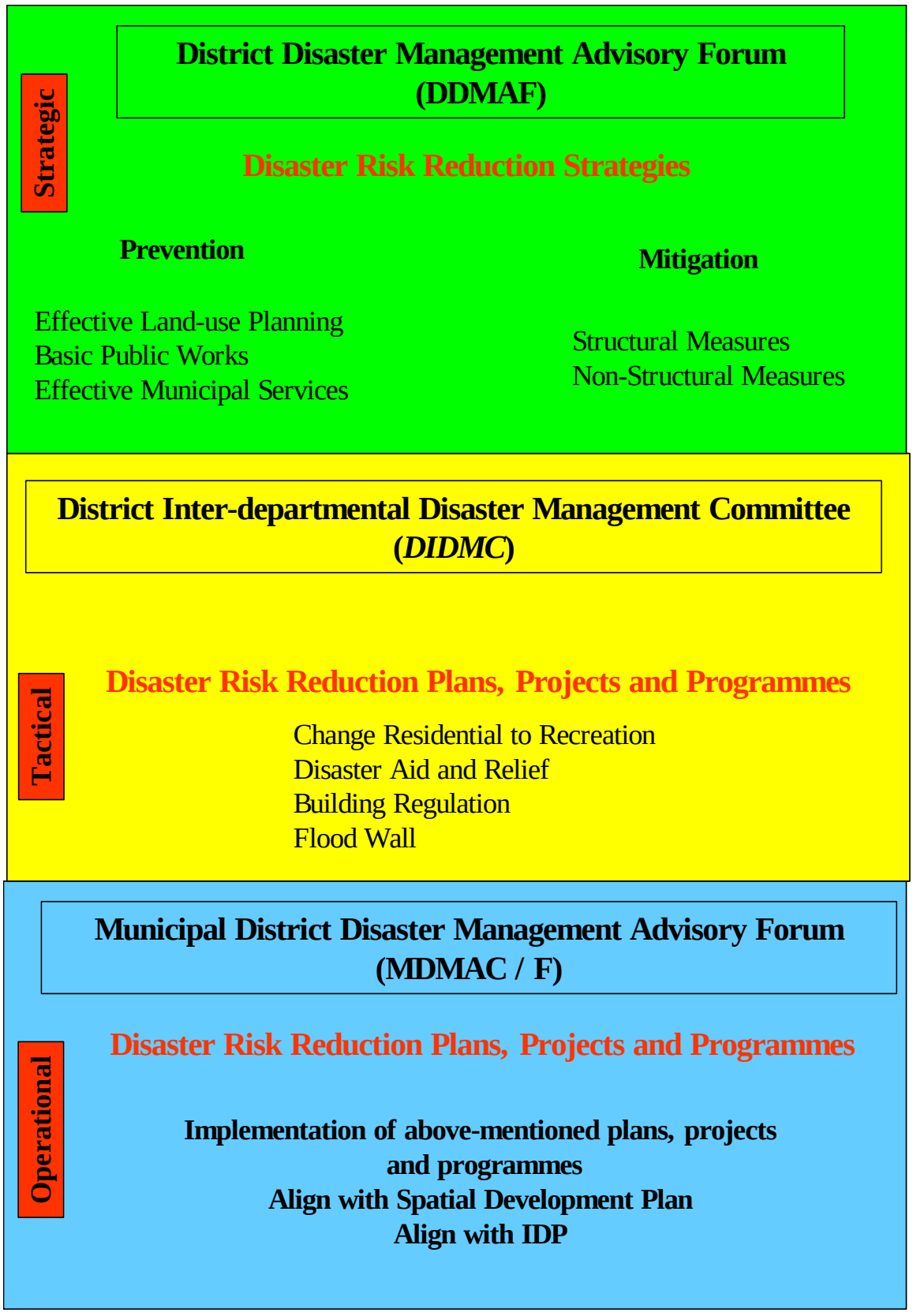


Figure 1: **Three levels of implementing disaster risk reduction strategies, plan and projects.**

Strategic Phase
It is the District Disaster Management Advisory Forum's (DDMAF) responsibility to identify appropriate risk reduction strategies for the district municipality (as discussed above). The next step is to identify appropriate risk reduction plans, projects and programmes which are based on a reliable disaster risk assessment, and they will be discussed next.

Tactical Phase
The identification of disaster risk reduction projects can take place after appropriate risk reduction strategies were adapted by the DDMAF. Hence, the proposed tactical body, namely the District Inter-departmental Disaster Management Committee (DIDMC) is mainly responsible for facilitating this process.

Risk reduction projects must be evaluated in terms of:

- Effectiveness,
- Efficiency,
- Appropriateness,
- Cost-effectiveness and
- Sustainability.

Economic and social cost benefit analysis and sustainable principles can inter alia be used for this purpose. Implementing of such programmes must be cost effective. This involves looking for ways in which disaster management can be implemented without the programme being a huge extra cost to government. Existing resources and programmes must be used, rather than creating new one. A multidisciplinary team is required and can be co-opted to be part of the tactical body.

Disaster management must be sustainable. This means that the issues must be kept alive. Two useful approaches to keep the issues in the public mind are training and public awareness programmes. Training cannot only take place when money is available or once every five years. Therefore, the training process must be integrated and ensure that people are being trained on a regular basis so that people can know what their responsibilities are in the implementation of disaster management programmes. In the same way public awareness can contribute to sustainability. "Ongoing public awareness, with the momentum shifting to community representatives, can lay the foundations of this ownership". Public awareness must be a two way process which establishes dialogue, rather to focused too much on officials passing on to communities what they feel communities should know (Westgate, 1999).

Finally, mitigation actions and development are not synonymous and therefore not too much emphasis must be placed on mitigation. Mitigation actions aim to reduce the impact from future disasters, while development aims to build community capacity and to promote self-reliance in relation to social and economic parameters. According to Westgate (1999) the precursor to any effective risk and vulnerability reduction is not purely the implementation of a comprehensive disaster management programme; it is the **implementation of a sound development programme.**

Operational Phase

The implementation of proposed risk reduction plans will take place during the operational phase. Each proposed risk reduction plan much be submitted as a project proposal (including detailed budget) to be implemented on a local municipal level (see Appendix B for example to be completed). For this, the proposed Municipal Disaster Management Advisory Committee / Forum (MDMAC / F) will facilitate the process. It is the main responsibility of each line department to implement all risk reduction plans. Hence, risk reduction plans must be integrated with the Integrated Development Planning Process (IDP) at a local municipal level to be approved and implemented by local municipalities.

Appendix A summarises examples of risk reduction strategies, and Appendix B is an example of a standardised proforma to be used to implement proposed disaster risk reduction projects.

7. Disaster Response and Recovery Plan

The Disaster Response Plan comprises various plans, e.g.;

- Standing Operating Procedures (SOP's)
- Generic Checklists
- Media Liaison
- Resource Database
- Guidelines for Mutual Aid Agreements
- Essential information on development, mitigation, prevention and awareness programmes.

A standardised outlay for all SOP's was developed. The following information was captured for each SOP;

- Code (indicating the seriousness of the incident).
- Message to be disseminated during an incident to all stakeholders.
- Turnout procedures (who must do what?).
- Agencies involved (a complete contact list with contact details was developed).
- Resource database for each agency involved (in terms of vehicles, personnel, equipment and volunteers).
- Checklist.
- Post Mortem Report.

8. District Disaster Management Centre (DDMC) Plan

Placement of the District DDMC and Satellite Facilities.

According to the Disaster Management Act, it is compulsory for district municipalities to establish a DDMC. However, the Act is not clear where to place the centre geographically. For this reason GIS-techniques can be used to determine to geographical placement of the DDMC for FBDM.

In identifying the ideal location it can be assumed that the DDMC should be in a low disaster risk area, accessible to all stakeholders and have excellent and reliable communication channels. Hence, the following principles are recommended;

- A GIS map can be compiled to indicate the disaster risk profile of FBDM.
- Road and air accessibility to the DDMC.
- Communication.

The location of the DDMC was not part of the scope of works during this phase of the project. The establishment and location of possible satellite facilities can only be dealt with, once the location of the DDMC is determined.

However, it is recommended that a DDMC be established for FBDM with four satellite facilities at each local municipality.

9. Disaster Management Action Plan for FBDM

With the information of all these plans it was possible to compile a Disaster Management Action Plan (Appendix C) for FBDM to guide the disaster management in the implementation of the proposed plan.

10. Recommendations

The following recommendations can be made for FBDM:

1. Adopt proposed disaster management **structure and organisation** for FBDM.
2. Determine the location of the District Disaster Management Centre (DDMC).
3. Determine the **location** of disaster management satellite centres at each local municipality.
4. Establish a **DDMC** by at least allocate sufficient office space to implement the disaster management act.
5. Appoint at least a **head** of the DDMC.
6. Establish the **Disaster Management Advisory Forum** (DMAF) to operate as a strategic body, which will facilitate the implementation of the disaster management act and policy of FBDM.
7. Implement the proposed **disaster risk reduction strategies** at local municipal level.
8. Execute a detailed disaster risk assessment for each local municipality to identify appropriate risk reduction projects, plans and programmes.
9. Draft and implement an appropriate **communication strategy** for FBDM.
10. Draft and implement a disaster management **information system**.
11. Review and update disaster management plans annually.

Appendix A:
Examples of disaster risk reduction strategies

Flood
• Flood proofing and elevation
• Diverting flood water through dams and reservoirs
• Dikes
• Levees
• Flood walls
• Channel alterations
• High flow diversions
• Storm water management
• Coast- or river-line protection
• Watershed management
• Integrated water resource management
• Regulations
• Development and redevelopment policies
• Safe citing in flood prone areas

Winds and Cyclones
• Safe citing in cyclone/storm wind prone areas
• Shelter plantation
• Improving drainage
• Resistant house designs and construction of cyclone shelters

Epidemics
• Surveillance and warning
• Preventive measures
• Strengthening institutional infrastructure
• Awareness
• Training / education of the public to assist
• Report illness and live a healthy life

Road Accidents
• Enforcement of existing provisions of transport related Acts /and other regulations
• Strengthening institutional capability
• Strengthening road infrastructure
• Recommending new regulations
• Effective communication with the TRAC organisation and early warning to the public using the freeways should be prioritised.

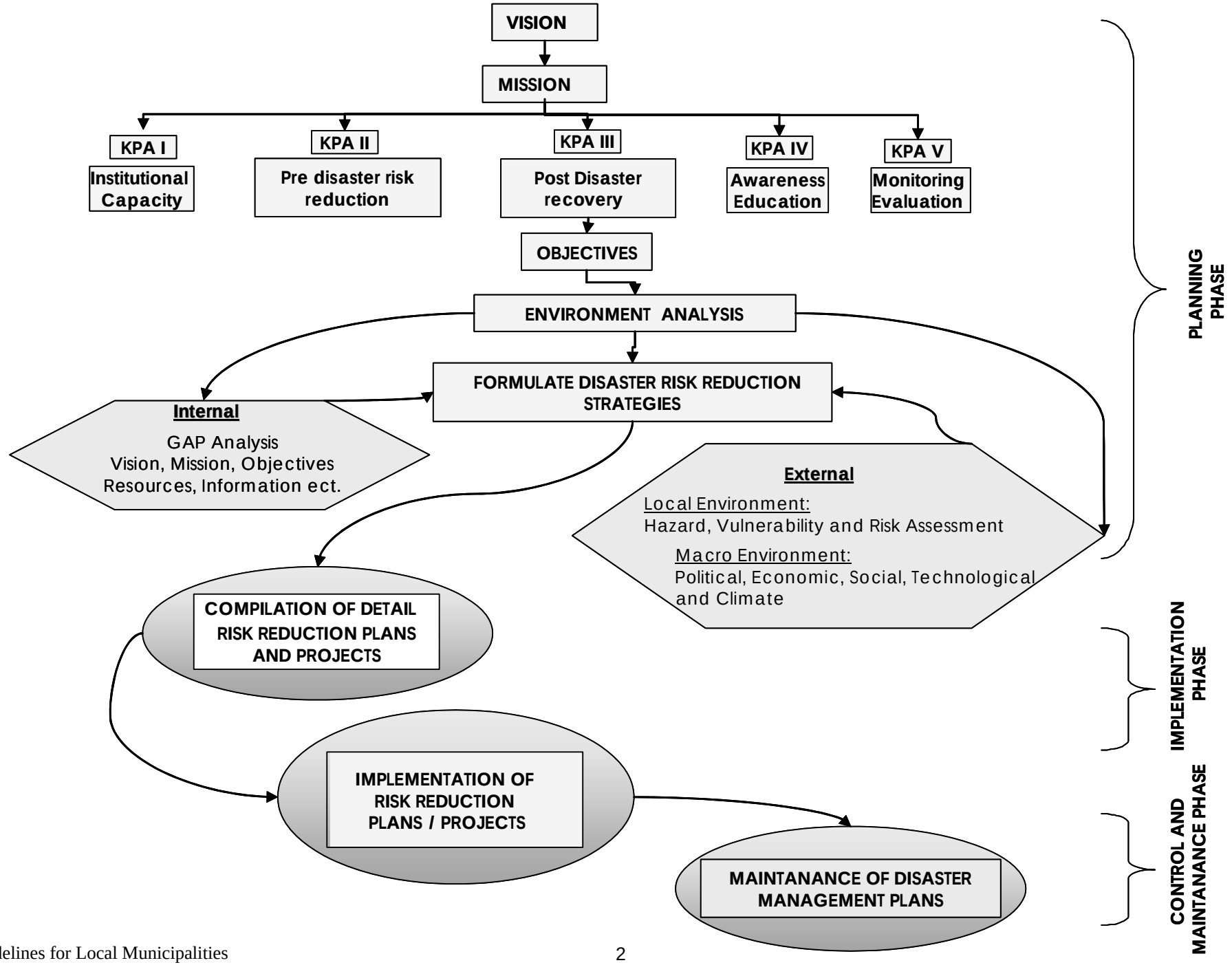
Fires
• Fire fighting services available to areas outside the local municipal limits
• Improve fire fighting capabilities
• Improving co-ordination between municipal fire services and industrial safety departments
• Establishment of special burns wards and clarifying the roles and responsibilities of district administration, police, fire services and medical services
• Awareness of the hazards of the coal mine areas
• Prevention of spontaneous combustion is an all-important task for all involved.

Hazmat
• All industrial concentrations should be encouraged to establish associations for management of industrial accidents and to establish toxin centres wherever required.
• Industries involved in the production or transportation of inflammable, hazardous and toxic materials should have a mandatory responsibility for preparing an off-site plan.
• Upgrading of data management and safety procedures

Security
• All types of crime should be combated as an integrated effort.
• Community awareness programmes should include anti-crime and crime reporting programmes / mechanisms.
• Access to police and telecommunication facilities to report crime should be established.
• Partnerships between community and business should be encouraged and implemented
• The access to and support of the judicial system should be part of the awareness and education programmes.

Poverty
• Poverty as a contributing factor to vulnerability profiles needs to be addressed on a multi-sectoral level.
• Basic needs, e.g. infrastructure (roads, storm water management, electricity ect) , water services and sanitation will play a fundamental role in poverty alleviation programmes.
• Job creation.
• Best practices to become self sufficient.

Appendix B:
Guidelines to Local Municipalities to Implement Disaster Management


VISION
MISSION
KPA I
Institutional Capacity
KPA II
Pre disaster risk reduction
KPA III
Post Disaster recovery
KPA IV
Awareness Education
KPA V
Monitoring Evaluation
OBJECTIVES
ENVIRONMENT ANALYSIS
FORMULATE DISASTER RISK REDUCTION STRATEGIES
Internal
GAP Analysis
Vision, Mission, Objectives
Resources, Information ect.
External
Local Environment:
Hazard, Vulnerability and Risk Assessment
Macro Environment:
Political, Economic, Social, Technological and Climate
COMPILATION OF DETAIL RISK REDUCTION PLANS AND PROJECTS
IMPLEMENTATION OF RISK REDUCTION PLANS / PROJECTS
MAINTANANCE OF DISASTER MANAGEMENT PLANS
PLANNING PHASE
IMPLEMENTATION PHASE
CONTROL AND MAINTANANCE PHASE

KPA I: Institutional Capacity Building for Disaster Management.

Guidelines:

- Adopt the proposed disaster management structure and organisation.
- Establish proposed committees and forums.
- Establish, train and maintain a disaster volunteer contingent.
- Compile appropriate mutual aid agreements with all identified role players and stakeholders.
- Develop appropriate communication links with all role players and stakeholders.
- Develop an appropriate disaster management information system.
- Establish appropriate satellite and mobile disaster management facilities where necessary.
- Use the following Legislation to compile the Local Municipal Disaster Management Plan (LMDMP)
    - **Development Facilitation Act**: - Requires Land Development Objectives (LDO's).
    - **Local Government Transition Act**: - Requires Integrated Development Plans (Disaster Management Plan is mentioned by name).
    - **Municipal System Act**: - Requires Integrated Development Planning.
    - **Environmental Legislation**: - Requires Environmental Impact Assessments (EIA).
    - **Agricultural Land Legislation**: - Emphasise the management of wetlands, flood plains and catchments.
    - **Water Legislation**: - Requires the determination of flood lines, flood plain development and dam safety regulations.

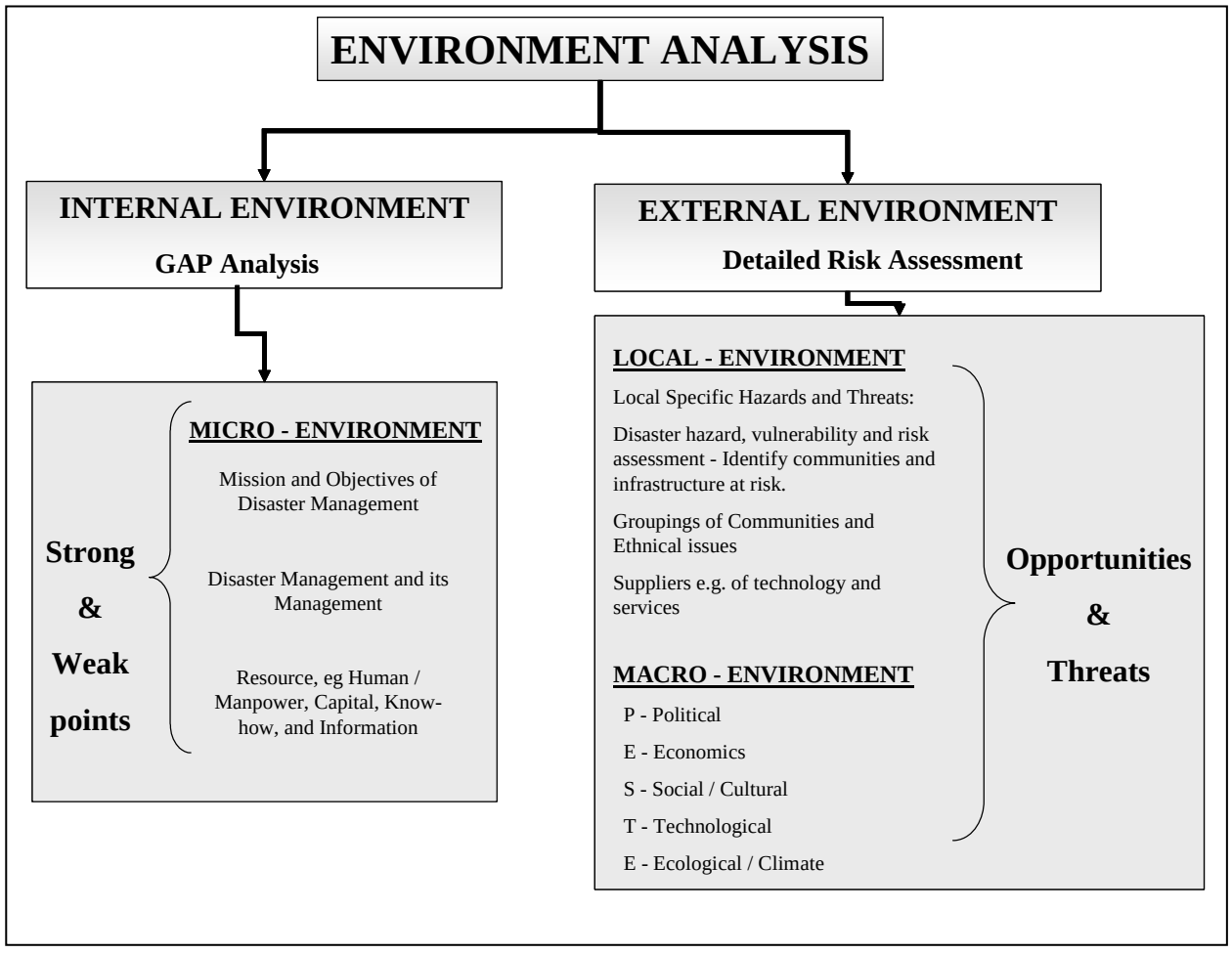
KPA II: Pre-Disaster Risk Reduction.

Guidelines:

Analyse the internal environment by executing a GAP analysis.

- Adapt the Disaster Management Vision, Mission and Objectives of FBDM.
  - Objectives have to be:
    - measurable,
    - flexible,
    - realistic,
    - motivated and
    - achievable.

- During the GAP-analysis the strong and weak points of the Disaster Management Component are normally identified.

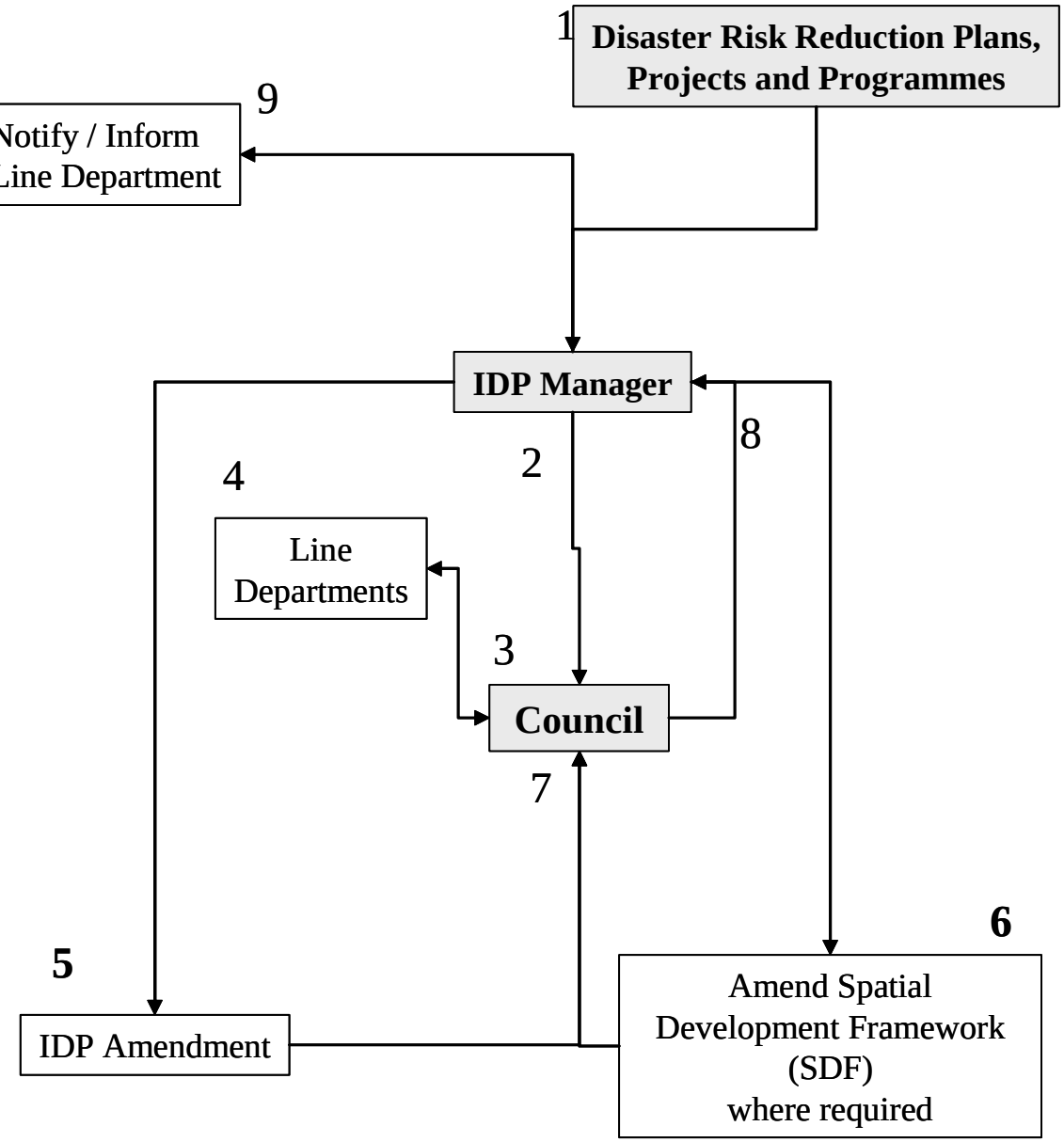


Analyse the external environment by executing a detail disaster risk assessment.

Guidelines:

The Local Environment:

- Information needs to be obtained on existing hazards, risks and vulnerable communities and infrastructure; by using *inter alia* indigenous knowledge.
  - Identify all potential hazards in the area of jurisdiction by,
    - using indigenous knowledge,
    - using GIS-techniques.
  - Transferring of identified hazards to GIS-maps to indicate the location of all identified hazards.
  - Execute a hazard assessment to compile a hazard profile map for the area of jurisdiction, using GIS-techniques.
  - Execute a vulnerability assessment to compile a vulnerability profile map for the area of jurisdiction, using GIS-techniques.
  - Identify communities and infrastructure at risk
  - Execute a risk assessment to compile a disaster risk profile for the area of jurisdiction.
  - Prioritise all identified hazards and align with IDP (seen Figure for IDP process).



Explanation

1. Disaster management submit propose risk reduction plans, projects and programmes to the IDP Manager.
2. The IDP manager presents the proposed projects to Council.
3. Council refers these projects to relevant line department(s) for feedback.
4. The line department(s) provide their inputs and recommendations.
5/6. Council provides its decision on the inclusion of the projects to the IDP manager and the amendments are incorporated in the IDP and SDF.
7. All amendments must be approved by Council.
8. Council gives the approved amendments through to the IDP manager.
9. The IDP Manager notifies / informs the relevant line department(s) of the approved projects to be implemented.
10. The relevant line department implements the approved projects.

Incorporating Disaster Management into IDP

The Macro Environment:

- Political: Governmental Policies and Legislations.
- Economical: Monitory and Fiscal Policies.
- Social / Cultural Impact of different cultural groups and their behaviour.
- Technological Innovation en Technology available for disaster management purposes.
- Ecological / Climate Impact of the natural environment on disaster management

- Opportunities and threats to be identified for Disaster Management.

Compile Disaster Risk Reduction Strategies

The primary role and responsibility of the **DDMAF** is to facilitate the process of identifying appropriate disaster risk reduction strategies for all identified hazards.

Guidelines:

- Compile appropriate disaster risk reduction strategies for the local municipality.

Compile Disaster Risk Reduction Plans

The primary role and responsibility of the **DIDMC** is to implement identified risk reduction strategies by means of the compilation of appropriate risk reduction plans and projects.

Each Local Municipality has to compile a separate disaster risk assessment report to identify all the communities and infrastructure at risk in their area of jurisdiction. This is extremely important to compile detailed disaster risk reduction plans and projects.

Guidelines:

- Using the proposed disaster risk reduction strategies of the district municipality to identify appropriate disaster risk reduction plans, programmes and projects.
- Align proposed disaster risk reduction plans, programmes and projects with the IDP of each Local Municipality.
- Link and align disaster risk reduction plans with KPA's of each line department.
- Registrar risk reduction plans as a project on the proposed proforma supplied by the district municipality.

Proposed outlay for disaster risk reduction planning and registration of risk reduction projects.

DISASTER RISK REDUCTION PLANNING

HAZARD TYPE:

……..

Possible Risk Reduction Strategies	Possible Risk Reduction Measures	Estemated Cost (R)	Estemated Benefit (R)	Responsible Department (s)	Contact Person	Contact Number
1.						
	1.					
	2.					
	3.					
	4.					
2.						
	1.					
	2.					
	3.					
	4.					
3.						
	1.					
	2.					
	3.					
	4.					
4.						
	1.					
	2.					
	3.					
	4.					

SUMMARY FOR RISK REDUCTION PROJECTS

Project Name	
Hazard / Risk / Threat to be addressed	
Risk Control	

Terminate	
Tolerate	
Treat	

Line Department Responsibility	
Major Activities	

Activity	**Time Frame**
1.	
2.	
3.	
4.	
5.	
6.	

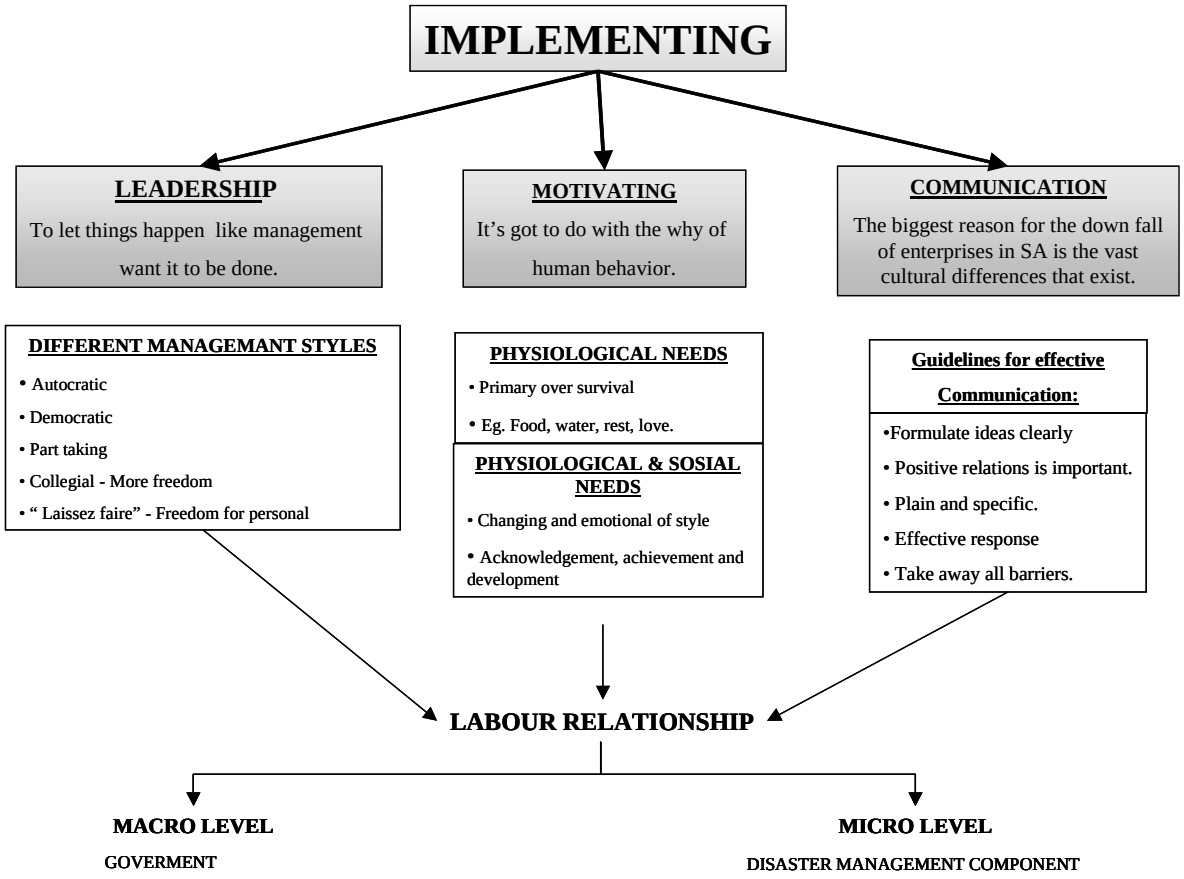
Cost to Reduce Risk	
Level of Acceptable Risk	
Benefit of Risk Reduction measure	
Cost / benefit ratio	
Remarks	

Implement Disaster Risk Reduction Plans, Projects and Programmes

The primary role and responsibility of the **MDMAC** is to implement the proposed risk reduction plans, projects and programmes as approved by the Municipality.

Guidelines:

- Implement proposed disaster risk reduction plans, programmes and projects at each Local Municipality.
- Align disaster risk reduction plans with the Spatial Development Framework of the Local Municipality and send a copy to the District Disaster Management Centre.
  - Specify the land-use type for areas suitable for development.
  - Indicate areas suitable for development but with certain precaution measures.
  - Indicate areas not suitable for any development.
- Formulate and adjust development policies to ensure sustainable development in future.



Three aspects to take into consideration when implementing any plan, namely:

- Leadership
- Motivation
- Communication

At this stage it should become apparent that although for ease of reference and understanding, the application of disaster management can be implemented in different phases, many aspects could run concurrent, depending on what has been undertaken to date, and/or the level of progress being made with a specific item, or urgency, for that matter. Leadership is the single and most important part for the implementation of any plan. Different styles of leadership exist and it is for the Disaster Management Manager to select in some instances an appropriate style in order to implement the formulated Disaster Management Plan.

All activities have to be controlled by measuring and evaluating results of the Disaster Management Plan in order to take corrective actions. This process has to take place continuously to ensure that Disaster Management remains on track and that changes can be made timeously, where necessary.

"What gets measured – gets done!"

A practical way to implement, monitor and evaluate the status of any plan.

COMPILING AND IMPLEMENTATION OF DETAILED DISASTER MANAGEMENT PLANS

Objective I: Establishment of a Disaster Management Centre

AIMS	Tasks	Begin	End	Responsible Person(s) / Department	Remark(s)
1					
2					
3					
4					

KPA III: Post Disaster Recovery.

Guidelines:

- Develop effective and efficient response and recovery plans for all identified hazards and risks.
  - Adopt SOP's and contingency plans of the District Municipality.
  - Adopt generic checklist of the District Municipality.
  - Compile a complete resource database for the Local Municipality.
  - Minimum requirements available to the disaster management component at local municipal level.
  - Media liaison plan.
- Regular exercising to respond effectively to any potential disaster.

KPA IV: Awareness, Education, Training and Research.

Guidelines:

- Continuously execute public awareness campaigns to promote a culture of risk avoidance among communities, stakeholders and role players.
- Disseminate disaster information to communities at risk.
- Regular liaison with media to ensure positive media coverage and publicity to increase public awareness.
- Regularly updating of training programmes.
- Identify disaster related problems to execute research programmes to alleviate potential disaster risks.

KPA V: Monitoring, Evaluation and Improvement.

Guidelines:

- Monitor and co-ordinate the implementation of proposed risk reduction projects and programmes.
- Annually evaluate the effectiveness of risk reduction measures.
- Annually evaluate the disaster management plan, make changes where necessary to improve the effectiveness of the plan.

Proposed outlay of the disaster management plan

1. Introduction
2. Study area
   2.1. Geographic
   2.2. Demographic
3. Legislation
   3.1. Disaster Management
   3.2. Other related legislation
4. Disaster Management Framework
5. Disaster Risk Plan
   5.1. Disaster Risk Assessment (Stage 1 to Stage 3)
      5.1.1. Hazard identification
      5.1.2. Hazard profile
      5.1.3. Vulnerability assessment
      5.1.4. Vulnerability profile
      5.1.5. Risk assessment
      5.1.6. Risk profile
   5.2. Risk and vulnerability profile
6. Disaster Risk Reduction Plan
   6.1. Risk management
   6.2. Risk reduction strategies
   6.3. Disaster risk projects, plans and programmes
   6.4. Including risk reduction in other structures and processes
   6.5. Implementing disaster risk reduction strategies
7. Disaster Response and Recovery Plans
   7.1. Standing Operating Procedures (SOP's)
   7.2. Checklists
   7.3. Resource database
   7.4. Media Liaison
   7.5. Guidelines for mutual aid agreements
   7.6. Essential Information
8. Establishment of a District Disaster Management Centre (DDMC)
   8.1. Purpose of DDMC
   8.2. Main responsibilities of the DDMC
   8.3. Facilities and equipment available at DDMC
   8.4. Essential records and data to be maintained by the centre
   8.5. Equipment available at "satellite" disaster management centre
   8.6. Establish a disaster management information system
   8.7. Placement of the DDMC and satellite facilities
   8.8. Establishing of a mobile disaster management facility
   8.9. Guidelines to establish the Disaster Management Advisory Forum
   8.10. Guidelines to establish a Disaster Management Volunteer Contingent
9. Disaster Management Action Plan
   9.1. Implementing the Disaster Management Plan
   9.2. Disaster Management Action Plan

Appendix C:
Disaster Management Action Plan for FBDM.

Projects	Objectives	Activities	Outcomes
1. District Disaster Management Centre (DDMC)	To establish a District Disaster Management Centre	Allocate sufficient office space	A Disaster Management Centre
		Determine location of DDMC	
		Liaise with local municipalities	
		Allocate sufficient funds to establish DDMC	
2. Disaster Management Organisation, Forums and Committees	To establish a Disaster Management Advisory Forum (DMAF) to function as a **strategic** body	Identify all stakeholders and role-players	Formal Disaster Management Organisation
	To establish a District Inter-departmental Disaster Management Committee (DIDMC) to function as a district **tactical** body at District level	Establish forums and committees	
	To establish a Municipal Disaster Management Advisory Committee / Forum (MDMAC) to function as an **operational** body	Hold regular meetings to implement the DMP	
3. Disaster Management Structure	To establish and approve the proposed Disaster Management Structure for FBDM	Appoint the Executive Mayor / Municipal Manager as Chief of Disaster Management	
		Appoint at least a Head of the Disaster Management Centre	Formal Disaster Management Structure

4. Disaster Management Volunteers	To establish a Disaster Management Volunteer Contingent	Executing a needs assessment for Volunteers	Well trained volunteer contingent which will be operational in both proactive and reactive measures.
		Identify people to be trained	
		Compilation of training material	
		Training of identified people	
		Exercising on regular basis	
5. Reactive Plans	To compile appropriate mutual aid agreements with stakeholders	Identify role-players and stakeholders	Updated Disaster Management Reactive Plans
		Compile and sign mutual agreements between FBDM, Provincial and local municipalities	
	To hold theoretical and practical exercises at pre-determined intervals.	Identify appropriate training needs and programmes	
		Revise and update training programmes	
	To compile a comprehensive file on the history of disasters that have occurred	Identify archives	
		Compile standardised proforma	
		Store information	

6. Pro-active Plans	To annually review and update all potential hazards and risks in FBDM	Workshop with local communities	Updated Disaster Management proactive Plans
		Update identified hazards	
		Update GIS-maps	
		Update communities at risk	
		Align with Spatial Development Plan and IDP	
		Agree on information on development, prevention, mitigation, preparedness and awareness projects; for submission to Disaster Management in order to be aware of such projects and to be able to monitor progress.	
		Annually re-assess risk reduction projects scheduled for future implementation, for budgeting purposes.	
		Determine primary and secondary roles for identified role players and line departments	
		Approve primary and secondary roles and responsibilities of role players. Register KPA's of line departments in their job description.	

7. Utilization of Modern Technology	To install Disaster Management Software	Identify appropriate disaster management software	Disaster Management Decision Support Tool
		Install software on identified computer	
		Transfer of all disaster information to software	
		Identify and train personnel / staff	
8. Public Relations	To promote public relations as part of risk reduction programmes	Invite the public to visit Disaster Management facilities	Awareness campaigns as part of disaster risk reduction
		Develop a standardised introductory lecture, to inform the general public on what disaster management is and aims to be achieved.	
		Disseminate sensitive Disaster Management information to vulnerable communities.	
		Develop pamphlets as part of public awareness campaigns	
9. Disaster Risk Reduction	To implement disaster risk reduction measure in FBDM area of jurisdiction	Organise a DMAF meeting	Disaster Risk Reduction Plans, Projects and Programmes
		Workshop proposed disaster risk reduction strategies	
		Facilitate the compilation of separate hazard, vulnerability and risk assessment reports for each local municipality.	

		Formulate appropriate disaster risk reduction projects for each local municipality.	
		Align risk reduction plans and project with spatial development plan and IDP.	
		Budgeting for each risk reduction plan.	
		Facilitate the implementing of risk reduction measures in FBDM area of jurisdiction	