

## **ANNEXES**

- I. Vulnerability Analysis: Preliminary Prioritisation of Vulnerable Communities for Climate Change Adaptation in the uMgungundlovu District Municipality.**
- II. Stakeholder Consultations**
  - Annex II.1 Organisations consulted during the project development period.
  - Annex II.2: Attendance register for meeting to plan Inception Workshop.
  - Annex II.3: Attendance register for Inception Workshop.
  - Annex II.4: Attendance register for workshop to plan field visit itinerary.
  - Annex II.5: Field visit itinerary to identify project interventions sites.
  - Annex II.6: Attendance register for technical agriculture workshop.
  - Annex II.7: Attendance register for built environment and ecological infrastructure workshop.
  - Annex II.8: Attendance register for technical EWS workshop.
  - Annex II.9: List of meetings from 18-22 November 2013.
  - Annex II.10: List of meetings from 6-10 January 2014.
  - Annex II.11: List of meetings from 27-29 January 2014.
  - Annex II.12: List of meetings from 17-18 March 2014.
  - Annex II.12.1: Attendance register from Management Committee meeting.
  - Annex II.12.2: Attendance register from Disaster Management Forum meeting.
  - Annex II.12.3: Attendance register from fire component meeting.
  - Annex II.13: Attendance register from UMDM/DAEA meeting.
  - Annex II.14: Attendance register from DAEA meeting.
  - Annex II.15: Attendance register CoGTA meeting.
  - Annex II.16: Attendance register from Msunduzi Local Municipality meeting.
- III. Maps of the demonstration sites for the Adaptation Fund project.**
  - Figure III.1: Ward 8 of Vulindlela showing position of households and traditional communities (2011).
  - Figure III.2: Ward 8 of Swayimane showing position of households and traditional communities (2011).
  - Figure III.3: Ward 5 of Nhlazuka showing position of households and traditional communities (2011).
- IV. Endorsement Letters**
  - Annex IV.1: Letter of Endorsement from uMgungundlovu District Municipality.
  - Annex IV.2: Letter of Endorsement from Vulindlela Ward 8 local authorities.
  - Annex IV.3: Letter of Endorsement from Swayimane Ward 8 local authorities.
  - Annex IV.4: Letter of Endorsement from Nhlazuka Ward 5 local authorities.
  - Annex IV.5: Letter of Endorsement from Vulindlela Ward 8 traditional authorities.
  - Annex IV.6: Letter of Endorsement from Swayimane Ward 8 traditional authorities.
  - Annex IV.7: Letter of Endorsement from Nhlazuka Ward 5 traditional authorities.
  - Annex IV.8: Letter of Endorsement from KZN Provincial Fire Protection Association.
  - Annex IV.9: Letter of Endorsement from Lions River Fire Protection Association.
  - Annex IV.10: Letter of Endorsement from Richmond Fire Protection Association.
  - Annex IV.11: Letter of Endorsement from Working on Fire.
  - Annex IV.12: Letter of Endorsement from UKZN School of Agriculture, Earth and Environmental Science.
  - Annex IV.13: Letter of Endorsement from LIMA Rural Development Foundation.
  - Annex IV.14: Letter of Endorsement from Built Environment Support Group.
  - Annex IV.15: Letter of Endorsement from Umgeni Water.
- V. uMgeni Resilience Project Environmental and Social Risk Management Plan.**

**DATE** 06 May 2013

**PROJECT No.** 11615957\_Memo\_001\_Rev 1

**TO** Riaz Jogiat  
uMgungundlovu District Municipality

**CC** Catherine Hughes, Kevan Zunckel, Karen Zunckel, Roland Schulze

**FROM** Candice Allan

**EMAIL** caallan@golder.co.za

## **Annex I: Preliminary Prioritisation of Vulnerable Communities for Climate Change Adaptation in the uMgungundlovu District Municipality**

### **1.0 INTRODUCTION**

Golder Associates Africa (Pty.) Ltd. (Golder), in collaboration with Zunckel Ecological and Environmental Services and the University of KwaZulu-Natal, were requested by the uMgungundlovu District Municipality (UMDM) to undertake a preliminary prioritisation of vulnerable communities within the District, in support of the South African National Biodiversity Institute (SANBI) proposal to the Global Adaptation Fund. The assistance of the Duzi uMngeni Conservation Trust (DUCT) was also sought with regard to the ground-truthing of preliminary findings, and they are acknowledged for their assistance with this exercise.

### **1.1 Project background**

During the last two years, the UMDM has commissioned the development of a Strategic Environmental Assessment and Management Plan, as well as a process to develop a Climate Change Response Strategy and Plan for the District. As a result of this work, it has become increasingly clear that the level of socio-economic vulnerability in the District is extremely high, and this is exacerbated by the poor condition of the District's natural capital. Furthermore, this level of vulnerability is likely to increase under projected climate changes. In response to the call for proposals for grant funding from the Global Adaptation Fund, the UMDM called their service providers and other relevant stakeholders together to collaborate on a joint proposal for a project which will promote adaptation and climate change resilience in the District.

The key outcomes of the proposed project are as follows:

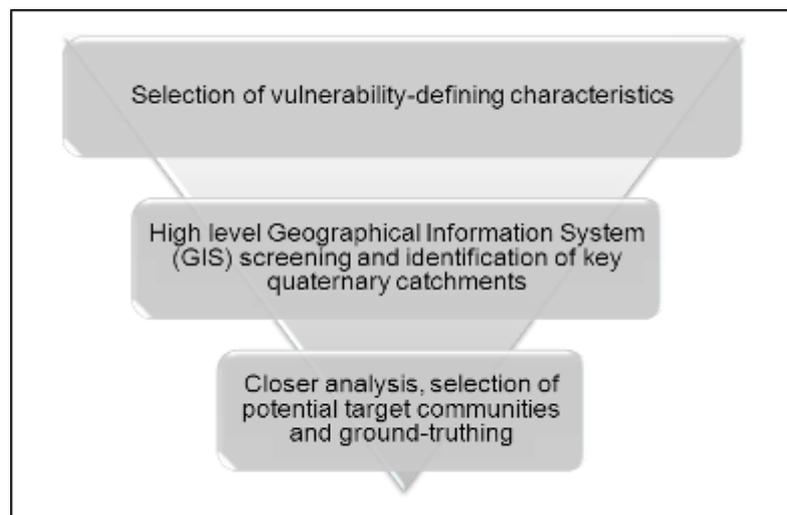
- Integration of adaptation planning into development, economic and environmental planning processes;
- Creation and demonstration of a new planning model for the District which allows for integration of major challenges related to the above processes at a local/district government level, with vertical and horizontal linkages to other levels of state and local partners;
- Creation of an Early Warning System for extreme weather events and transformation of municipal disaster *response* units into disaster risk *reduction* units;
- Introduction and communication of feasible initial adaptation activities for small and subsistence farming;
- Introduction of practical initial ecosystem-based adaptation activities that aim to reduce the vulnerability of communities and can assist in creating sustainable livelihoods; and
- Creation of an enabling environment for basic service infrastructure, which aims for climate-resilient design, manufacture, construction and operation. This outcome should also allow for awareness creation around climate change issues amongst residents of the District, especially the most vulnerable. Finally, strong monitoring and evaluation processes will be designed to improve on infrastructure performance.



To date, the proposal put forward by the UMDM and its partners has been accepted by SANBI, which is the National Implementing Entity for the Global Adaptation Fund in South Africa. SANBI has requested further engagement with the UMDM and its partners to develop the proposal further. The first step in the project process, which will be discussed with SANBI on 10 April 2013, was to perform a high level analysis to identify key vulnerable communities which would form the initial case studies for the project. This process is described below.

## 2.0 APPROACH

The approach to the prioritisation of the vulnerable communities to be targeted for this project was designed to refine the selection process, as seen in Figure 1.



*Figure 1: Approach to the prioritisation of vulnerable communities*

### 2.1 Step 1: Selection of vulnerability-defining characteristics

The vulnerability-defining characteristics were selected based on the required outcomes of the project. Target vulnerable communities would therefore display the following characteristics:

- Transformed areas vulnerable to increased runoff due to hardened surfaces and lack of basal cover;
- Degraded, upstream areas available for rehabilitation, with the potential for downstream impacts;
- Mean annual rainfall in recognition of the rainfall variability across the District and the need to prioritise quaternary catchments draining high rainfall areas;
- Communities reliant on boreholes, springs, dams, water tanks, rainfall and rivers for water supply;
- Communities engaged in subsistence agricultural activities;
- Areas known to have a high frequency of flooding and storm events; and
- Areas projected to receive increased short duration rainfall (associated with flash flooding) in the future.

### 2.2 Step 2: GIS screening and identification of key quaternary catchments

Features representing the vulnerability-defining characteristics were mapped using a Geographical Information System (ArcGIS) in order to determine the extent to which communities within the UMDM met the set characteristics, and to facilitate the prioritisation process. Quaternary catchments were used as planning units in which the target communities would be identified (Section 0).

### **Step 3: Selection of target communities**

Once key quaternary catchments were identified, communities within these catchments were prioritised based on a focused situational analysis which included consultation with the Duzi Umgeni Conservation Trust (DUCT) currently undertaking community-based projects in the UMDM, and a site visit for ground-truthing purposes (Section 0).

## **3.0 GIS SCREENING AND IDENTIFICATION OF KEY QUATERNARY CATCHMENTS**

The GIS screening process and identification of catchments is described in this section.

### **3.1 Watershed service potential**

On the basis of work that was carried out for the KwaZulu-Natal Department of Economic Development and Tourism in which the contribution of natural capital to the economy was determined (DEDT, 2012), the 47 land cover types of the province were interpreted in terms of their capacity to deliver ecosystem goods and services. During this exercise, which was carried out in collaboration with ecologists from Ezemvelo KZN Wildlife, each land cover type was allocated an ecosystem services potential score that ranged from the land cover retaining its optimal potential to deliver, i.e. +3; through to the worst case scenario, being a complete loss of potential as well as severe externalities, i.e. -3. These externalities may also be viewed as being 'dis-services'.

For the sake of the current, preliminary assessment, the overall ecosystem service potential scores were revised so as to reflect an interpretation based only on the delivery of watershed services, i.e. the interpretation focused on the potential of each land cover type to receive rainfall, allow for optimal infiltration and recharge of the water table, while retaining top soil and attenuating runoff.

The outcome of this exercise is illustrated in Figure 2, in which the watershed service potential scores have been superimposed on to the land cover types. From this figure it can be seen that approximately 50% of the surface area of the UMDM remains untransformed. The other 50% of the surface area that has been transformed is primarily under an agricultural footprint, i.e. close to 40%, while the remainder is under what can be broadly classified as 'settlement'. This implies that almost 50% of the UMDM surface area has lost its ability to deliver watershed services, and is therefore contributing to rainfall-related externalities such as accelerated runoff and increased flood risk, as well as decreased dry season baseflow and therefore the loss of dilution capacity and decreased water quality.

The 50% of the UMDM surface area that remains under natural land cover types is degraded to various degrees. The 2008 land cover data (EKZNW, 2010) suggests that almost 5% of the untransformed surface area can be considered to be degraded. However, it is evident that there is very little to none of the untransformed land surface that has retained optimum watershed service potential, and that the majority of this cover is degraded to some degree. This degradation is most evident in the higher altitude areas of the UMDM, which are under grasslands due to a combination of poor range management leading to a loss of grassland vigour, as well as infestations of invasive alien plants. Infrastructure such as roads and railway lines, in many instances, contribute to the development of erosion gullies.

This interpretation of the land cover of the UMDM provides a clear indication of the level of land vulnerability under current climatic conditions. With regard to adaptation, it provides an indication of where restoration of natural land cover is required, and where the integration of ecological infrastructure is required in the areas of transformation. More detail on these factors is provided in Section 0.

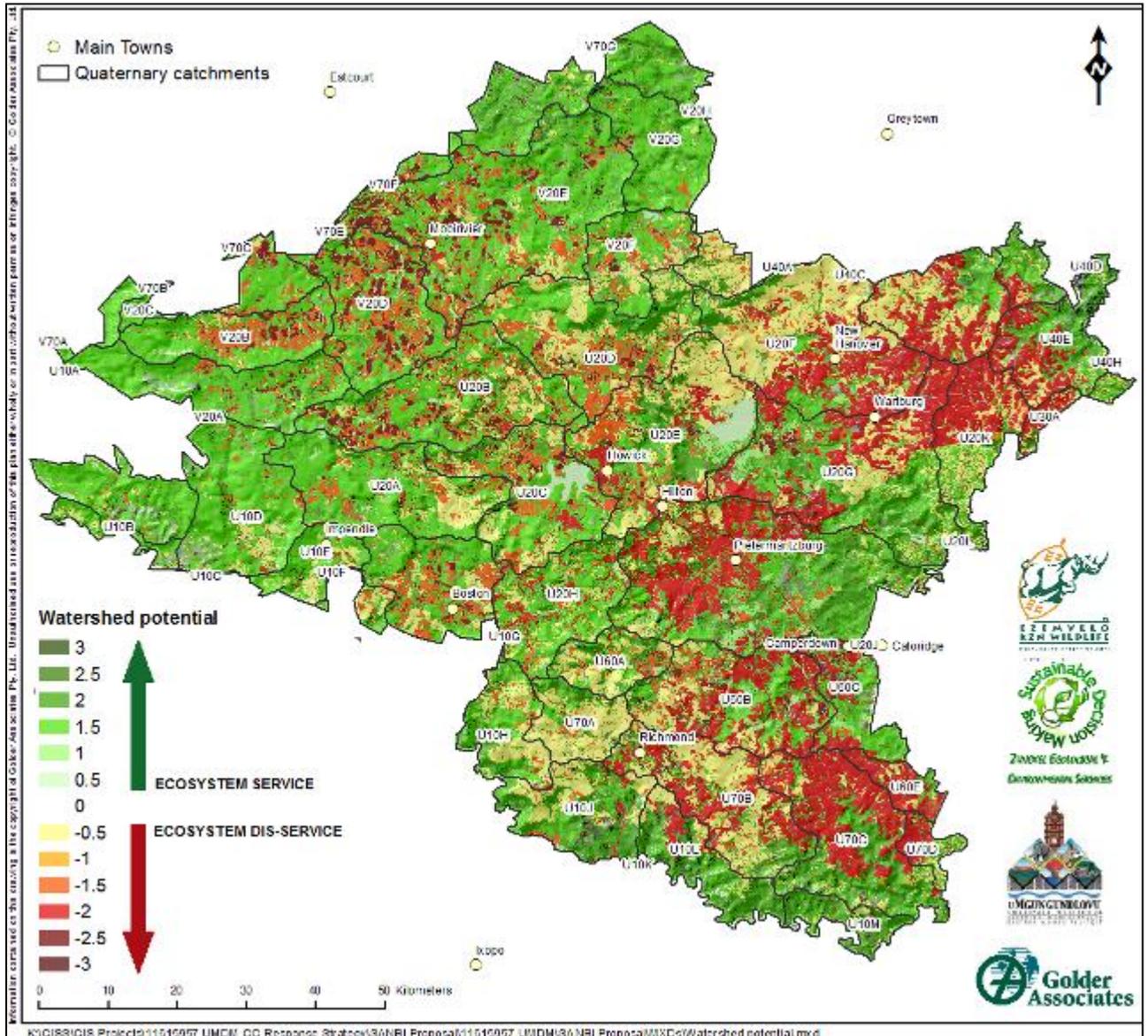


Figure 2: Watershed potential to deliver ecosystems goods and services (based on the Ezemvelo KZN Wildlife 2008 land cover dataset)

The spatial representation of transformation and degradation within the UMDM are shown in the following two sections.

**3.1.1 Transformation**

Varying levels of transformation within the quaternary catchments of the UMDM are represented spatially in Figure 3. The levels of transformation were determined based on the comparative coverage of ecosystem dis-service within the quaternary catchments.

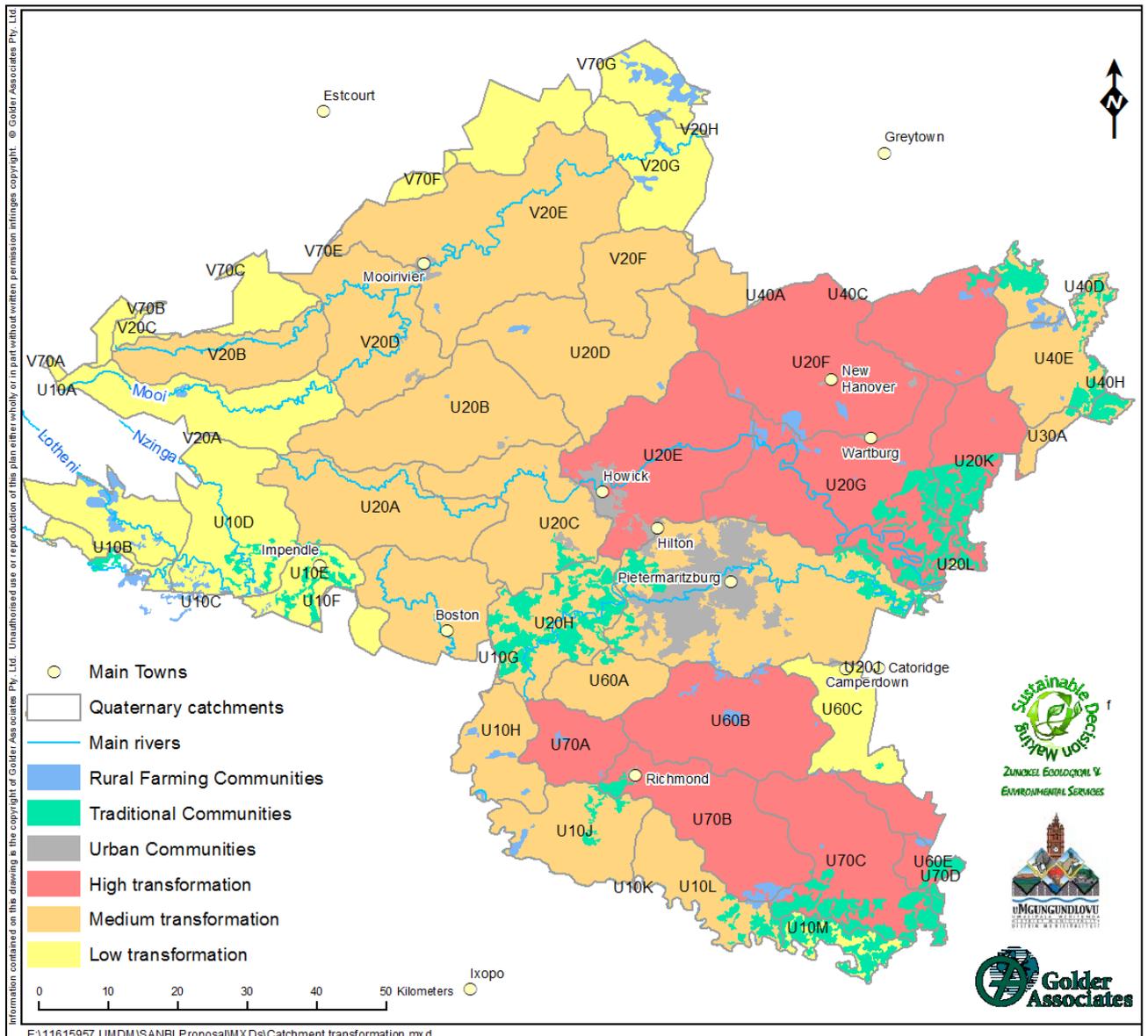


Figure 3: Quaternary catchment transformation

### 3.1.2 Degradation

The presence of erosion gullies as provided by the national Department of Agriculture, Forestry and Fisheries (DAFF, 2011) were used as an indicator of land degradation. Quaternary catchments displaying degradation are highlighted in Figure 4. High levels of degradation are noted in the north-eastern catchments feeding the Mooi River and in the south-western catchments feeding the Mkomazi River (specifically in the vicinity of Lower Loteni and Impendle).

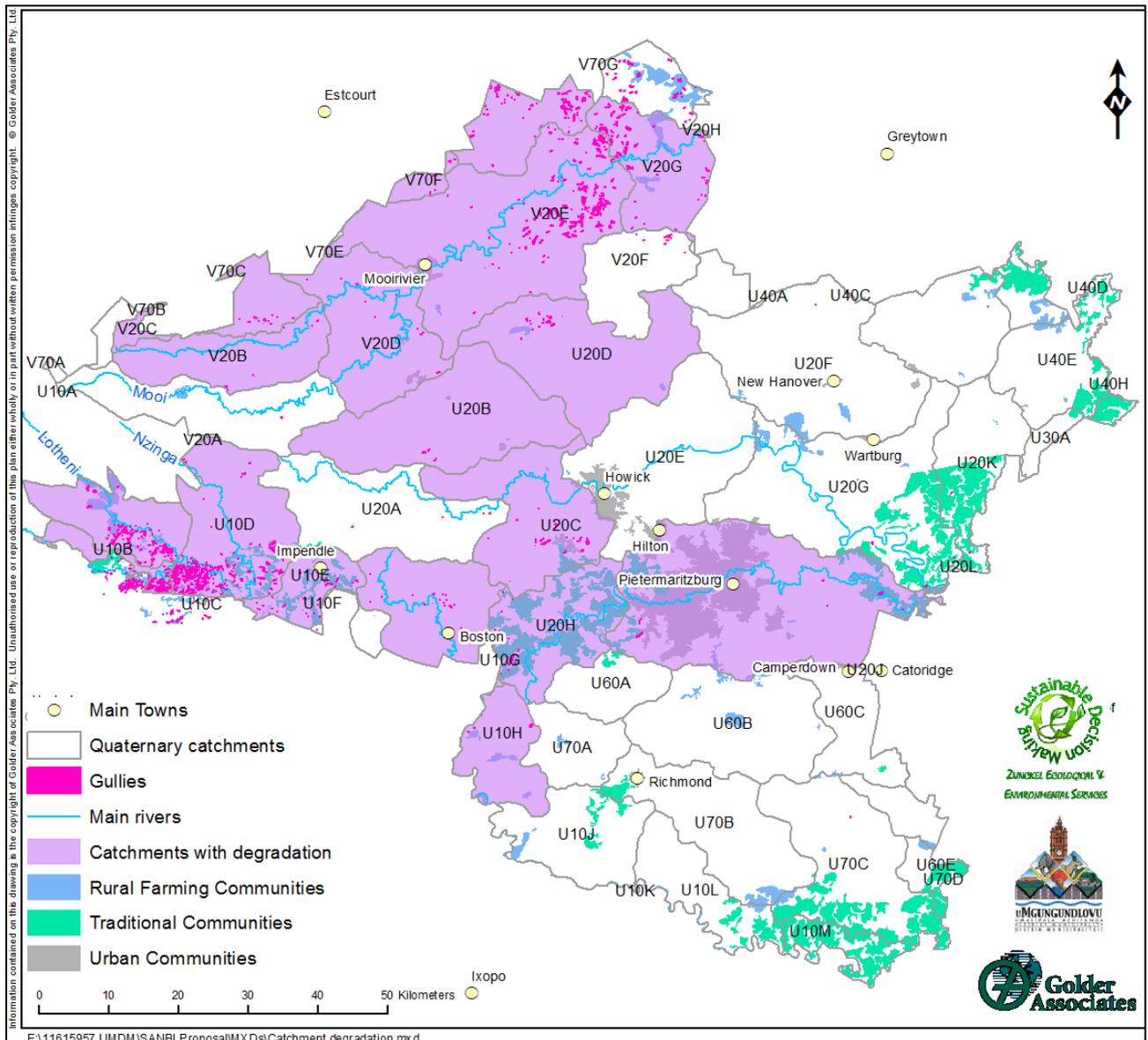


Figure 4: Quaternary catchment degradation

### 3.2 Settlements and subsistence agriculture

Subsistence agriculture within the UMDM was identified with the use of the 2008 Ezemvelo KZN Wildlife land cover dataset. Concentrated pockets of communities undertaking subsistence agriculture activities within the UMDM are highlighted in Figure 5. It must be noted that there is a strong correlation between subsistence agriculture and land tenure, in that the former occurs most abundantly in areas that are under communal land tenure. The bulk of the remaining UMDM agriculture is commercial, and on land under private land tenure. Subsistence farmers are highly vulnerable to climate change as their crops are highly reliant on natural resources and weather patterns.

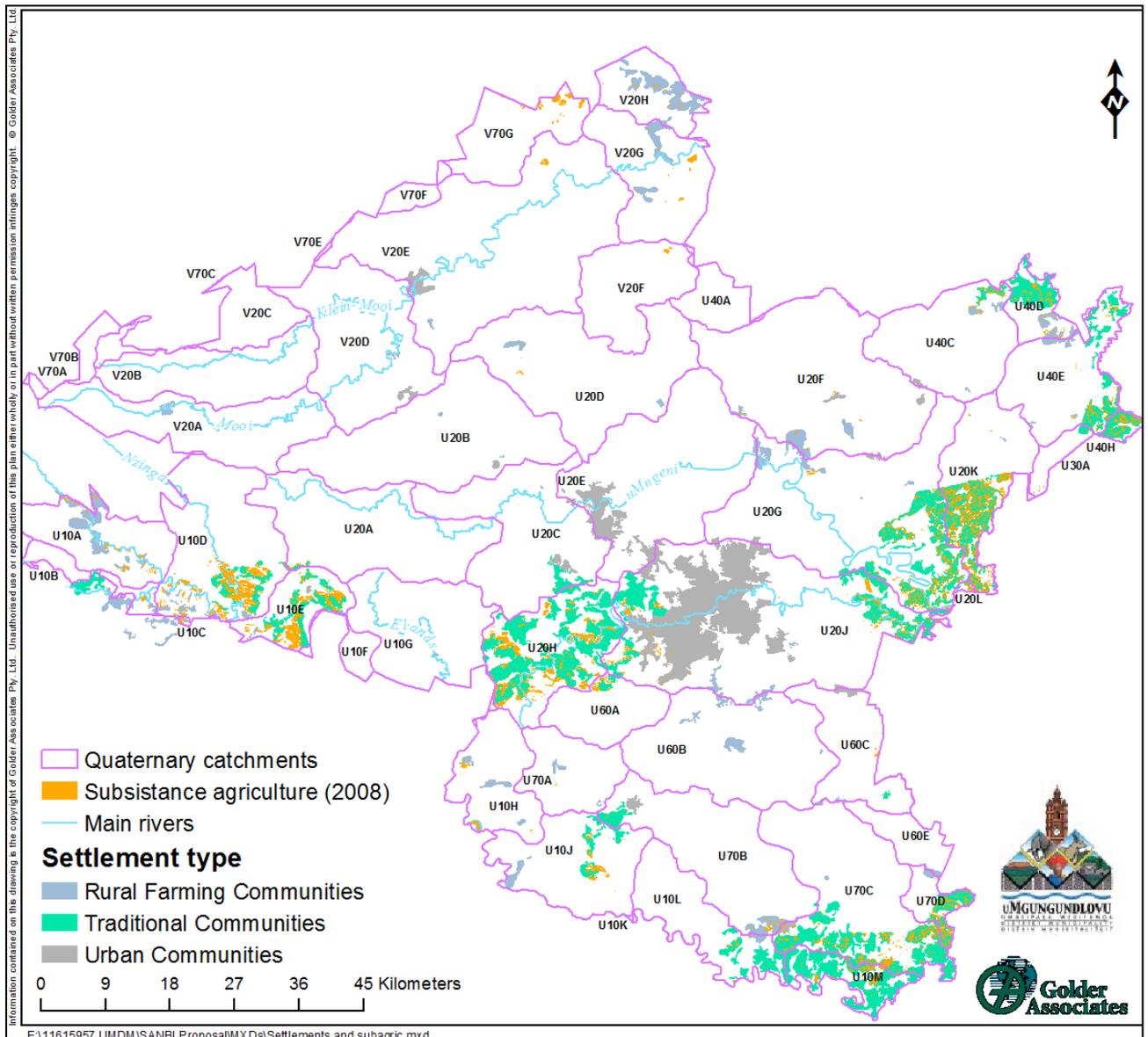


Figure 5: Settlements and subsistence agriculture in the UMDM

### 3.3 Access to water and sanitation

Access to water and sanitation for communities within the UMDM was determined with the use of Statistics South Africa (StatsSA) Census 2011 data for water use, supplied at a ward level. This data was represented spatially as the percentage of the ward’s population which is reliant on boreholes, springs, dams, water tanks, rainfall and rivers as their primary water source (Figure 6) and the percentage of wards with no access to water-borne sewage (Figure 7). The reason for inclusion of these factors is the assumption that where there is a lack of water and sanitation services, communities will be dependent on direct abstraction from run of river, and thus experience greater levels of vulnerability, particularly in terms of water quality considerations. Lack of access to sanitation services may also imply an increased risk of poor water quality. However, this is only likely to be relevant where the concentrations of people using other means of sanitation, such as pit latrines, are sufficiently high enough to exceed the natural capacity of the receiving environment to process the waste. An additional consideration is that areas with the greatest access to

sanitation services pose a greater water quality risk to downstream communities, due to the potential failure of municipal waste water treatment facilities.

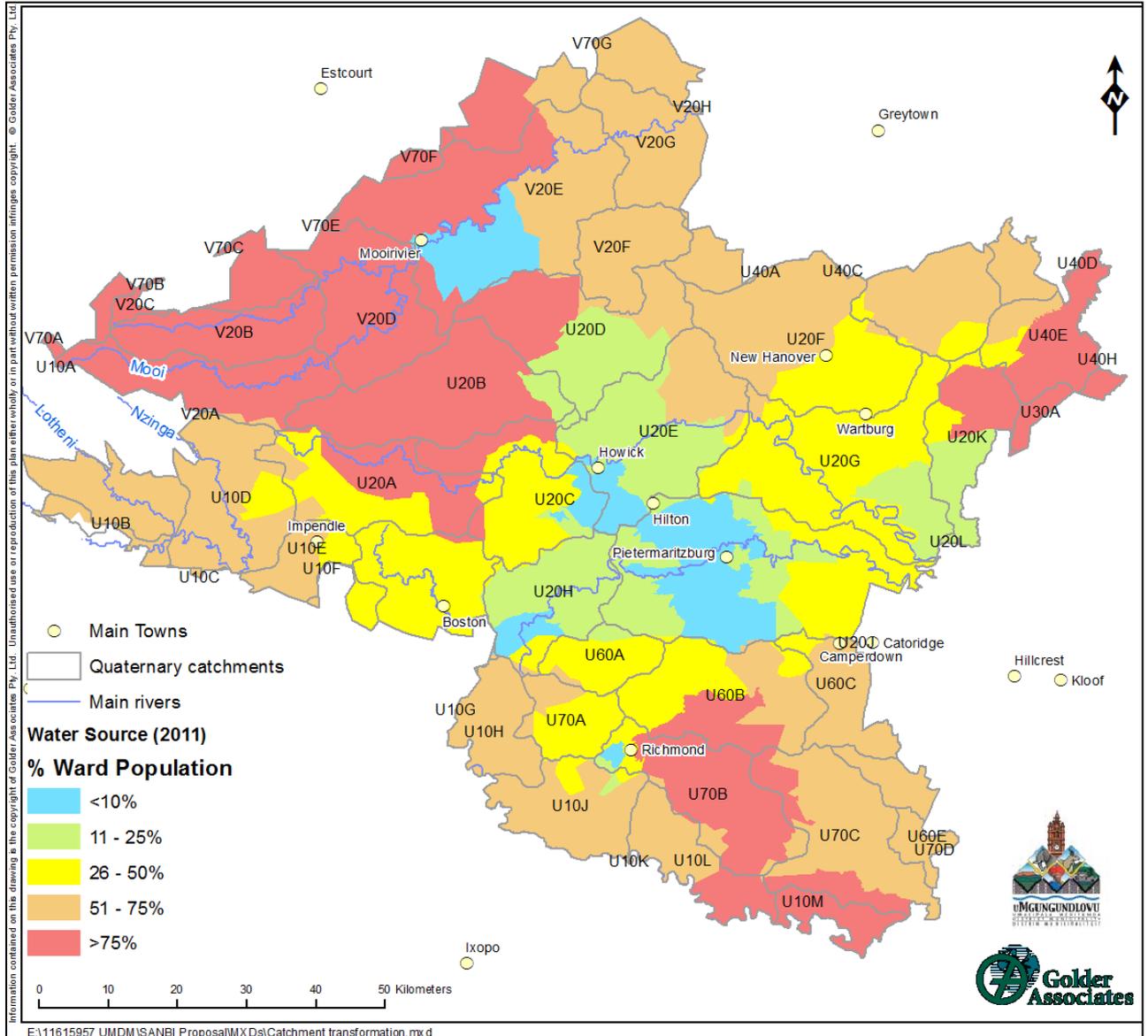
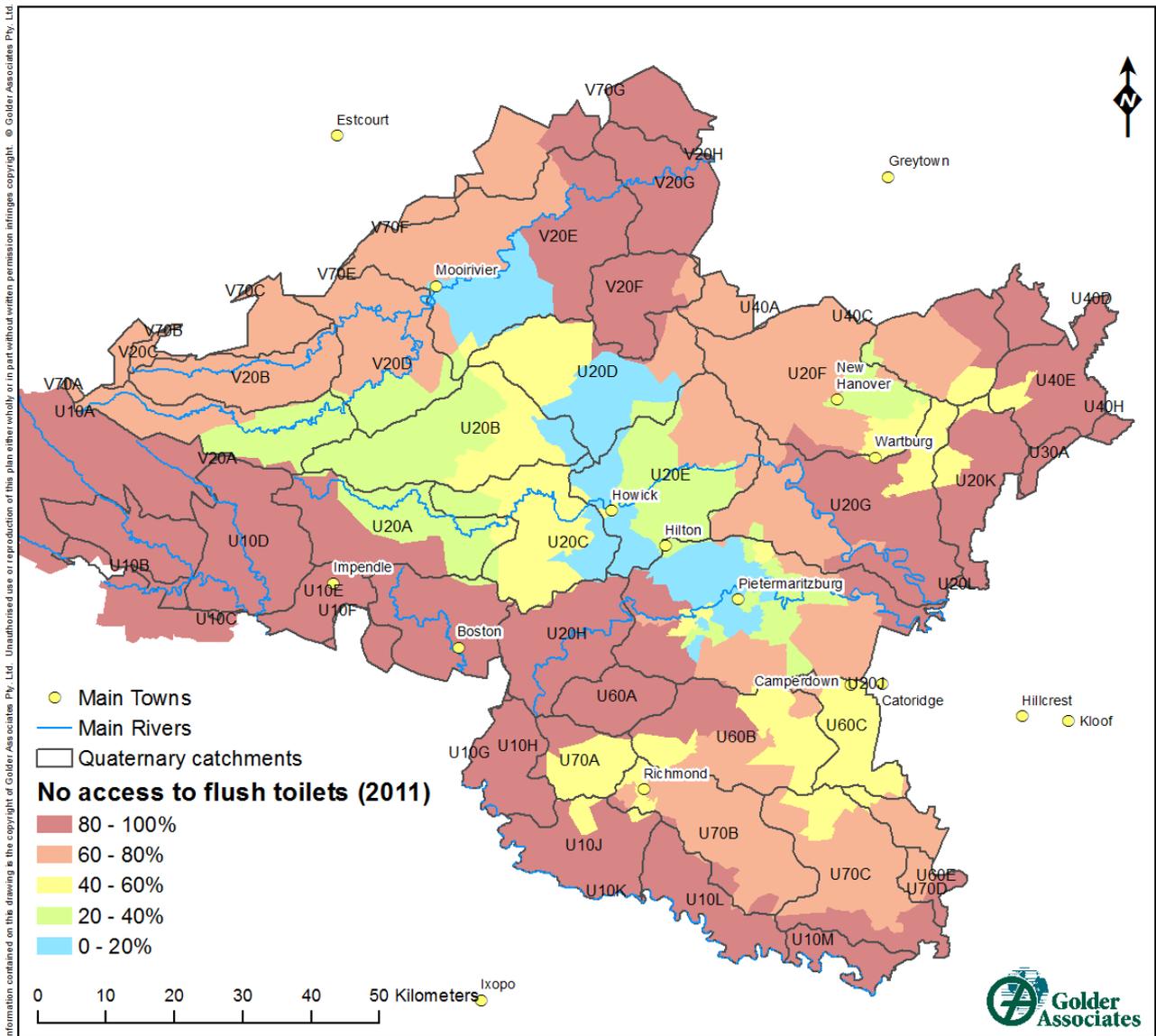


Figure 6: The percentage of the ward's population reliant on boreholes, springs, dams, water tanks, rainfall and rivers for water supply (extracted from the 2011 StatsSA census data)



K:\GISS\GIS Projects\11615957 UMDM CC Response Strategy\SANBI Proposal\11615957 UMDM\SANBI Proposal\MXD\SANITATION access.nxd

Figure 7: The percentage of the ward's population with no access to water-borne sewage (extracted from the 2011 STATSSA census data)

### 3.4 Current rainfall conditions

The historical mean annual rainfall spatial dataset was provided by the School of Bioresource Engineering and Environmental Hydrology at the University of KwaZulu-Natal. Considering the current degraded state of the UMDM's land cover in terms of delivering watershed services, it was considered necessary to include this data layer as an indication of the current levels of vulnerability to rainfall-related risk, with the assumption being that the greater the mean annual rainfall, the greater the risk. It must be noted however that mean annual rainfall is not the best measure of risk as it is more the manner in which the rain falls that will determine the level of risk.

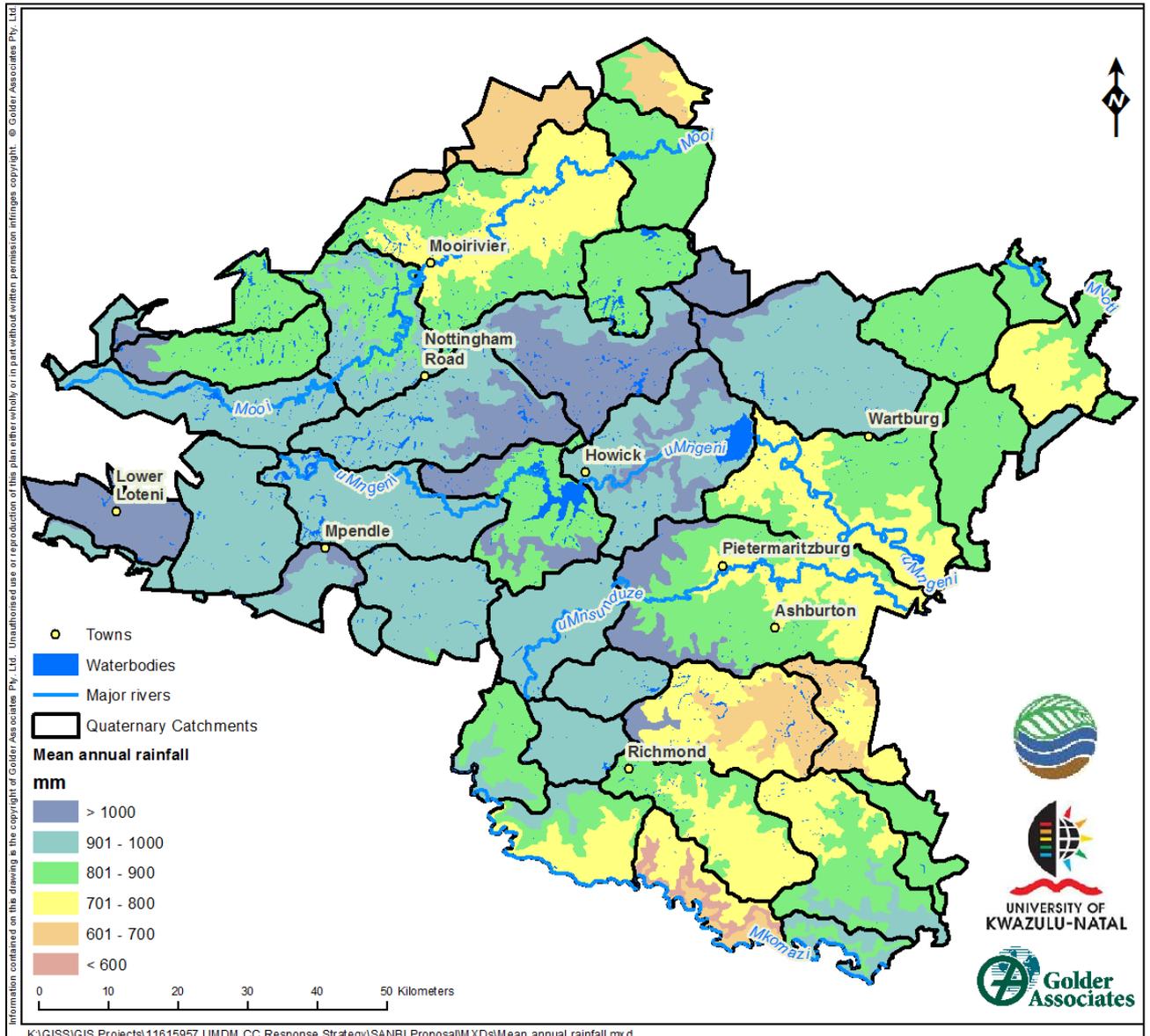


Figure 8: Historical mean annual rainfall for the UMDM

### 3.5 Disaster management

Areas that are known to have experienced a high frequency of flooding and storm events in the UMDM are presented in Figure 9. This information was compiled based on spatial disaster records supplied by the Co-operative Governance and Traditional Authority (COGTA), supplemented with records noted in the UMDM Disaster Management Plan (2012).

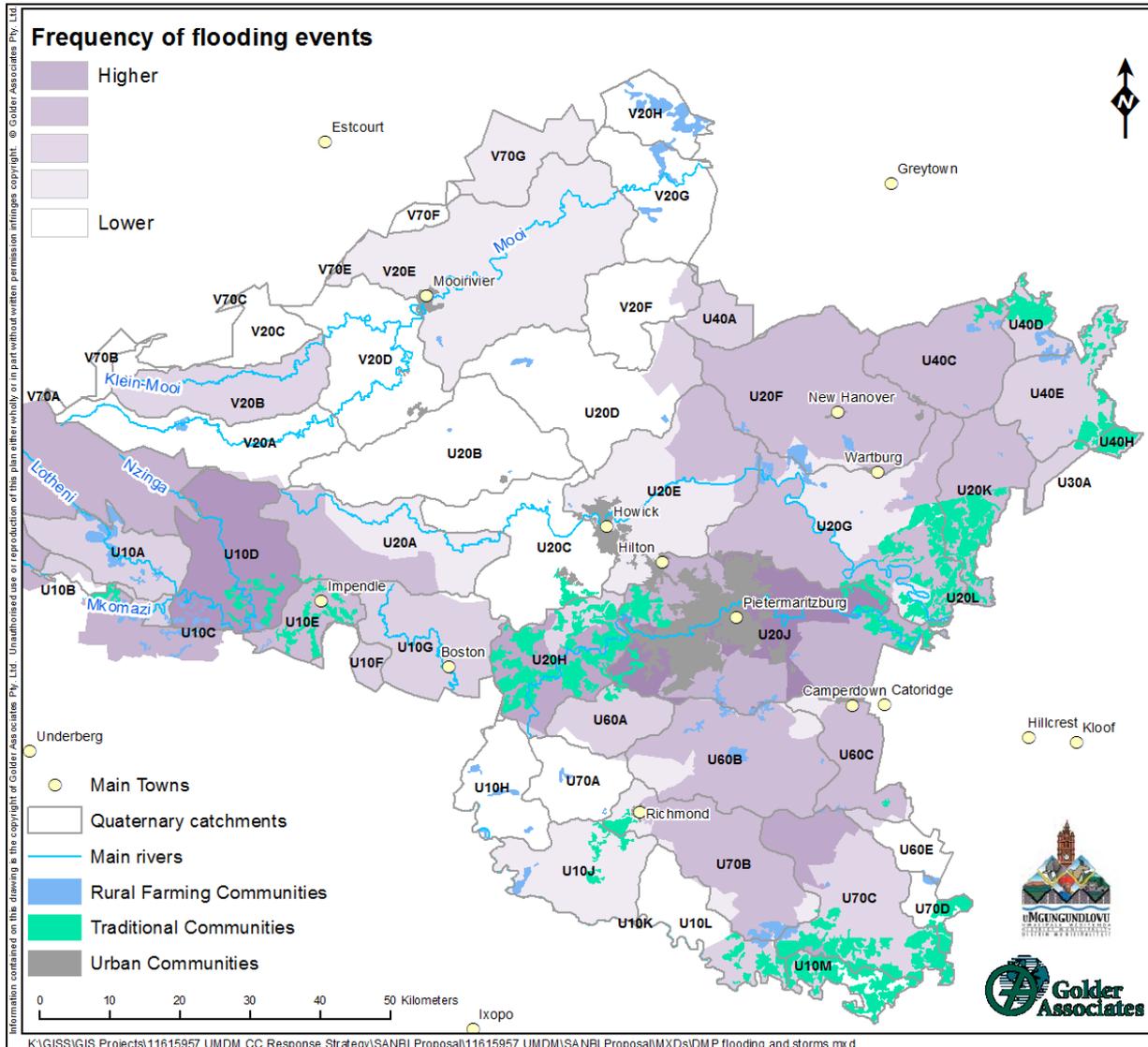


Figure 9: Wards recorded to experience a high frequency of flooding and storm events in the UMDM

### 3.6 Climate change projections for short-duration (extreme) rainfall

The data presented in Figure 10 represents the potential changes in short-duration design rainfall (10 min – 24 hour) within a 2 year return period, which is associated with storms and flash flooding. The quinary catchment level climate change projections for the UMDM were developed by the School of BEEH at the University of KwaZulu-Natal, and provided as Geographical Information Systems (GIS) shapefile representations of the ACRU model’s hydrological outputs<sup>1</sup>.

An average of four Global Circulation Models (GCMs) was used in this analysis Table 1.

(i) <sup>1</sup> For more information on the derivation of these models, please see Golder Associates Report Number 11615957-10991-3, *Status Quo Assessment: Climate Trends and Projections*, dated November 2011.

**Table 1: GCMs used for the UMDM climate change projections**

Institute	GCM	Abbreviation in this report
Canadian Center for Climate Modelling and Analysis (CCCma), Canada	<b>Name:</b> CGCM3.1(T47) <b>First published:</b> 2005 <b>Website:</b> <a href="http://www.cccma.bc.ec.gc.ca/models/cgcm3.shtml">http://www.cccma.bc.ec.gc.ca/models/cgcm3.shtml</a>	CCC
Meteo-France / Centre National de Recherches Meteorologiques (CNRM), France	<b>Name:</b> CNRM-CM3 <b>First published:</b> 2004 <b>Website:</b> <a href="http://www.cnrm.meteo.fr/scenario2004/indexenglish.html">http://www.cnrm.meteo.fr/scenario2004/indexenglish.html</a>	CRM
Max Planck Institute for Meteorology (MPI-M), Germany	<b>Name:</b> ECHAM5/MPI-OM <b>First published:</b> 2005 <b>Website:</b> <a href="http://www.mpimet.mpg.de/en/wissenschaft/modelle.html">http://www.mpimet.mpg.de/en/wissenschaft/modelle.html</a>	ECH
Institute Pierre Simon Laplace (IPSL), France	<b>Name:</b> IPSL-CM4 <b>First published:</b> 2005 <b>Website:</b> <a href="http://mc2.ipsl.jussieu.fr/simules.html">http://mc2.ipsl.jussieu.fr/simules.html</a>	IPS

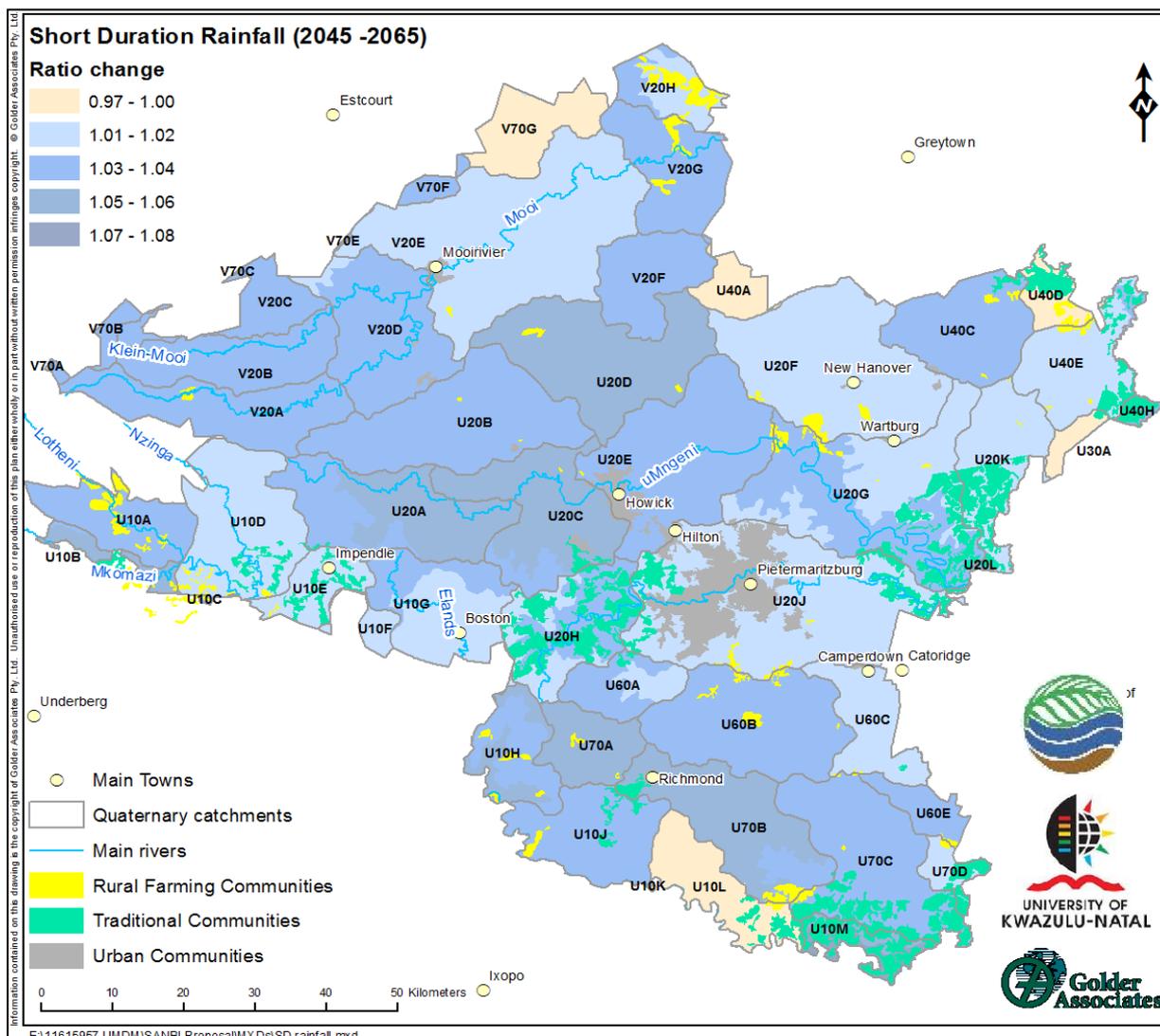


Figure 10: Projected ratio change in short duration rainfall towards the mid-century (2045 - 2065) determined using an average of four GCMs (CCC, CRM, ECH and IPS)

## 4.0 SELECTION OF TARGET COMMUNITIES

With the selection of target communities, it was assumed that the emphasis of the project should be on those communities deemed to be most vulnerable to projected climate change impacts primarily associated with rainfall variability. As such, vulnerabilities are likely to be related to both the increased incidence of flooding and the increased risk of poor water quality associated with reduced dilution capacity as a result of reduced baseflow. An additional consideration is the link between vulnerable communities and untransformed areas which could be rehabilitated to improve their watershed service potential<sup>2</sup>.

### 4.1 Communities vulnerable to flooding

Quaternary catchments U20H and U20J, which encompass the catchment of the Msunduzi River, show the greatest correlations between the variables illustrated in Section 0 and which are illustrated in Figure 11. A more refined assessment of the relationship between these variables is possible, but not within the timeframes of this preliminary assessment. Therefore, the preliminary indications are that the communities that live within close proximity of the Msunduzi River, from Nzondweni in its upper reaches down to Edendale just upstream of Pietermaritzburg, are already vulnerable, and are at risk of an increase in the intensity and frequency of flood events under climate change. This risk is particularly relevant in terms of the loss of homes, belongings and life.

Further downstream, the risk is more relevant to infrastructure, and in this regard it must be noted that there are a number of important crossings that link communities across the Msunduzi River. Recent history has shown that, in particular, the Woodhouse Road low-level bridge adjacent to Sobantu has been the cause of the loss of lives as people attempt to cross during times of flood. The Grimthorpe Road low-level bridge in Lincoln Meade is an important link for the Bishopstowe farming community's direct access to the Pietermaritzburg Central Business District.

---

(ii) <sup>2</sup> Under these assumptions, it should be noted that transformed areas are excluded from selection for this project. It is in these areas however that the integration of ecological infrastructure could assist in reducing vulnerability, but it is assumed that this falls outside of the scope of the Adaptation Fund's aims. If this assumption is incorrect, the selection of target communities could be revised.

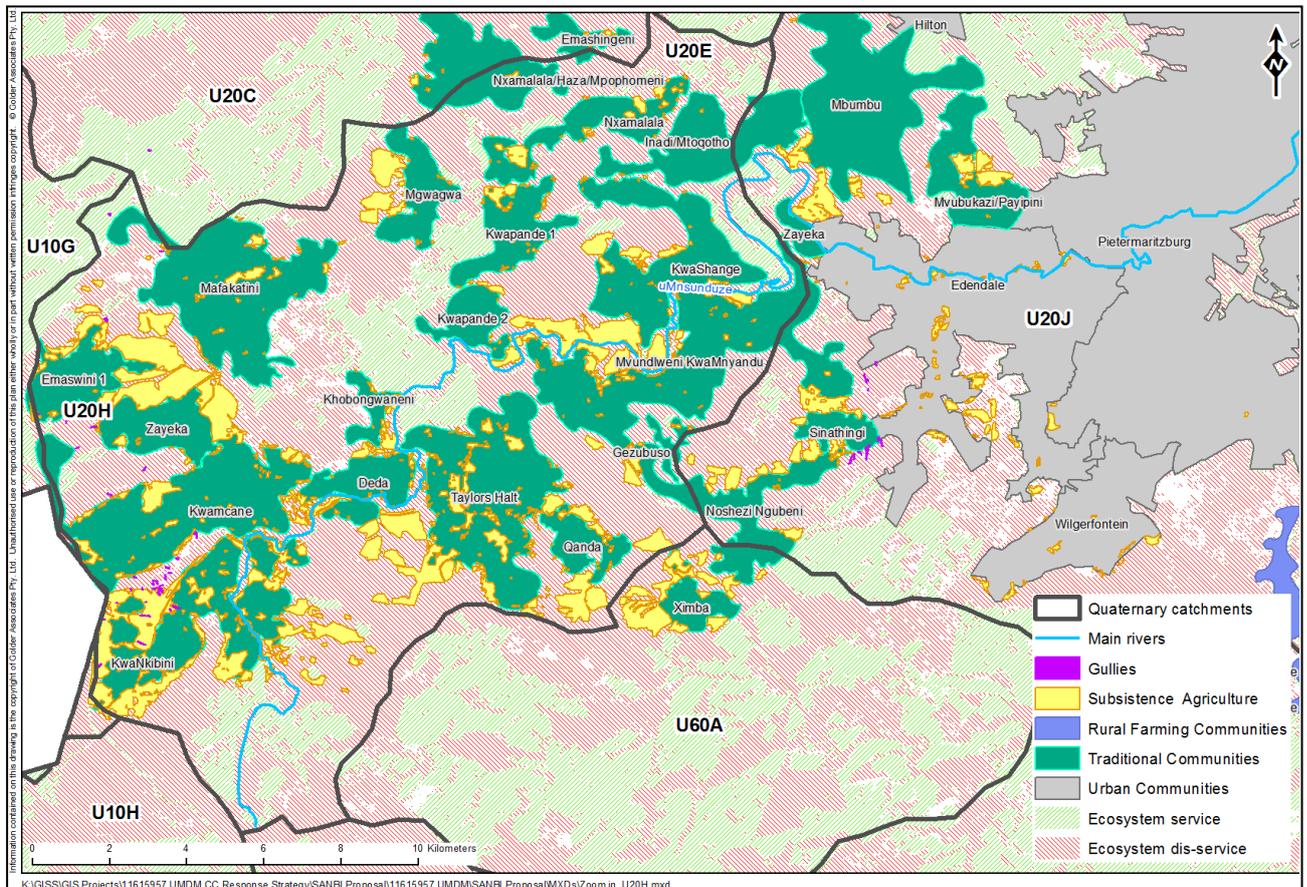


Figure 11: The spatial relationship between various land cover types in the upper and middle sections of the Msunduzi River catchment

While the crossings mentioned above are important as they have a history of vulnerability to flood events, it is also important to note that the N3 crosses the Msunduzi River. While this crossing is a dual carriageway that is relatively high above the surface of the river, flood events of increasing severity could impact on this structure. Considering that the N3 is a strategic economic link between the port city of Durban and Gauteng, such an incident could have drastic consequences for the country's economy.

It is evident therefore that any vulnerability assessment should extend beyond the boundaries of the UMDM in terms of vulnerable communities and the effects that activities within the UMDM can have on adjacent districts. As such, it is important to note that quaternaries U10A, B, D and E, which include the Impendle area and the drainage basins of the Nzinga and Lotheni Rivers which are tributaries of the Mkomazi River, include substantial portions of land that have been transformed and degraded and thus contribute to a risk of flooding and sediment movement to downstream communities that are within the Sisonke District Municipality. These quaternaries and the associated land cover are illustrated in Figure 12.

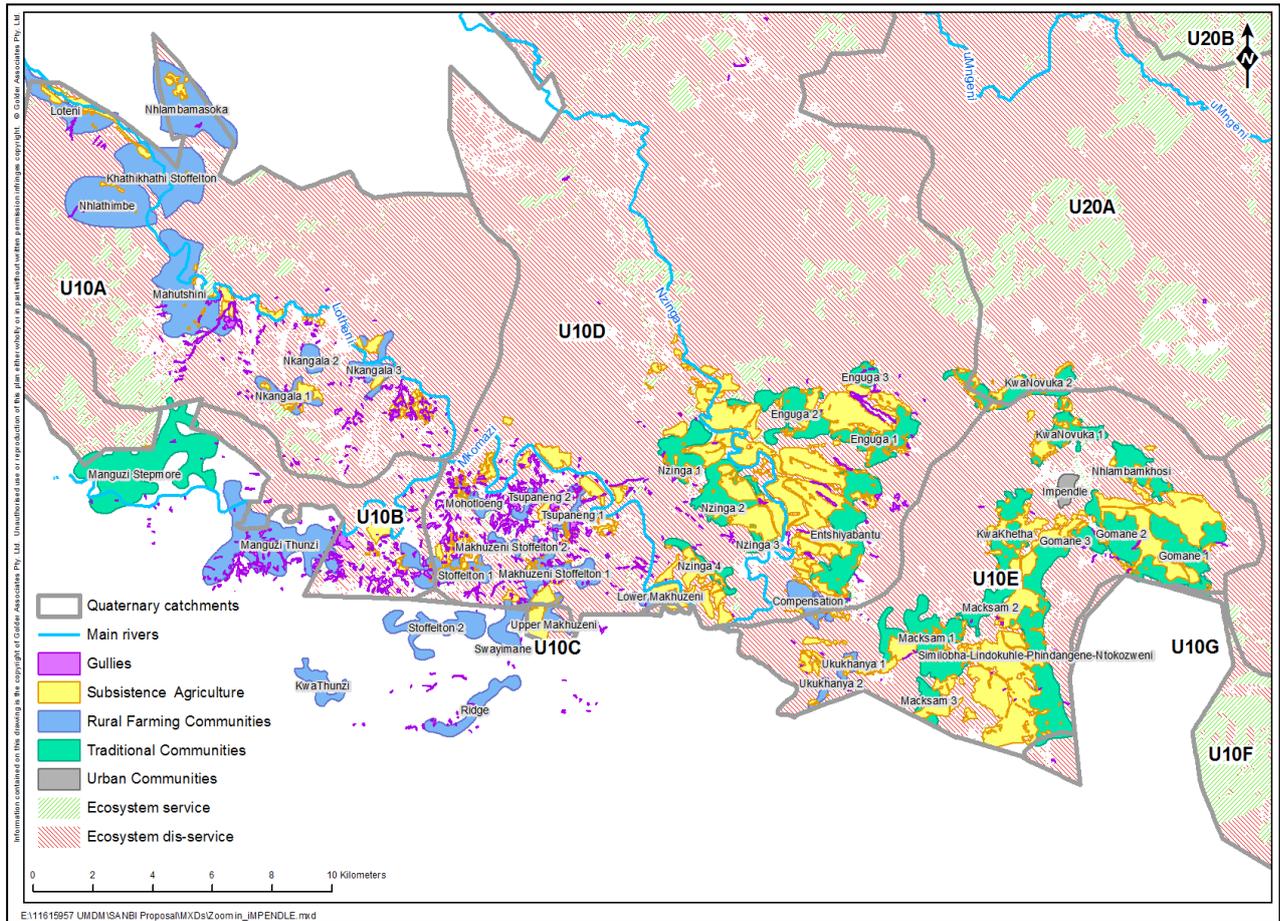


Figure 12: The spatial relationship between various land cover types in the western regions of Impendle

## 4.2 Communities vulnerable to decreased water quality

Communities living within quaternary catchments that have both a high dependence on direct abstraction from run of river for their access to water as well as a low level of access to a water-borne sewerage system should be prioritised as having the greatest level of vulnerability to poor water quality. Such communities were identified within the following quaternaries:

- U10B, D, E and F, i.e. the Impendle area in the upper reaches of the Nzinga and Lotheni Rivers;
- V20E, F, G and H, i.e. the lower Mooi River catchment;
- U20J and K, i.e. the lower portions of the Msunduzi and uMngeni Rivers above the Nagel Dam; and
- U20H; i.e. the upper portions of the Msunduzi River catchment.

The U20H catchment has been included despite its high level of access to water, as it is assumed that the population density of this area is one of the highest in the UMDM. Further work could include population figures as an additional data layer.

### 4.3 Subsistence farming communities

The quaternary catchments within the UMDM that include subsistence farming communities are listed below:

- U10A, B, D and E, i.e. the Impendle area in the upper reaches of the Nzinga and Lotheni Rivers;
- U20H, i.e. the upper portion of the Msunduzi River catchment above Edendale and Pietermaritzburg;
- U20J, i.e. the upper portion above Edendale and Pietermaritzburg as well as the lower portion above the confluence with the uMngeni River;
- U20G and K, i.e. the lower portions of the uMngeni River above the confluence with the Msunduzi River; and
- U40C, D, E and H, i.e. the upper portions of the Mvoti River catchment to the east of New Hanover and Wartburg.

### 4.4 Summary of vulnerable community selection process

From the above three sections, a summary has been compiled which reflects the number of times a quaternary is listed. This has been captured in Table 2 below.

**Table 2: A summary of the occurrence of vulnerability aspects per quaternary catchments within the UMDM**

QUATERNARY	SETTLEMENTS	FLOOD RISK	WATER QUALITY RISK	SUBSISTENCE FARMING	TOTAL
U10A	Khathikhathi Stoffelton Loteni Mahutshini Manguzi Stepmore Nhlambamasoka Nhlathimbe Nkangala 1, 2 & 3	1		1	2
U10B	Manguzi Stepmore Manguzi Thunzi Stoffelton 1	1	1	1	3
U10D	Compensation Enguga 1, 2 & 3 Entshiyabantu KwaNovuka 2 Lower Makhuzeni Makhuzeni Stoffelton 1 & 2 Mohotloeng Nzinga 1, 2, 3 & 4 Stoffelton 1 Swayimane Tsupaneng 1 & 2 Upper Makhuzeni	1	1	1	3
U10E	Compensation Gomane 1, 2 & 3 Impendle KwaKhetha KwaNovuka 1 & 2 Macksam 1, 2 & 3 Nhlambamkhosi Similobha-Lindokuhle- Phindangene-Ntokozweni Ukukhanya 1 & 2	1	1	1	3

QUATERNARY	SETTLEMENTS	FLOOD RISK	WATER QUALITY RISK	SUBSISTENCE FARMING	TOTAL
U10F	Gomane 1 Similobha-Lindokuhle- Phindangene-Ntokozweni		1		1
U20F	Clan Area Cool Air Dalton Mpolweni 1 New Hanover Trustfeed Wartburg	1	1		2
U20G	Albert Falls Claridge Crammond Cuphluca 2 Cuphulaka Esiqumeni Cuphuluka 1 Ekupholeni Endolo Estezi 1, 2, 3, 4 & 5 Etsheni 1 Groothoek Gujini Mahlabathini Makabela Manzamyama 2 Maqongqo Maqumbi Mbedwini Mpolweni 1 & 2 Pietermaritzburg Swayimane 1, 2 & 3 Thokozani Wartburg Windy Hill			1	1
U20H	Deda Emashingeni Emaswini 1 Gezibuso Inadi/Mtoqotho Khobongwaneni Kwamcane KwaNkibini Kwapande 1 & 2 KwaShange Mafakatini Mgwagwa Mvundlweni KwaMnyandu Noshezi Ngubeni Nxamalala Nxamalala/Haza/Mpophomeni Qanda Taylors Halt Zayeka	1	1	1	3
U20J	Adaphuma Ashburton Camperdown Claridge	1	1	1	3

QUATERNARY	SETTLEMENTS	FLOOD RISK	WATER QUALITY RISK	SUBSISTENCE FARMING	TOTAL
	Edendale Foxhill Gezubuso Hilton Imboyi Inadi/Mtoqotho Manderston Manzamyama 2 Maqongqo Mbumbu Mvubukazi/Payipini Mvundlweni KwaMnyandu Nkanyezini Noshezi Ngubeni Ntekwa 1 & 2 Odaphuma Ophokweni Pietermaritzburg Sinathingi Thornville Vallkop & Dadelfontein Wilgerfontein Zayeka				
U20K	Cuphulaka Ekupholeni/Elaneni Endolo Esiqumeni Etsheni 1 & 2 Etsheni/Mahlathini Gqugquma Harburg Msilili Swayimane 1 & 3		1	1	2
U40C	Dalton Ekhamanzi Enadi Umvoti 1 & 2 Noodsberg			1	1
U40D	Efaye 1 & 2 Mashimbisane 1 & 2 Mount Elias			1	1
U40E	Kwantanzi 1 & 2 Sikhoto Nene Farm Glenside Kwayibusele 1, 2, 3, 4 & 5 Ozwathini 1, 2 & 3			1	1
U40H	Ozwathini 3			1	1
U70C	Dwengu 2 Ezimwini eZiphambathini Golube Ismont Jilofohla 1 & 2 Mbila Mid Illovu Mpangisa 1, 2 & 3 Ogagwini 1, 2 & 3	1	1	1	3

QUATERNARY	SETTLEMENTS	FLOOD RISK	WATER QUALITY RISK	SUBSISTENCE FARMING	TOTAL
	Ukhalo				
V20E	Mooi River Rondebosch		1		1
V20F	No recognised settlements		1		1
V20G	Bhumaneni Rocky Drift		1		1
V20H	Amankonka iNkone Muden Nkomba Rocky Drift uMkholwane		1		1

From this analysis, it is concluded that the communities within quaternaries U10B, D and E, as well as U20H and J, should be prioritised for climate change adaptation interventions, noting however that the U10 quaternaries will impact communities that are outside of the UMDM's area of jurisdiction.

Additional priority quaternaries were found to be U10A and U20K, with both having subsistence farming as a common factor. The remainder of the quaternaries either indicate issues of water quality or subsistence farming.

## 5.0 GROUND-TRUTHING

On the basis of the preliminary indications provided by the spatial data, it was decided that the brief time allocated to ground-truthing should be spent in quaternaries U20J and H. Observations made during this field visit confirmed the following:

- The untransformed portions of these quaternaries all show evidence of high levels of degradation, with gully erosion and invasive alien plant infestations being the most common symptom;
- The upper reaches of quaternary U20H are dominated by a combination of rural settlements and subsistence agriculture. The latter occurs in the form of dryland cropping, primarily within close proximity of drainage lines and extensive livestock grazing which has resulted in the loss of grassland vigour and catchment integrity. Even the source of the Msunduzi River appears to be a turbid pool, showing signs of eutrophication; and
- Settlements are located within close proximity to drainage lines, including the main stem of the Msunduzi River, with evidence of new settlements being established within areas that are clearly in the floodplain.

Due to time constraints, photographic examples of the above observations have not been included in this report, but geo-referenced photographs are available if required.

## 6.0 LIMITATIONS

This Technical Memorandum should be seen as a preliminary assessment, given the short timeframe available for data collection, processing and analysis. The limitations are listed in more detail below.

- Data availability – the lack of floodline data for the District limited the identification of communities directly and immediately vulnerable to flooding;
- Data resolution – many datasets were only available at ward level; and
- Currency of the data – the most recent available land-cover dataset was generated in 2008. The UMDM is currently experiencing rapid growth and transformation which may have been excluded from the analysis.
-

### 7.0 RECOMMENDATIONS

It is recommended that the areas of the UMDM that require particular attention in terms of climate change adaptation work are those within the catchment of the Msunduzi River, i.e. quaternaries U20H and J. Considering that this system is evidently highly stressed, and will continue to be degraded if effective interventions are not put in place, it certainly reflects the area within the UMDM that has the greatest potential to demonstrate the benefit of adaptation interventions. In addition to the fact that the system flows through the KZN political capital, it also hosts a high profile canoeing event which will benefit from any positive changes and provide publicity for any evident adaptation efforts. Furthermore, the Msunduzi River is currently viewed as being the cause of the rapid deterioration of water quality in the uMngeni River system, and that this system currently underpins the economy of KZN through the economic capital of Durban. Adaptation interventions in the Msunduzi River catchment will thus have local, provincial and national impact.

**It must be noted that the time and budget available for this work allowed for limited ground truthing and as such the above recommendation carries a degree of bias. It is therefore essential that additional ground truthing be done to assess the other quaternaries that are highlighted in**

Table 2. Prior to this work though the settlement data layer needs to be refined to include population and demographic data which can be used to further refine the selection of vulnerable communities.

Whereas the primary focus of this project may be on ecosystem adaptation and thus the restoration of degraded natural areas, the best results from this catchment will be seen if this approach can be coupled with the integration of ecological infrastructure into areas that are under both agricultural and settlement footprints.

### 8.0 REFERENCES

- Department of Agriculture, Forestry and Fisheries (2011) Gullies dataset.
- Department of Economic Development and Tourism (DEDT) (2012) Profiling District Economic Drivers: A Provincial Overview. A report compiled by Isikhungusethu Environmental Services for DEDT
- EKZNW (Ezemvelo KwaZulu-Natal Wildlife) (2010) 2008 KZN Province Land Cover Mapping (from SPOT5 Satellite imagery circa 2008); Data Users Report and Meta Data (version1.0). Prepared for Ezemvelo KwaZulu-Natal Wildlife by Geoterralmage (Pty.) Ltd., South Africa, October 2010.
- Statistics South Africa (StatsSA) Census 2011 Ward Dataset
- uMgungundlovu District Municipality (2012) Disaster Management Plan



Candice Allan

Co-ordinator

CAA/CH/rg



Catherine Hughes

Project Manager

## Annex II: Stakeholder Consultations

Annex II.1: Organisations consulted during the project development period.

Stakeholder:
uMgungundlovu District Municipality (UMDM)
uMgungundlovu District Environmental Forum
Msunduzi Local Municipality (MLM)
Impendle Local Municipality (ILM)
Richmond Local Municipality (RLM)
uMshwati Local Municipality
Department of Environmental Affairs (DEA)
DEA Natural Resource Management Programme: Extended Public Works Programme
Department of Water Affairs (DWA)
Department of Agriculture, Forestry and Fisheries (DAFF)
South African Weather Service (SAWS)
KwaZulu Natal Department of Cooperative Governance and Traditional Affairs (CoGTA)
KwaZulu Natal Department of Agriculture and Environmental Affairs (DAEA)
Ezemvelo KZN Wildlife
Umgeni Water Services (UWS)
Working on Fire (WoF)
Provincial and Local Fire Protection Associations (FPA)
Kishugu Public Benefit Organisation (FireWise)
FireHawks / Alasia Marketing
University of KwaZulu Natal (UKZN) School of Agriculture Earth and Environmental Sciences (SAEES)
University of Cape Town (UCT)
Cedara College of Agriculture
Built Environment Support Group (BESG)
Duzi uMngeni Conservation Trust (DUCT)
Wildlife and Environment Society of South Africa (WESSA)
LIMA Rural Development Foundation
Preservation of Msunduzi Mkhambathini Biodiversity Trust (PMMBT)
Midlands Conservancies Forum
Golder Associates Consulting Firm
Jeffares and Green Consulting Firm
Aurecon Consulting Firm
Danish Hydrological Institute (DHI)

Annex II.2: Attendance register for meeting to plan Inception Workshop.



ATTENDANCE REGISTER

Meeting		Date & Venue			
SANBI Climate Change Adaption Fund – Technical Meeting		Technical Services Boardroom – 10 April 2013 @ 13h00			
Full Name	Organisation	Telephone	Cell Number	Email	
Candice Allan ✓	Goldier	031 717 2740	0745886680	ccallan@goldier.co.za	
Katinka Wagenaar	SANBI	<del>0795</del> 0214623902	0799123100	katinka@indigo-ck.org	
Rosana Schulze	UICZN	033 260 5489	012 572 7937	schulzer@uiczn.ac.za	
Mandy Barnett	SANBI		0926009283	m.barnet@sanbi.org.za	
Amanda Yonke Hays	SANBI	021 4241838	073 233 2194	amanda@deseribloom.co.za	
KEVIN ZWICKER	ZEES	033 343 1739	082 929 4270	kzwickel@telkomsa.net	
Riaz Jooiat	UMDM	033-8976749	082 9072725	riaz.jooiat@umdm.gov.za	

Annex II.3: Attendance register for Inception Workshop.



ATTENDANCE REGISTER

Meeting		Date & Venue			
SANBI Climate Change Adaption Fund Stakeholder Workshop		Golden Horse Conference Centre – 11 April 2013 @ 08h30			
	Full Name	Organisation	Telephone	Cell Number	Email
	11 Sabine Stuart-Hill	GWRR, UKZN	0332 80 5460	0836187907	Stuart-Hill@ukzn.ac.za
Ⓢ	12 MARK SUMMERTON	UMGENI WATER	033-3411265	0833091073	mark.summerton@umgeni.co.za
	13 Lisa Strydom	BESG	0333944980	0832903325	lisa@besg.co.za
	14 D. Chetty	DIFA	082-4547554	082 4547554	d.chetty@kzn.gov.za
Ⓢ	15 IAN FELTON	DIFA	0824619101	033 3471820	ian.felton@kzndae.gov.za
	16 ROONEY BARTHOLOMEW	ASINDESI MUNICIPALITY	0333223240	076 909 4278	rooney.bartolomew@asindesi.gov.za
	17 Stefanie Schütte	DKM B Trust/UKZN		0824886712	stefanie@sdc.co.za
	18 Debbie Jewitt	KZN Wildlife	033 845 1436	0828907718	debbies@kznwildlife.com
	19 Joe Phadima	Ezemvelo	0338451460	082 727 8761	Phadima@kznwildlife.com
	20 Riaz Jogiat	UMDM	033-8976949 0829072225		riaz.jogiat@umdm.gov.za



## ATTENDANCE REGISTER

Meeting		Date & Venue			
SANBI Climate Change Adaption Fund Stakeholder Workshop		Golden Horse Conference Centre - 11 April 2013 @ 08h30			
	Full Name	Organisation	Telephone	Cell Number	Email
1	Amanda Young Hayes	SANBI	021 424 1838	073 233 2194	amanda@desertdooms.co.za
2	Katinka Wagenaar	SANBI	021 462 3902	0199 123 100	Katinka@indigo-dc.org
3	Karelle Schutte	WESSA	083 2941 686		karelle@wessa.co.za
4	Wayne Peckie	WESSA	074 1200 338	033 3303431 x2134	wpe@wessa.co.za
5	Inakando Sinyama	WESSA	071 609 4077		inakando@wessa.co.za
6	Ntokozo Ngubo	DAEA	033 355 9528	082 4144 102	ntkooz.ngubo@ken.gov.za
7	DOUG BURDEN	J. U. C. T.	033 345 7571	082 825 8425	dbur@duet.org.za
8	CAMERON BRISBANE	BESG	055 3944980	084 247 3350	cameron@besg.co.za
9	KEVAN ZUNCHER	ZEEB	033 343 1739	082 929 4270	kzuncher@telkussa.net
10	MARK DENT	UKZN	083-4426360	033-2605730	DENT@UKZN.AC.ZA



### ATTENDANCE REGISTER

Meeting		Date & Venue			
SANBI Climate Change Adaption Fund Stakeholder Workshop		Golden Horse Conference Centre – 11 April 2013 @ 08h30			
Full Name	Organisation	Telephone	Cell Number	Email	
Hannes de Villiers	KZN DFA & EA	033 3559247	082 922 9026	hannes.devilliers@kzndae.gov.za	
GARETH BOOTHWAY	MIDLANDS CLIMATE CHANGE FORUM	—	0762394267	gareth.boothway@gmail.com	
M. Barnett	SANBI	0826008215		m.barnett@sanbi.org.za	
Roland Schulze	UKZN	0332605489	0825727937	schulzer@ukzn.ac.za	
Gary Midgeley	SANBI	0825692810	021 7998707	g.midgeley@sanbi.org.za	
Azisa Parker	SANBI	021 7998736	0832349693	a.parker@sanbi.org.za	

Annex II.4: Attendance register for workshop to plan field visit itinerary.

ATTENDANCE REGISTER

Meeting for the development of the adaptation projects / programmes

Venue - 176 Langalibalele Street, 2<sup>nd</sup> Floor, Small Technical Boardroom

Time - 14h00

Date - 09 September 2013

NAME	INSTITUTION	CONTACT DETAILS	EMAIL ADDRESS	SIGNATURE
CHABENGA MTHEHWA	SAWS	032-436 3816	syabanga.mthethwa@netfocus.co.za	
Mthethwa	Mthethwa	082 4630 252	thethwa@netfocus.co.za	
CHRISTIAN NGCENGE	Mpumalanga Sis. Nqato	0724769146	ngcenge@netfocus.co.za	
MITHOZO ZISI MTHEMBU	UMD/M	0829080 571	mthembu@umd.ac.za	
DOUGLAS CHAPMAN	Agriculture (KZN)	086 558 6987	Douglas.Chapman@kzn.gov.za	
BOBBY HAZZO	KZUPPE/LOFFSO KwaNatal	082901 8745	bhazzo@netfocus.co.za	
TERRY TRINDLE	RFPA	0825512878	terry@richmondffpa.co.za	
LINDWE SERERO	UMD/M	033897 6940	Lindwe.serero@umd.ac.za	
Mundula Ndaba	CCF/M - UMBM	0767341364	mundula@gmail.com	

Annex II.5: Field visit itinerary to identify project interventions sites.

DRAFT ITINERARY FOR ADAPTATION FUND SITE VISITS - 17 - 19 SEPTEMBER 2013							
Date: Tuesday 17 September 2013							
Approx Time	Municipality	Area/ Site	Category	Ward No	Site Proposer	Tour Guide(s)	Contact No
08h00 - 12h00	Mogale City	Deepdale/ Boston	Agric		UKZN- Prof Modi	Tafadzwanashe Mabhaudi	
					DAEA		
		Khathikhathi/ Nhlathimbe	Flooding	1	Disaster Management	Zwe Mbhele	072 797 5050
		Nzinga		2			
		Nguga		3			
		Mqabulagudu		3			
		Kwakhetha		4			
		Nhlabamkhosi					
Novuka	BESG	TBC					
Come and See	BESG	TBC					
12h30 - 15h00	uMngeni	Skomplaas	Flooding	5	BESG	TBC	
		Lidgetton Area and WW	Flooding	5	MCF & UMDM Tech	Gareth Boothway	076 239 4267
		Mpophomeni/ Mthinzima	Flooding	8 & 10	Disaster Management & MCF & DUCT	Jerome Nzimande	083 537 2048
		Inguga	Flooding	9	Disaster Management		
		Mevana	Flooding	12	Disaster Management		
		Shiyabazali	Flooding	2	BESG	TBC	
		Lions River FPA Offices	EWS		FPA	Bobby Hoole	082 901 8795
		Thuthukani, Thumbleweed	Agric		UKZN- Prof Modi	Zinhle Nzimande	
15h00- 17h00	Mpofana	Penningdale	Flooding	1	Disaster Management	V Cebekhulu	082 630 5591
		Riversdale	Flooding	1			
		Tendele	Flooding	2			
18h00	uMgeni Water	Meet Mark Summerton	EWS				

Date: 18 September 2013							
Approx Time	Municipality	Area/ Site	Category	Ward No	Site Proposer	Tour Guide(s)	Contact No
08h00 - 12h00	Richmond	TBC	Agric	TBC	DAEA	TBC	
		Hopewell (Ntsongeni Area)	Flooding	3	Disaster Management	Musa Ndlovu	083 9236 232
		Phatheni		6			
		Mgxobeleni		5	Disaster Management & BESG	BESG - TBC, Musa Ndlovu for DM	
		Nompofana, Nhlazuka					
		Mjintini, Nhlazuka					
		Mbuthweni WWW					
		Shiyampahla, Nhlazuka					
		Malizayo					
Osuthu							
12h00 - 14h00	Mkhambathini	Ngoloshini	Flooding	7	Disaster Management	Xolo Ngcongo	078 886 3367
		Mpangisa		6			
		Kwathomi (Nhlazuka Area)		TBC	BESG	TBC	
		uMngwenya (Embo)					
14h00 - 17h00	uMshwathi	Swayimane	Agric		LIMA	Nomthandazo Sibisi	TBC
					Farmer Support Group		
					UKZN- Prof Modi	Tafadzwanashe Mabhaudi	TBC
					DAEA	TBC	
		Ekhamanzi	Flooding	2	Disaster Management	Lungi Msomi	076 392 5275
		New Hanover					

Date: 19 September 2013								
Approx Time	Municipality	Area/ Site	Category	Ward No	Site Proposer	Tour Guide(s)	Contact No	
08h00 - 12h00	Msunduzi	Vulindlela:	Flooding					
		Inadi						
		Elandskop			Disaster Management	Graeme Ngcongco	072 476 9146	
		Mafunze			DUCT	Sithembiso Sangweni	083 733 7939	
		Hashini						
		Emaswazeni		BESG	TBC	TBC		
		Mafakathini						
13h00 - 16h00	Msunduzi	Mafakathini	Agric		LIMA	Nomthandazo Sibisi	TBC	
		Zimiseleni, Maswazini		8	UKZN- Prof Modi	Zinhle Nzimande	TBC	
		Ifalesizwe, Khokhwane		8				
13h00 - 16h00	Msunduzi	Fishing Road, Edendale	Flooding	12	Disaster Management	Graeme Ngcongco	072 476 9146	
		Willowfontein Stream		14	Msunduzi Environmental	Rodney Bartholomew	0769094278	
		Peace Valley 3			BESG	TBC	TBC	
		Dorpspruit	Ecological		DUCT	Sithembiso Sangweni	083 733 7939	
		Darville WWW			DUCT	Sithembiso Sangweni	083 733 7939	
		Baynespruit - Duzi @ Sobantu			Msunduzi Environmental	Rodney Bartholomew	0769094278	
		Sobantu - Dark City Area	Flooding					
		Low Level - Sobantu						
		Jika Joe						
		Nkululekho						
		Mayfair Rd						
		Nhialakahle				Disaster Management	Graeme Ngcongco	072 476 9146
		Swapo						
		Ezinketheni						
Jesmondene								
Thembalihle								

**Annex II.6:** Attendance register for technical agriculture workshop.

ATTENDANCE REGISTER

MEETING: Adaptation Fund - Agriculture Sector - 2/10/2013 Whe - Bho

NAME & SURNAME	COMPANY	TEL/CELL NO.	EMAIL ADDRESS	SIGNATURE
Riz Jogiat Event Coordinator	UMDM UNEP	0829072725 0845004732	riz.jogiat@umdm.gov.za bcovcovary@unep.org.za	<i>[Signature]</i>
DOUG BURDEN	P.V.C.T.	0828258425	doug@duct.org.za	<i>[Signature]</i>
TAFADZWA MABHAUDHI	UKZN	0741309845	mabhaudhi@ukzn.ac.za	<i>[Signature]</i>
Amanda Young Hayes	SANBI NIE	0732332194	amanda@desertblooms.co.za	<i>[Signature]</i>
MTHOKO MTHUMBE	UMDM - DISASTER	0829080511	mthembumb@umdm.gov.za	<i>[Signature]</i>
Kathy Pitso	Lima	0825561417	kathyelima.org.za	<i>[Signature]</i>
Mlungu	UNEP	0821228215	m.mlungu@unep.org	<i>[Signature]</i>

Annex II.7: Attendance register for technical built environment and ecological infrastructure workshop.

ATTENDANCE REGISTER

MEETING: Adaption Fund Meetings - built Infrastructure + EBA

03/10/2013.

NAME & SURNAME	COMPANY	TEL/CELL NO.	EMAIL ADDRESS	SIGNATURE
Riaz Jogiat	UMDM	0829072725	riaz.jogiat@umdm.gov.za	
J. Gordon	BESG	0842646929	James@besg.co.za	
S. Lilakazi	DUCT	0194794490	simone@duct.org.za	
Mthabo Mthembu	UMDM - DEASTER	0829080571	mthabo.mthembu@umdm.gov.za	
Amanda Young Hayes	with SANBI NIE	0732332194	amanda@desertbloem.co.za	
Cameron Brisbane	BESG	0842473330	cameron@besg.co.za	
S'BUHLLELA	BESG	0790265955	Wela35@uct.ac.za	
NAREEN BHARATI	Manduzi Municipality	0835779230	nareen.bharati@manduzi.gov.za	
Brent Cameron	WWF	0845004732	brcameron@wwf.org.za	
GARETH BOOTHWAY	MIDLANDS CAREERMAKERS FORUM	0762394267	gareth.boothway@gmail.com	
FRANCOIS	GREENS + GREEN	083718	francois@jgi.co.za	
M. BOHLEN	SAWSI	0826001213	mbohlen@saws.co.za	
LINDWE SERERO	UMDM	0828860747	Lindwe.serero@umdm.gov.za	

Annex II.8: Attendance register for technical EWS workshop.



MEETING			Date & Venue			
ADAPTATION FUND- EARLY WARNING SYSTEMS			17 October 2013, Technical Services Boardroom			
No.	Full Name	Company	Telephone	Cell Number	Email	Signature
1	Willen Costmizen (Cous)	Alasia Marketing	0824131305	-	Salce@alasia.co.za	[Signature]
2	- " - (Fax)	- " -	0829725263	-	shawn@alasia.co.za	[Signature]
2	2000 Betzed	D.U.C.T.	0828258429	-	dooye.duct@uct.ac.za	[Signature]
4	KIM GRAY	STILES & GRAY	085718219	-	gray@stiles.co.za	[Signature]
5	JASON HOLLOWES	DHI	082 455 3989	-	jhollowes@dhigroup.com	[Signature]
6	A. ...	DHI	083 466 091	-	anpe@dhigroup.com	[Signature]
7	MARK SUMMERS	UMGENI WATER	0833091073	-	mark.summers@umgeni.co.za	[Signature]
8	NITHYANTEE THANDARAJAN	UMISM	082 4630 352	-	nithyanatee@umgeni.gov.za	[Signature]
9	MONDY BARNETT	SANBI	0826008213	-	m.barnett@sanbi.org.za	[Signature]
10	BOBBY HOUS	KZNPPA	0829018715	-	bhous@kznppa.co.za	[Signature]
11	Valent ...	...	...	...	...	[Signature]
12	SAREL JURGENSBURG	AURECON	...	...	sarel.jur@aurecongroup.com	[Signature]
13	RICHY PILLAY	UMGENI	082 304 4411	...	richy.pillay@umgeni.gov.za	[Signature]
14	Ngobo Mpanza	UMDMICT	082 855 07 40	...	mpanza@umdmict.gov.za	[Signature]



MEETING			Date & Venue			
ADAPTATION FUND- EARLY WARNING SYSTEMS			17 October 2013 , Technical Services Boardroom 10H00 AM			
No.	Full Name	Company	Telephone	Cell Number	Email	Signature
15	Mthoko Mthembu	UMDM - DISASTER	0829080571	033 8176948	mthembu@undm.gov.za	
16	Mandisa Mthembu	UMDM - DISASTER	010 243502	033 8176948	mandisa@undm.gov.za	
17	Lindwe Seero	UMDM	033 8976940	082 886 0747	lindwe.seero@undm.gov.za	

**Annex II.9:** List of meetings from 18-22 November 2013.

<b>Date and time</b>	<b>Meeting</b>	<b>In attendance</b>
19-11-2013; 09h30-10h30	UMDM planning meeting	Riaz Jogiat (UMDM), Mthokozisi Mthembu (UMDM), Thandeka Mthiyane (UMDM), Amanda Younge Hayes (SANBI) & Mike Jennings (SANBI)
19-11-2013; 11h00-16h00	Site visits to uSwapo, Subanto, Simero and Snating River Valley	Riaz Jogiat (UMDM), Mthokozisi Mthembu (UMDM), Thandeka Mthiyane (UMDM), Amanda Younge Hayes (SANBI) & Mike Jennings (SANBI)
20-11-2013; 09h30-10h30	Umgeni Water Services	Mark Summerton (UWS), Amanda Younge Hayes (SANBI) & Mike Jennings (SANBI)
20-11-2013; 11h00-16h00	Site visits to Siyathuthuka and Nhlazuka	Mthokozisi Mthembu (UMDM), Mr Shelembe (Richmond Municipality), Amanda Younge Hayes (SANBI) & Mike Jennings (SANBI)
21-11-2013; 09h30-10h30	UMDM planning meeting	Riaz Jogiat (UMDM), Mthokozisi Mthembu (UMDM), Amanda Younge Hayes (SANBI) & Mike Jennings (SANBI)
21-11-2013; 11h00-16h00	Site visits to Lidgeton, Swayimani and Vulindlela	Riaz Jogiat (UMDM), Mthokozisi Mthembu (UMDM), Lungi Msoni (uMshwati Municipality Disaster Officer) Amanda Younge Hayes (SANBI) & Mike Jennings (SANBI)
22-11-2013 09h30-10h30	Site visits to Siphumalele and Shiyabazali informal settlements	Riaz Jogiat (UMDM), Amanda Younge Hayes (SANBI) & Mike Jennings (SANBI)
22-11-2013 11h00-12h00	UMDM debriefing meeting	Riaz Jogiat (UMDM), Amanda Younge Hayes (SANBI) & Mike Jennings (SANBI)

**Annex II.10:** List of meetings from 6-10 January 2014.

<b>Date and time</b>	<b>Meeting</b>	<b>In attendance</b>
06-01-2014; 15h00-17h00	UMDM planning meeting	Riaz Jogiat (UMDM), Mthokozisi Mthembu (UMDM), & Mike Jennings (SANBI)
07-01-2014; 11h30-13h30	UMDM Human Settlements	Rhada Govender (Msunduzi Local Municipality), Riaz Jogiat (UMDM), Mthokozisi Mthembu (UMDM) & Mike Jennings (SANBI)
08-01-2014; 11h00-12h00	UMDM GIS specialist	Khavin Sivenandan (UMDM), Riaz Jogiat (UMDM), Mthokozisi Mthembu (UMDM) & Mike Jennings (SANBI)
08-01-2014; 15h00-16h00	Swayimani Ward 8 traditional authority	Nokukhanya Magwaza (Swayimani Ndunankulu), Riaz Jogiat (UMDM), Mthokozisi Mthembu (UMDM) & Mike Jennings (SANBI)
08-01-2014; 16h30-17h00	uMshwati local authority	Marshall Gwala (uMshwati Mayor), Riaz Jogiat (UMDM), Mthokozisi Mthembu (UMDM) & Mike Jennings (SANBI)
09-01-2014; 09h00-10h00	uMsunduzi local authority	Bethwell B. Ngcobo (Vulindlela Ward 8 councillor), Riaz Jogiat (UMDM), Mthokozisi Mthembu (UMDM) & Mike Jennings (SANBI)
09-01-2014; 14h00-16h00	FireHawks / Lions River Fire Protection Association	Jake Oosthuizen, Willem Oosthuizen (FireHawks) & Mike Jennings (SANBI)
10-01-2014;	UKZN Crop Science Department	Prof Albert Modi (UKZN), Prof Tafadzwanashe Mabhaudhi (UKZN), Riaz Jogiat (UMDM), Mthokozisi

09h00-10h30		Mthembu (UMDM), & Mike Jennings (SANBI)
10-01-2014; 12h00-13h00	Richmond / Nhlazuka Ward 5 traditional and local authorities	Mbizo Mkhize (“Ndunankulu”), Ben Ngongo (Ward Councillor), Musa Ndlovu (Richmond Local Municipality), Mthokozisi Mthembu (UMDM), & Mike Jennings (SANBI)

**Annex II.11:** List of meetings from 27-29 January 2014.

Date and time	Meeting	In attendance
27-01-2014; 15h00-16h00	UMDM planning meeting	Mthokozisi Mthembu (UMDM), Dr Mandy Barnett (SANBI) & Mike Jennings (SANBI)
27-01-2014; 19h00-20h00	Umgeni Water Services	Mark Summerton (UWS), Dr Mandy Barnett (SANBI) & Mike Jennings (SANBI)
28-01-2014; 09h00-13h00	Site visit to Vulindlela Ward 8	Prof Tafadzwanashe Mabhaudhi (UKZN), Joe Lehlohonolo Phadima (KZN Wildlife), Steve McKean (KZN Wildlife), Mthokozisi Mthembu (UMDM), Dr Mandy Barnett (SANBI) & Mike Jennings (SANBI)
28-01-2014; 14h00-17h00	Site visit to Nhlazuka Ward 5	Prof Tafadzwanashe Mabhaudhi (UKZN), Joe Lehlohonolo Phadima (KZN Wildlife), Steve McKean (KZN Wildlife), Musa Ndlovu (Richmond Local Municipality), Mthokozisi Mthembu (UMDM), Dr Mandy Barnett (SANBI) & Mike Jennings (SANBI)
29-01-2014; 09h00-13h00	Site visit to Swayimani Ward 8	Prof Tafadzwanashe Mabhaudhi (UKZN), Joe Lehlohonolo Phadima (KZN Wildlife), Steve McKean (KZN Wildlife), Mthokozisi Mthembu (UMDM), Dr Mandy Barnett (SANBI) & Mike Jennings (SANBI)

**Annex II.12:** List of meetings from 17-18 March 2014.

Date and time	Meeting	In attendance
17-03-2014; 09h00-11h00	UMDM Management Committee	See Annex X.12.1
17-03-2014; 13h00-15h00	UMDM Disaster Management Forum	See Annex X.12.2
17-03-2014; 16h00-17h00	Msunduzi Local Municipality	Rodney Bartholomew (MLM), Dr Mandy Barnett (SANBI) & Mike Jennings (SANBI)
18-03-2014; 07h00-08h00	Umgeni Water Services	Mark Summerton (UWS), Dr Mandy Barnett (SANBI) & Mike Jennings (SANBI)
18-03-2014; 09h00-10h00	UMDM Corporate Services / Human Resources	Mr M Mathe (UMDM Corporate Services), Mr M Bhengu (UMDM Human Resources), Dr Mandy Barnett (SANBI) & Mike Jennings (SANBI)
18-03-2014; 11h00-12h00	Provincial and local FPAs, FireWise	See Annex X.12.3
18-03-2014; 12h00-13h00	Built Environment Support Group	Cameron Brisbane (BESG), Dr Mandy Barnett (SANBI) & Mike Jennings (SANBI)
18-03-2014; 13h00-14h00	Working on Fire	Maindren Chettiar (WoF), Dr Mandy Barnett (SANBI) & Mike Jennings (SANBI)

Annex II.12.1: Attendance register from Management Committee meeting.

ATTENDANCE REGISTER  
MANAGEMENT COMMITTEE

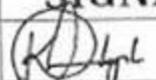
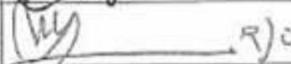
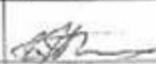
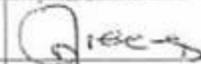
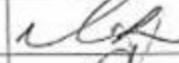


DATE: 17 MARCH 2014

NAME	CONTACT DETAILS	SIGNATURE
TLS KHUZWAYO: MUNICIPAL MANAGER – CHAIRPERSON	033 897 6763	
RMJ BALOYI:HOD: COMMUNITY SERVICES	033 897 6821	APOLGUY - INDISPOSED
J COGLAN MANAGER: PERFORMANCE MANAGEMENT	033 897 6756	APOLGUY - ON MUNICIPAL BUSINESS
NG HLOPHE LEGAL ADVISOR	033 897 6852	
M MATHE HOD: CORPORATE SERVICES	033 897 6788	
B MBAMBO HOD: TECHNICAL SERVICES	033 897 6708	APOLGUY - ON TRAINING
N MCHUNU ACTING CHIEF FINANCIAL OFFICER	033 897 6715	
M SIBIYA (MANAGER: OMM/COMPLIANCE OFFICER)	033 897 6804	
M MWANDLA (MANAGER: COMMUNICATION)	033 897 6713	
P FAKUDE (MANAGER: IDP)	033 897 6912	Present
P NZIMAKWE MANAGER: INTERNAL AUDIT	033 897 6797	
Mike Jennings SANBI	m.jennings@sanbi.org.za 0721084718	
Mandy Barnitt SANBI	m.barnitt@sanbi.org.za	

Annex II.12.2: Attendance register from Disaster Management Forum meeting.

**ATTENDANCE REGISTER**  
**DISASTER MANAGEMENT FORUM**  
 Meeting held: 17 MARCH 2014

NAME	SIGNATURE	ORGANIZATION	CONTACT DETAILS
K Mkhize		COGTA	khumbule.mkhize@kzncogta.gov.za
M.L. Nxumalo		UMDM	nxumalo@umdm.gov.za
Mthembu		"	mthembu@umdm.gov.za
M.L. Zuma		"	zuma@umdm.gov.za
S.H. Mdishwa		UMDM FIDB	MDISHWA@umdm.gov.za
Ricky Pillay		"	PILLAYR@umdm.gov.za
P. Govender		TRANSVAAL METRO FIRE	Parasaramon.Govender@transnet.net
Mike Jennings		SANBI	m.jennings@sanbi.org.za
Lungile Msonji		UMSHWATHI Municipality	Lungile.msonji@umshwathi.gov.za
M. Barnett		SANBI	m.barnett@sanbi.org.za
B. Hoole		KZN FPA / LRFA	bhoole@natfms.co.za
T. Tedder		RICHMOND FPA	tedder@richmondtpa.co.za

Ex. MUTHWA		UMDM	xolani.muthwa@umdm.gov.za
M.K. Ndaba		PSMC-UMDM 081 5533356	mndaba1@gmail.com
Cedra Candae		Msunduzi Dis Managemt	084 7218899   cedra.candae@msunduzi.gov.za
KAREN YARDLEY		ARDM, CEDARA	076 941 2707 Karen.yardley@kzndae.gov.za
ASHRAF WAND		UMDM - FIRE	078 7988814 ashrafwand@gmail.com
SYDNEY GOVENDER		UMDM FIRE	govenders@umdm.gov.za (08212674)
PETROS MCOO		UMDM	petros@umdm.gov.za
MILDRED MADLALA		DISASTER MANAGEMENT	Mudred.madlala@umdm.gov.za
NOSIPHO MOYO		DEA - UMDM	moyo@umdm.gov.za
MATHU KAMU		DEA - H/O	Mathu.Kamu@kzndae.gov.za
Stan Khuzwayo		UMDM	mm@umdm.gov.za
Ralpho Nkomo		UMDM	nkomo@umdm.gov.za
Mandisa Kibwe		UMDM	kibwe@umdm.gov.za
Alfred Mchizha		UMDM	Alfred Mchizha
JT Nzimane		UMDM	jenome.nzimane@umdm.gov.za
Musa Ndlovu		Richmond Municipality	musa.ndlovu@richmond.gov.za
Billy Paton		Msunduzi Fire	billy.paton@msunduzi.gov.za
Sihle Mshali		UMDM	0799572566 Sihle.Mshali@umdm.gov.za

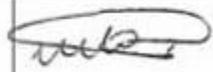
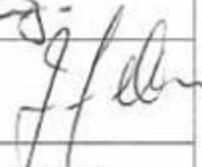
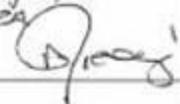
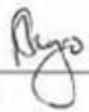
Annex II.12.3: Attendance register from fire component meeting.

Attendance Register		18/3/2014
Mandy Barnett	m.barnett@sanbi.org.za	
Douglas Olen	douglas.olen@wafire.co.za	
Nozipho Qwabe	nozipho.qwabe@firewise.org.za	
Mike Jennings	m.jennings@Sanbi.org.za	
Willem Osthuis	willem@abasia.co.za	
TERRY TEDDER	terry@richmondfpd.co.za	
BOBBY HOOLE	bhoola@netfocus.co.za	

Annex II.13: Attendance register from UMDM/DAEA meeting.

CLIMATE CHANGE- BUILDING RESILIENCE AT UMNENI CATCHMENT

ATTENDANCE REGISTER: 09 APRIL 2014

No	Name of Company	Name & Surname	Tel No.	Fax No.	Email Address	Signature
1.	UMGUNGUNDOLOU DISTRICT MUNICIPALITY	MANDISA KHOMO	033 897 6811			
2.	Nosipho Ntengi Umgungundlovu District Municipality	Nosipho Ntengi	033 897 6798		nosipho.ntengi@umdm.gov.za	
3.	Dept agric & rural affairs	IAN FELTON	082469101		ian.felton@zinda.org.za	
4.	UMDM Fire & EMERGENCY	RICKY PILLAY	0628044411		RICKY.PILLAY@UMDM.GOV.ZA	
5.	DEA UMDM	NOSIPHO MOTO	0338976808		moyon@umdm.gov.za	
6.	SANBI	MANDY BARNETT	082 6308293		m.barnett@scmbi.org.za	
7.						
8.						

Annex II.14: Attendance register from DAEA meeting.

Attendance REGISTER.

9 April 2014

KAREN YARDLEY    DEPT. AGRIC.    OFFICE    cell  
                         ARDM    033 343 8142    076 941 2707  
                         Karen.Yardley@kzndae.gov.za

MUSTAFA HOOSSEN    DAEA    033 355 9476    082 812 4745  
                         mustafa.hoosen@kzndae.gov.za

Mandy Barnard    SANSI

Annex II.15: Attendance register CoGTA meeting.



cogta

Department:  
Co-operative Governance and Traditional Affairs  
PROVINCE OF KWAZULU-NATAL



ATTENDANCE REGISTER:

MEETING : CLIMATE CHANGE MEETING  
DATE : 24 APRIL 2014  
TIME : 10H00  
VENUE : ROOM 602, WADLEY HOUSE

NO	(FIRST NAMES & SURNAMES)	ORGANISATION	CONTACT NO	EMAIL ADDRESS	SIGNATURE
1.	Jonty NDLAZI	KZN-PDMC	Tel: 033 597 5627 Fax: 033 597 5766 Cell: 0822 603081	jonty.ndlazi@kzncogta.gov.za	
2.	Kian Jigiet	KMDM	Tel: 023 897 6949 Fax: 033-345 5880 Cell: 082 907 2725	kian.jigiet@kmdm.gov.za	
3.	Mandy Barnett	SANSI	Tel: Fax: Cell: 0826 008997	m.barnett@sansi.org.za	
4.	Zama Khuzwayo	KZN-PDMC	Tel: 0127844044	Zama.khuzwayo@kzncogta.gov.za	

Tel: +24(0) 33 395 2831

Fax: +24(0) 33 345 6432

www.kzncogta.gov.za

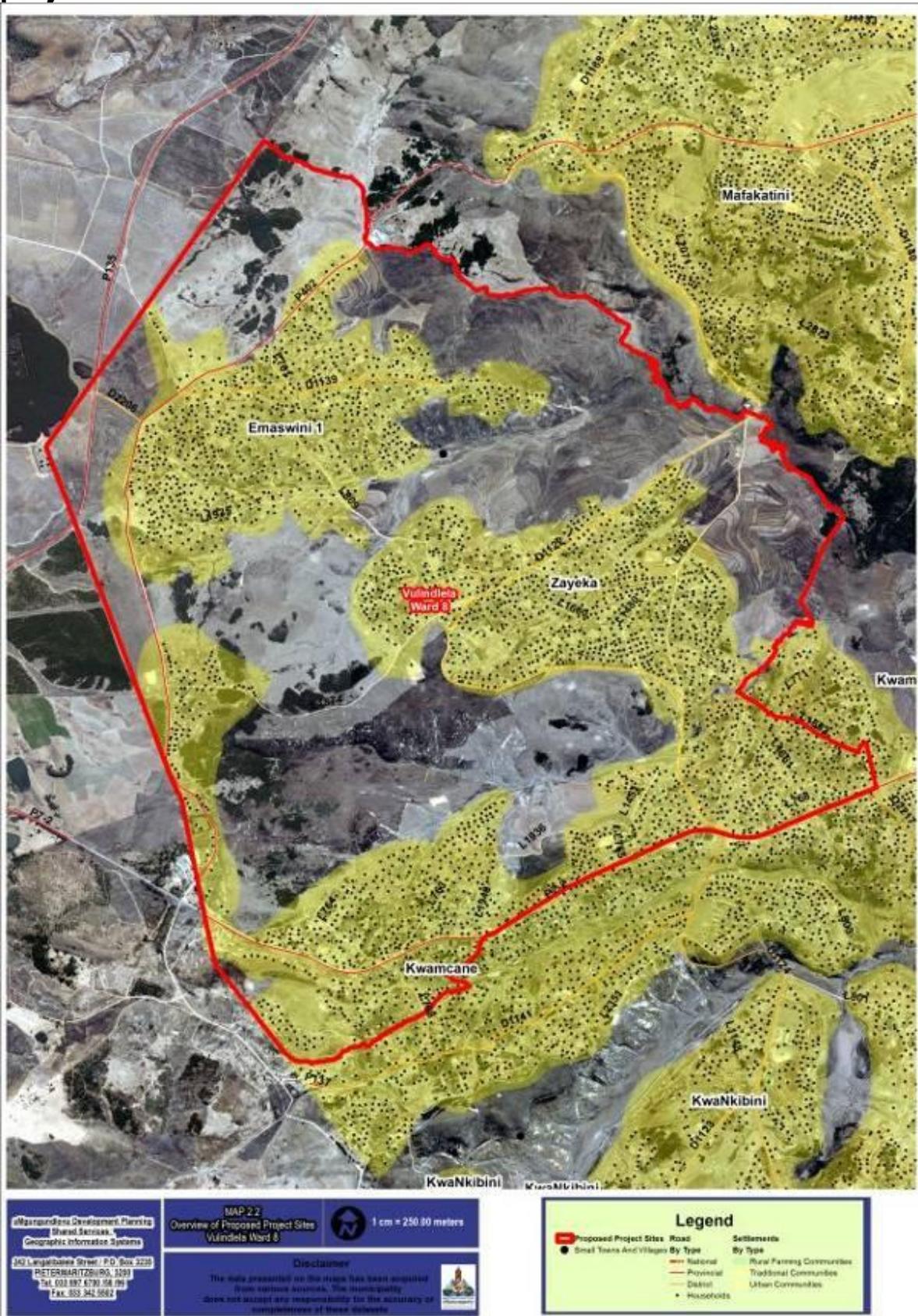
Address: 330 Langalibalele Street, Pietermaritzburg 3200

People centred sustainable co-operative governance which focuses on effective service delivery responsive to the needs of the community

	Thobozani Vita Karzi	KZN-PMIC	Fax: Cell: 0724356585	thobozani: vita@kznpa- gov.za	Thobozani
5.	Sibongiseni Ngema	KZN-PMIC	Tel: Fax: Cell: 0761533685	sibongiseni: ngema@ kzncogta.gov.za	Sibongiseni
6.	MTHOFO MTHHEMBU	UMDM DISASTER MANAGEMENT	Tel: Fax: Cell: 0829080571	mthembu@umdm.gov.za	Mthembu
7.	Mamotisi: K. Ndaba	PMIC-UMDM	Tel: Fax: Cell: 0815533356	mndaba@gmail.com	Mamotisi
8.			Tel: Fax: Cell:		
9.			Tel: Fax: Cell:		
10.			Tel: Fax: Cell:		



**Annex III: Maps of the demonstration sites for the Adaptation Fund project.**



**Figure III.1:** Ward 8 of Vulindlela showing position of households and traditional communities (2011).

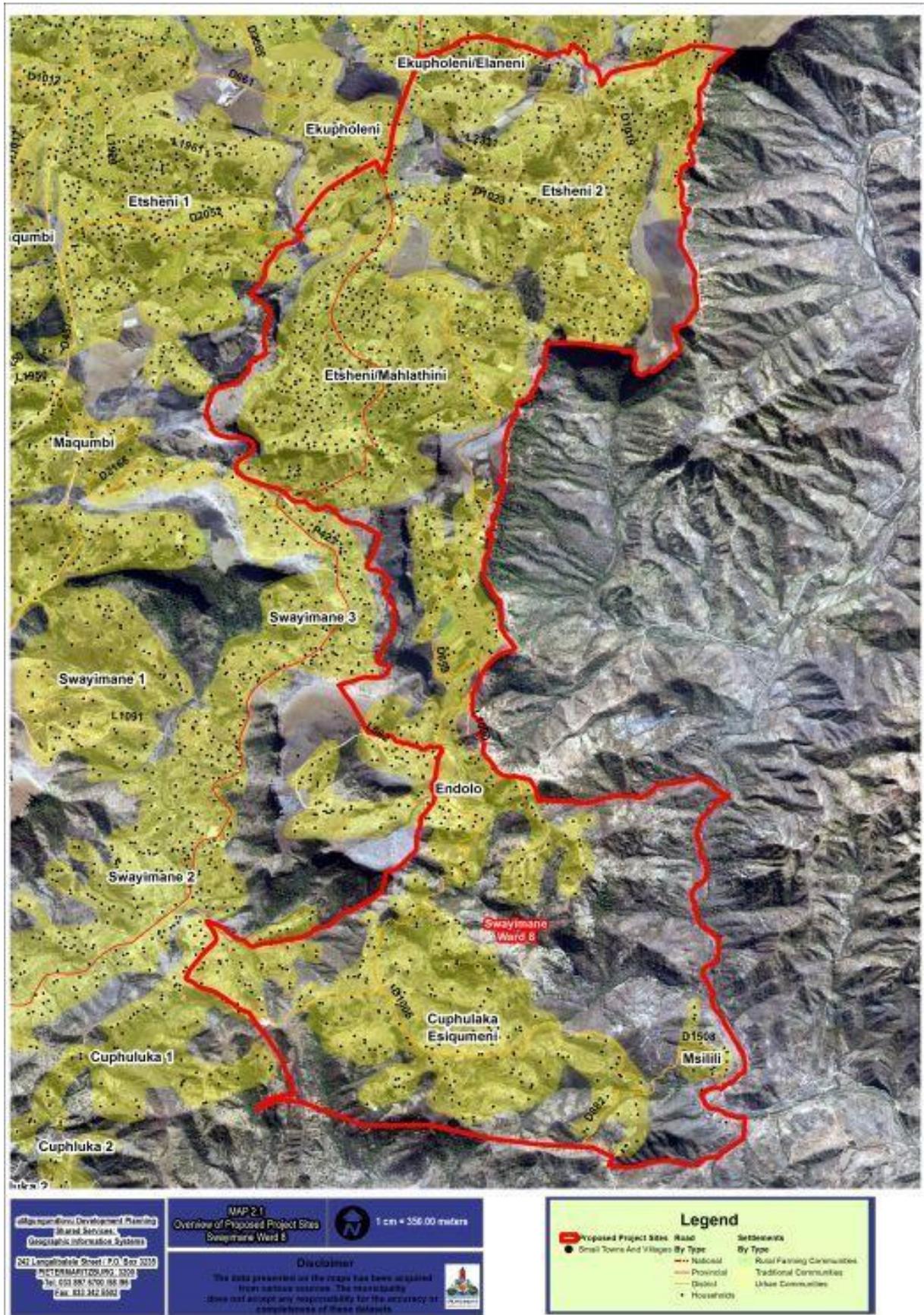


Figure III.2: Ward 8 of Swayimane showing position of households and traditional communities (2011).

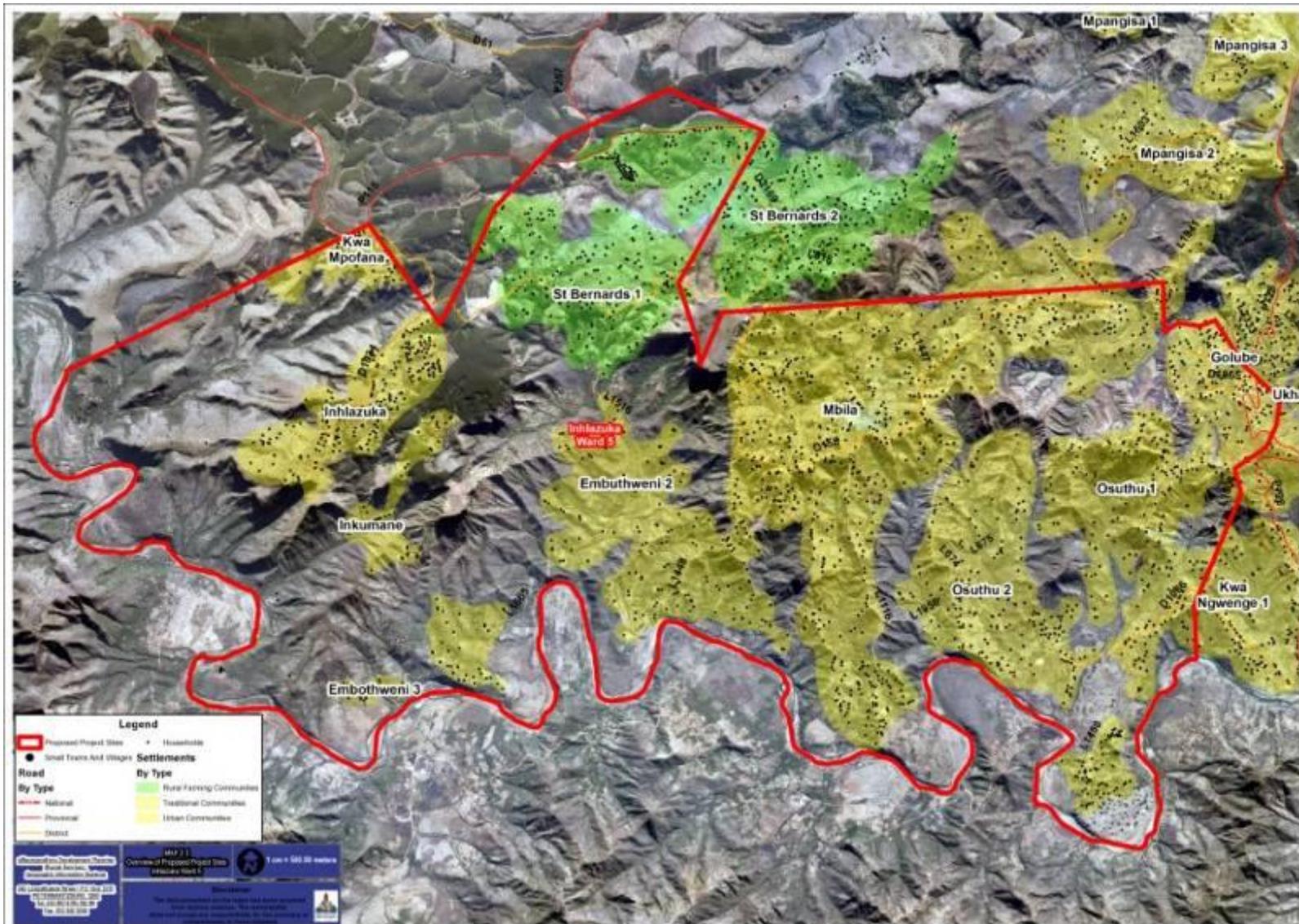


Figure III.3: Ward 5 of Nhlazuka showing position of households and traditional communities (2011).

## Annex IV: Endorsement Letters

### Annex IV.1: Letter of Endorsement from uMgungundlovu District Municipality.

Enquiries: Mr M Mthembu  
033 897 6948

31 March 2014

To: The Adaptation Fund Board  
c/o Adaptation Fund Board Secretariat  
[Secretariat@Adaptation-Fund.org](mailto:Secretariat@Adaptation-Fund.org)  
cc Mandy Barnett ([m.barnett@sanbi.org.za](mailto:m.barnett@sanbi.org.za))



Dear Sir/Madam

#### ENDORSEMENT: UMNGENI CLIMATE CHANGE RESILIENCE PROJECT

We wish to inform you that uMgungundlovu District Municipality hereby confirms its interest and commitment to leading and participating in the project, *Building resilience in the greater uMngeni catchment, South Africa* that will be submitted to the Adaptation Fund through South Africa's National Implementing Entity.

We recognise that the project is aimed at reducing vulnerabilities and increasing the resilience of rural and periurban communities to the impacts of climate change in the uMgungundlovu District. The project will enable us to improve municipal systems to support local level adaptation responses, and to empower local communities to participate meaningfully in processes that link scientific, technical and local knowledge.

The uMgungundlovu District Municipality is committed to providing the necessary resources to support the implementation of this project. In this regard, we will commit both technical and in kind support to the objectives of the project, and will ensure that its implementation is fully integrated in our processes in such a way that its outcomes can be sustained and replicated.

We formally endorse this exciting project, and confirm our interest in and commitment to implementing it. We look forward to a lasting and fruitful collaboration with the Adaptation Fund and SANBI, the South African NIE.

Yours in development

  
TLS KHUZWAYO  
MUNICIPAL MANAGER

Tel: 033 8976763

Office of the Municipal Manager  
PO Box 3235, Pietermaritzburg, 3200  
242 Langalibalele Street, Pietermaritzburg, 3201

Fax: 033 3945512

**Annex IV.2:** Letter of Endorsement from Vulindlela Ward 8 local authorities.

Date: 06/04/2014

The Municipal Manager  
uMgungundlovu District Municipality  
Pietermaritzburg

Dear Sir

**uMngeni Resilience Project**

I am honoured to be a partner in this exciting uMngeni Resilience Project. I would like to formally express my full support for the project, and confirm my interest in and commitment to participating in it.

I look forward to playing a strong role, working with the community and with other partners, in implementing the project.

Kind regards

Name: BETHWELL B. NGILOBO

Position: WARD COUNCILLOR

Area: VULINDELA WARD 08

Ngcobo Bhukumuzi Bethwell  
Commissioner of Oath (Ex Officio)  
Ward 08 Councillor, Msunduzi Municipality  
City Hall, Chief Albert Luthuli Street,  
Pietermaritzburg



## uMshwathi Municipality

Your Reference:	Date:	My Reference:	Date:	Enquiries
U Verwysing	Datum:	My Verwysing:	Datum:	Navrae:
			08 May 2014	R.M. Mani

The Municipal Manager  
uMgungundlovu District Municipality  
Pietermaritzburg  
3201

Attention Mr. S. Khuzwayo

Dear Sir,

**uMngeni Resilience Project**

I am honoured to be a partner in this exciting uMngeni Resilience Project. I would like to formally express my full support for the project, and confirm my interest in and commitment to participating in it.

I look forward to playing a strong role, working with the community and with other partners, in implementing the project.

Yours faithfully

Cnr. B.M. Gwala  
Honourable Mayor  
uMshwathi Municipality

*Pls forward to Riaz for appropriate action*

### VISION

*"uMshwathi Owethu - Lets Build Together"*

uMshwathi Municipality, Private Bag 229, Wartburg, 2233 - Main Road, New Hanover, 3440  
Telephone: 033 502 0280 / 033 502 0287, Fax: 033 502 0286

**Annex IV.4:** Letter of Endorsement from Nhlazuka Ward 5 local authorities.

Date: 13 MAY 2014

The Municipal Manager  
uMgungundlovu District Municipality  
Pietermaritzburg

Dear Sir

**uMngeni Resilience Project**

I am honoured to be a partner in this exciting uMngeni Resilience Project. I would like to formally express my full support for the project, and confirm my interest in and commitment to participating in it.

I look forward to playing a strong role, working with the community and with other partners, in implementing the project.

Kind regards



Name: B. Nsioniso

Position: WARD COUNCILLOR

Area: NHLAZUKA W05

RICHMOND MUNICIPALITY  
COMMUNITY DEVELOPMENT  
COUNCIL  
PIETERMARITZBURG  
RICHMOND, 3780

**Annex IV.5:** Letter of Endorsement from Vulindlela Ward 8 traditional authorities.

Date: 06:04:2014

The Municipal Manager  
uMgungundlovu District Municipality  
Pietermaritzburg

Dear Sir

**uMngeni Resilience Project**

I am honoured to be a partner in this exciting uMngeni Resilience Project. I would like to formally express my full support for the project, and confirm my interest in and commitment to participating in it.

I look forward to playing a strong role, working with the community and with other partners, in implementing the project.

Kind regards

Name: Zwelonke Ndlovu

Position: INDUNA

Area: EMASWAZINI LOCATION

KWAMPUMUZA TRIBAL AUTHORITY	
EMASWAZINI LOCATION	
Z.W NDLOVU (INDUNA)	
SIGN <u>Zwelonke</u>	DATE <u>6/4/14</u>

**Annex IV.6:** Letter of Endorsement from Swayimani Ward 8 traditional authorities.

Date: 09/04/2014.

The Municipal Manager  
uMgungundlovu District Municipality  
Pietermaritzburg

Dear Sir

**uMngeni Resilience Project**

I am honoured to be a partner in this exciting uMngeni Resilience Project. I would like to formally express my full support for the project, and confirm my interest in and commitment to participating in it.

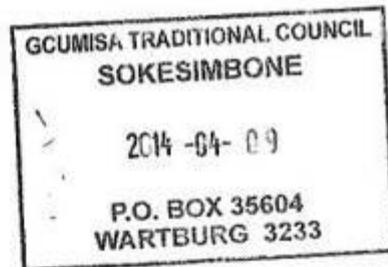
I look forward to playing a strong role, working with the community and with other partners, in implementing the project.

Kind regards

Name: *Nkosiye P. Gumisa*

Position: *Inkosi*

Area: *Swayimani*



**Annex IV.7:** Letter of Endorsement from Nhlabazuka Ward 5 traditional authorities.

Date: 14/05/2014

The Municipal Manager  
uMgungundlovu District Municipality  
Pietermaritzburg

Dear Sir

**uMngeni Resilience Project**

I am honoured to be a partner in this exciting uMngeni Resilience Project. I would like to formally express my full support for the project, and confirm my interest in and commitment to participating in it.

I look forward to playing a strong role, working with the community and with other partners, in implementing the project.

Kind regards

Name: Inkosi M.P. Mkhizig

Position: Inkosi

Area: Vumukwena Inhlazuka

VUMUKWE NZA  
TRADITIONAL  
COUNCIL

081 85 11

P.O. BOX 122  
MID-BLOVO 3750

**Annex IV.8:** Letter of Endorsement from KZN Provincial Fire Protection Association.



1<sup>st</sup> April 2014

The Municipal Manager  
uMgungundlovu District Municipality  
Pietermaritzburg  
c/o [mthembum@umdm.gov.za](mailto:mthembum@umdm.gov.za)  
cc Mandy Barnett ([m.barnett@sanbi.org.za](mailto:m.barnett@sanbi.org.za))

Dear Sir

**uMngeni Resilience Project.**

We at the Kwazulu Natal Fire Protection Association are honoured to be a partner in this exciting uMngeni Resilience Project. We would like to formally express our full support for the project, and confirm our interest in and commitment to participating in this project.

We look forward to playing a strong role in working with UMDM and other partners in implementing the early fire warning systems element of the project.

Yours sincerely,

**For Kwazulu Natal Fire Protection Association**

**S.THOMAS  
OPERATIONS MANAGER**

**Annex IV.9:** Letter of Endorsement from Lions River Fire Protection Association.



Postal: P O Box 85, Howick 3290  
Physical: Graslyn Farm, 34 Currys Post Road, Currys Post 3290  
033-330 3702 (Office) Fax.: 086 551 5828  
admin@lionsriversfpa.co.za / fpo@lionsriverfpa.co.za

2 April 2014

The Municipal Manager  
uMgungundlovu District Municipality  
Pietermaritzburg

c/o [mthembum@umdm.gov.za](mailto:mthembum@umdm.gov.za)  
cc Mandy Barnett ([m.barnett@sanbi.org.za](mailto:m.barnett@sanbi.org.za))

Dear Sir

**uMngeni Resilience Project**

The Lions River Fire Protection Association (Reg. 838/01) is honoured to be a partner in this exciting uMngeni Resilience Project. We would like to express our full support for the project, and confirm our interest in and commitment to participating in it.

We look forward to playing a working role with the UMDM and other partners in implementing the early warning systems component of the project in relation to integrated wildland fire management.  
Kind regards

*(Sent electronically in PDF – no signature)*

Robert Hoole  
Fire Protection Officer  
Lions River Fire Protection Association

Lions River Fire Protection Association  
Registered in terms of the National Veld & Forest Fire Act 101 of 1998  
Dept. of Agriculture, Forestry & Fisheries Reg. No. 838/01

Annex IV.10: Letter of Endorsement from Richmond Fire Protection Association.



1<sup>st</sup> April 2014

The Municipal Manager  
UMgungundlovu District Municipality  
Pietermaritzburg  
c/o [mthembum@umdm.gov.za](mailto:mthembum@umdm.gov.za)  
cc Mandy Barnett ([m.barnett@sanbi.org.za](mailto:m.barnett@sanbi.org.za))

Dear Sir

**UMngeni Resilience Project**

We at Richmond FPA are honored to be a partner in this exciting uMngeni Resilience Project. We would like to formally express our full support for the project, and confirm our interest in and commitment to participating in this project.

We look forward to playing a key role, working with UMDM and other partners, in implementing the early warning systems element of the project in relation to wildland fire management in the Nhlazuka area.

Kind regards

Terry Tedder  
FPO/ CEO  
Richmond FPA

**Annex IV.11: Letter of Endorsement from Working on Fire.**



**FFA OPERATIONS (PTY) LTD**  
IMPLEMENTING THE EPWP WORKING ON FIRE PROGRAMME



PO Box 13052, West Acres, Melbourn, 1213, RSA  
Company Registration: 2004/010641/07 - VAT Number: 4200222955  
Tel: +27 11 741 6400 - Fax: +27 11 741 6418 - Website: [www.ffa.co.za](http://www.ffa.co.za)

2 April 2014

The Municipal Manager

uMgungundlovu District Municipality

Pietermaritzburg

c/o [mthembum@umdm.gov.za](mailto:mthembum@umdm.gov.za)

cc Mandy Barnett ([m.barnett@sanbi.org.za](mailto:m.barnett@sanbi.org.za))

Dear Sir

**uMngeni Resilience Project**

We at Working on Fire are honoured to be a partner in this exciting uMngeni Resilience Project. We would like to formally express our full support for the project, and confirm our interest in and commitment to participating in this project.

We look forward to playing a strong role working with UMDM and other partners in implementing the early fire warning systems and response element of the project.

Kind regards

Tracey Carter

Provincial Coordinator

Working on Fire

**Annex IV.12:** Letter of Endorsement from UKZN School of Agriculture, Earth and Environmental Science.

26 March 2014



**School of Agricultural, Earth and  
Environmental Sciences**

Private Bag X01, Scottsville, 3209, South Africa  
Telephone (033) 260-6076 Fax (033) 260-6080  
[modiat@ukzn.ac.za](mailto:modiat@ukzn.ac.za)

**The Municipal Manager  
UMgungundlovu District Municipality  
Pietermaritzburg**

Dear Sir/Madam

**RE: uMngeni Resilience Project**

We are honoured as the School of Agricultural, Earth and Environmental Sciences of the University of KwaZulu-Natal to be a partner in this exciting uMngeni Resilience Project. We would like to formally express our full support for the project, and confirm our interest in and commitment to participating in this project.

We look forward to playing a leading role working with UMDM and other partners in implementing the collaborative small scale agriculture element and early warning systems elements of the project.

Yours sincerely

A handwritten signature in blue ink, appearing to read "A. Modi".

.....  
Albert T. Modi  
Dean & Head of School  
Agricultural, Earth & Environmental Sciences  
University of KwaZulu-Natal

**Annex IV.13:** Letter of Endorsement from LIMA Rural Development Foundation.



INCORPORATED ASSOCIATION NOT FOR GAIN Reg. No. 1988/007392/08 NPO reg. No.: 029-809

2 Forresters Lane  
Pietermaritzburg, 3201  
PO Box 11934  
Dorpspruit, 3206  
Tel: (033) 342 9043  
Fax: (033) 394 2691  
Email: [headoffice@lima.org.za](mailto:headoffice@lima.org.za)  
[www.lima.org.za](http://www.lima.org.za)  
Facebook: Lima Rural Development

The Municipal Manager  
uMgungundlovu District Municipality  
Pietermaritzburg  
c/o [mthembu@umdm.gov.za](mailto:mthembu@umdm.gov.za)  
cc Mandy Barnett ([m.barnett@sanbi.org.za](mailto:m.barnett@sanbi.org.za))

09 April 2014

Dear Sir

**uMngeni Resilience Project**

We at Lima Rural Development Foundation are honoured to be a partner in this exciting uMngeni Resilience Project. We would like to formally express our full support for the project, and confirm our interest in and commitment to participating in this project.

We look forward to playing a strong role working with UMDM and other partners in implementing the collaborative small scale agriculture element of the project.

Yours Sincerely

Duncan Stewart  
Managing Director

**Annex IV.14:** Letter of Endorsement from Built Environment Support Group.

371 Jabu Ndlovu (formerly Loop) Street  
P O Box 1309  
Pietermaritzburg 3200  
South Africa  
Tel: 27 (0)33-394 4060  
Fax: 27(0)33-394 4979  
E-Mail: [info@besg.co.za](mailto:info@besg.co.za)  
[www.besg.co.za](http://www.besg.co.za)



8 April 2014

The Municipal Manager  
uMgungundlovu District Municipality  
242 Langalibalele Street  
Pietermaritzburg 3201  
Attn. Mr TLS Khuzwayo

Dear Sbu,

**SANBI Global Adaptation Fund project – letter of support**

This serves to confirm our support for the business plan prepared for the above project. We look forward to contributing to Objective 2.1, specifically, the notion of "climate proofing" human settlements from the impact of severe storms.

Yours sincerely



Cameron Brisbane  
Executive Director

*Committed to helping people meet their habitat needs*

**Board of Directors:**

H. Bassett (Chairman), C. Brisbane (Executive Director), V. Dickey,  
M. Green, S. Keshav, J. Mitchell, N. Mthembu, S. Ndlovu

Annex IV.15: Letter of Endorsement from Umgeni Water.



*'Improving Quality of Life and Enhancing Sustainable Economic'*

**Our Reference: 2.1.3.2/UMDM**

**Enquiries: M Summerton  
0333411265**

**Date: 5<sup>th</sup> June 2014**

**The Municipal Manager  
uMgungundlovu District Municipality  
P.O. Box 3235  
Pietermaritzburg  
3200**

**Attention: Mr M Mthembu**

**PER EMAIL: [mthembum@umdm.gov.za](mailto:mthembum@umdm.gov.za)  
cc [Mandy Barnett \(m.barnett@sanbi.org.za\)](mailto:Mandy.Barnett@sanbi.org.za)**

Dear Sir

**uMngeni Resilience Project**

We at Umgeni Water are honoured to be a partner in the UMDM uMngeni Resilience Project. We would like to formally express our full support for the project, and confirm our interest in and commitment to participating in this project.

Umgeni Water has recently developed a Water Resources Management Decision Support System (WRMDSS) that will support the development of early warning system in the District. This system is proficient in data management and publication. The uMngeni Resilience Project offers an opportunity to strengthen the early warning capability of the WRMDSS, which is currently rudimentary and cannot be used operationally.

There is thus an opportunity for Umgeni Water and UMDM to move forward in a synergistic manner and further develop these data management and early warning systems for the benefit of both organisations and of vulnerable communities in the District.

Umgeni Water looks forward to playing a leading role in this regard.

**UMGENI WATER**

HEAD OFFICE • P.O.Box 9 • Pietermaritzburg 3200  
330 Burger Street • Pietermaritzburg 3201 • Republic of South Africa  
Telephone • (033) 341-1111 • Fax (033) 342-8895  
E-mail: [info@umgeni.co.za](mailto:info@umgeni.co.za)  
Internet: <http://www.umgeni.co.za>

Chief Executive: C.V. Gamede

Non-Executive Directors: • A. Makhlalutye (Chairman) • V. Gounden • N. Afolayan • T. Nkhalile • T. Sheshi • N. Chamane • G. Atkinson • Z. Matherjwa • I. Vally • V. Reddy • T. Dube • T. Zulu

Yours sincerely



**C. V. GAMEDE**

**CHIEF EXECUTIVE**

**UMGENI WATER**

HEAD OFFICE • P.O. Box 9 • Pietermaritzburg 3200  
333 Burger Street • Pietermaritzburg 3201 • Republic of South Africa  
Telephone (033) 341-1111 • Fax (033) 342-8895  
E-mail: [info@umgeni.co.za](mailto:info@umgeni.co.za)  
Internet: <http://www.umgeni.co.za>

Chief Executive: C.V. Gamede

Non-Executive Directors: • A. Mkhelutye (Chairman) • V. Gounden • N. Afolayan • T. Nkhalie • T. Sheel • N. Chamane • G. Atkinson •  
Z. Mathenjwa • I. Vally • V. Reddy • T. Dube • T. Zulu

## **Annex V: uMngeni Resilience Project Environmental and Social Risk Management Plan**

The NIE has noted its responsibility to ensure compliance with the Adaptation Fund Environmental and Social Policy (ESP). It will manage this by providing relevant materials and training during project inception, and by ensuring that all project forecasting, monitoring, evaluation, reporting and governance processes are able to detect such risks timeously so that they are managed accordingly.

The uMngeni Resilience project has been carefully designed to beneficiate local communities and the environment in its focus areas and is not expected to result in any adverse social or environmental impacts. This Environmental and Social Risk Management Plan has been developed to ensure that any unintended adverse impacts are avoided, and that, where this is not the case, they are timeously detected and appropriately mitigated.

The plan will ensure that:

- adequate capacity building for risk management is provided at project start-up;
- activity forecasts are screened for potential risks and that associated disbursement is not approved where these arise;
- project reporting processes have a particular focus on detection of environmental and social risks;
- the project oversight and governance processes are designed to ensure that risks are avoided where possible and appropriately mitigated in the unlikely event of these occurring; and
- stakeholders are aware of a mechanism to raise concerns relating to risks with the project PCC and the NIE Steering Committee should concerns relating to risks not be adequately addressed by the EE.

This is elaborated below.

### **Project Start-up**

During the project start-up phase, the NIE will engage directly with the EE and other project partners on the operating procedures that will apply to the management of the project, and that will be necessary to ensure compliance with SANBI and AF policies and procedures. An Operating Procedures Manual will be developed to support this process.

Focus will be placed on the AF ESP, and a dedicated capacity building session will be help to ensure that the EE and other project partners are able to competently detect environmental and social risks in future project planning, monitoring, evaluation and reporting processes.

In this regard, attention will be given to ensuring that projects do not impact adversely on any priority biodiversity areas or ecosystem support areas, and that there are no negative impacts on local communities, including vulnerable groups and indigenous people. No such adverse impacts are anticipated.

#### *Roles and Responsibilities:*

NIE – lead capacity building for risk screening.

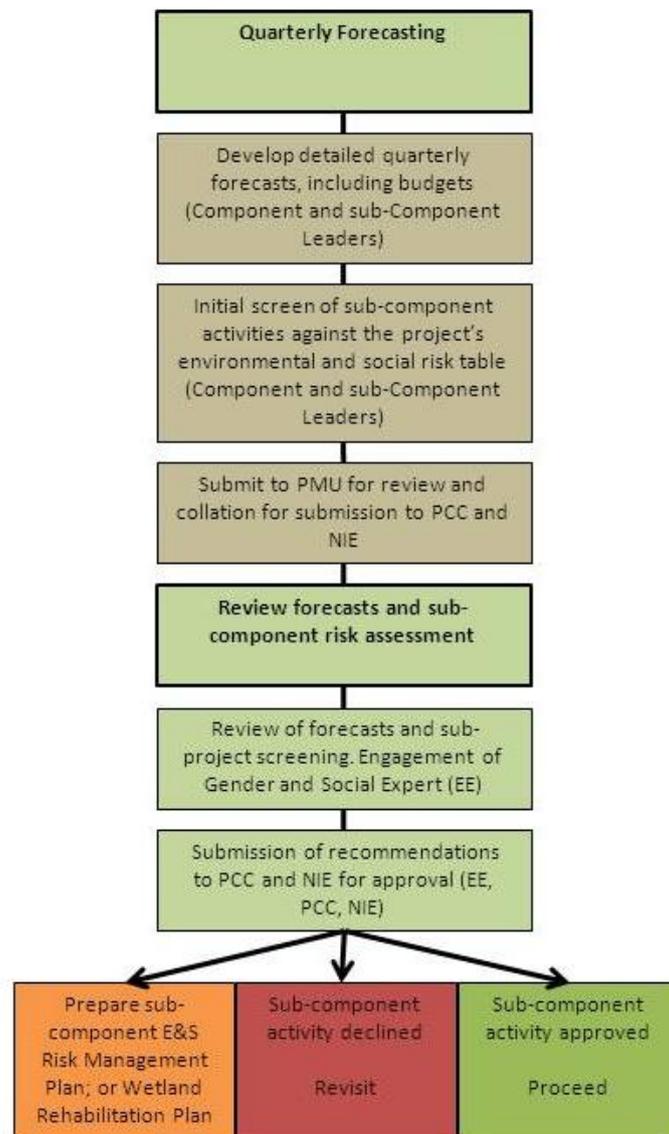
EE, sub-Executing Entities and partners, PCC – participate in and develop competencies to give effect to risk screening.

### **Empowerment of local communities**

During the participatory planning processes that are described throughout the project, local communities will be empowered to detect and mitigate environmental and social risks, as set out in the AF ESP and the project's Environmental and Social Risk Management Plan. Processes to build local community capacity to do this will be integrated in the capacity building activities that are envisaged during the early stages of each project component, and will be essential in ensuring that local communities understand the intentions of the project and can contribute to the design of sub-component activates accordingly, know their rights and are aware of the recourse they may have for raising any risk-related issues should these arise.

## Forecasting and Screening

The project's forecasting and risk management framework is set out in Figure 1 and described below.



**Figure 1:** uMngeni Resilience project sub-component risk assessment framework.

In order for funds to be disbursed, the EE will need to submit detailed quarterly forecasts to the NIE that are built up from anticipated project activities. All Component and sub-Component Leaders will be expected to do the same for the EE.

In an effort to strengthen risk screening, and to ensure that no unintended negative impacts are caused or not mitigated, all Component and sub-Component Leaders will be required to submit a basic environmental and social risk table with their forecasts. These tables will need to be submitted to the PMU as part of the forecast approval process.

In the lead up to project inception, the NIE will modify the AF's ESP table for this purpose. All risks will be included, but the table will be elaborated upon to create a set of clear and easy to understand activities that will need to be cross checked.

This risk screening process will ensure compliance with the principles of the AF ESP and National legislation.

Project activities that pose social or environmental risks that are not easily mitigated will not be approved during the detailed quarterly forecasting process.

### **Quarterly forecast review and risk assessment**

All quarterly forecasts, including risk assessments, will be reviewed by the PMU with support of the Gender and Social Expert. These reviews will be tabled with recommendations to the PCC and NIE for approval.

### **Risk Management**

Where minor risks that can easily be mitigated are detected, the EE or sub-Executing Entity may be required to develop a sub-Environmental and Social Risk Management Plan, commensurate with the severity of the risk associated with the relevant sub-component activity. The EE and/ or sub-Executing Entity will need to show that costs associated with this can be provided within the project budget, and this will need to be approved by the NIE.

Project activities that require a Basic Assessment or full Environmental Impact Assessment (EIA) as per the national EIA regulations (see Section II.E) will not be supported, due to administrative costs and potential delays.

At this stage, it is envisaged that the only exception to this will be where provincial authorisations can be obtained through South Africa's Working for Wetlands Programme. Precedents are in place for the provision of such provincial authorisations to the Working for Wetlands Programme for riparian zone activities, such as the rehabilitation or restoration of wetlands, rehabilitation and the restoration of river banks (including erosion control and the construction of low river crossings). Such provincial authorisations will need to be provided in writing before the above mentioned rehabilitation and restoration activities can take place, and are approved by the NIE.

This provision will only apply to activities that are envisaged in Component 2. All of these activities will be implemented through DEA-NRM, and in partnership with Working for Wetlands in particular, who have described the procedure associated with obtaining such provincial authorisations as follows:

#### *Annual applications for provincial authorisations to work in identified catchments:*

On an annual basis, provincial authorisations are applied for from the Department of Environmental Affairs (DEA) on a Provincial level in terms of the requirements of the National Environmental Management Act (Act 107 of 1998), as amended. This process involves the submission of Basic Assessment Reports (one per Province) to obtain a provincial level authorisation for a number of new wetland systems. Once this provincial authorisation has been received, wetland rehabilitation can be undertaken in any wetland occurring within the approved wetland systems.

The Working for Wetlands Programme Manager, Mr Umesh Bahadur, has agreed to include the uMngeni wetland system in the 2014-2015 Basic Assessment Reports for KwaZulu Natal.

The sites that will be targeted by the uMngeni Resilience Project will be included in this annual submission for the 2015/16 year, provided the project is approved by the Adaptation Fund Board. This process usually takes between 6 – 8 months. There are no costs associated with this as the process will be undertaken as part of the Working for Wetlands process.

#### *Development of wetland rehabilitation plans for specific areas:*

Once these wetland systems have been authorised via the provincial authorisation process as described above, project-specific wetland rehabilitation plans (that contain a number of wetlands occurring within the authorised wetland systems) are developed and submitted to DEA for approval.

Once the precise locations of the rehabilitation and restoration activities are identified through the participatory process that is envisaged as part of Component 2, the EE will work with the Working for Wetlands Programme to ensure that the uMngeni wetland system is included in their annual provincial authorisation process, as described above. Detailed wetland rehabilitation plans, that describe the

anticipated restoration and rehabilitation activities for the duration of the uMngeni Resilience project, will then need to be developed for the targeted areas and submitted to the DEA for approval.

Where these sites are already approved as part of provincial authorisations as described above, the process for approving these plans usually takes 2 – 3 months.

The cost for the development and submission of these plans to DEA is estimated to be in the order of USD 28,500. These costs have been included in the project budget.

The NIE is confident that the above process is manageable and affordable within the project timeframes and budget.

*Roles and Responsibilities:*

EE, sub-Executing Entities and partners – risk screening, development of wetland rehabilitation plans.

PCC – risk screening oversight.

NIE – capacity building, risk screening scrutiny and verification.

## **Reporting**

Particular attention will be given to the monitoring of unanticipated environmental and social risks in the quarterly reporting process. The EE will be expected to scrutinize sub-Executing Entity reports for such risks, and to provide the PCC and NIE with their appraisals for verification. The NIE will work closely alongside the EE to ensure that PMU staff have the capacity to undertake the required screening, and to provide the necessary scrutiny.

*Roles and Responsibilities:*

EE, sub-Executing Entities and partners – risk screening.

PCC – risk screening oversight.

NIE – capacity building, risk screening scrutiny and verification.

## **Mid-term and terminal evaluations**

Mid-term and terminal evaluations will include a focus on environmental and social risks, and ensure compliance with no-risk assessments in terms of the AF ESP.

*Roles and Responsibilities:*

Consultants – risk evaluation.

EE, sub-Executing Entities and partners – risk management responses (in the unlikely event that these should arise).

PCC – risk management oversight.

NIE – risk management verification.

## **Governance and Oversight**

The EE will report any unintended social and environmental risks that are detected through the project monitoring, evaluation and reporting processes to the NIE via the PCC, together with a proposed risk management plan that shows how these risks will be mitigated. In response to this, the NIE and PCC may propose the redirection of project funds to risk management activities, or the withholding of the next tranche of payment until satisfactory risk management actions are determined and agreed.

## **Grievance Procedures**

During project inception workshops and the component launch workshops, stakeholders will be informed that any concerns relating to the design or management of the project, including social and environmental risks, should be raised with the EE. Where these are not adequately addressed, these may be escalated to the project PCC and if necessary the NIE Steering Committee.