

## **ANNEXES**

- I. Climate analysis**
  - Annex I.1 Historical trend figures from LTAS Zonal analysis
  - Annex I.2 Analysis of downscaled climate model results for the areas of Mopani and Namakwa, South Africa, at the district municipality scale
  
- II. Vulnerability Analyses**
  - Annex II.1 Vulnerability Assessment Greater Letaba and Greater Giyani Local Municipalities, draft report
  - Annex II.2 Namakwa Profile Vulnerability Assessment
  
- III. Letters of support**
  - Annex III.1 DEA request of support for the selection of the MDM as a pilot site
  - Annex III.2 Municipal Manager letter of support of the MDM as a pilot site
  
- IV. Attendance Registers**
  - Annex IV.1 Namakwa stakeholder workshop 13 February 2014
  - Annex IV.2 Mopani meeting to introduce the Community Adaptation SGF to the MDM 14 February 2014
  - Annex IV.3 Mopani meeting with MDM executive committee 07 March 2014
  - Annex IV.4 Mopani proposal development process workshop 03 April 2014
  - Annex IV.5 Mopani water vulnerability assessment workshop 10 April 2014
  - Annex IV.6 Mopani disaster management vulnerability assessment workshop 11 April 2014
  - Annex IV.7 Mopani extension officer vulnerability assessment workshop 14 April 2014
  - Annex IV.8 Letaba CDWs vulnerability assessment workshop 22 May 2014
  - Annex IV.9 Giyani CDWs vulnerability assessment workshop 26 May 2014
  - Annex IV.10 Mopani health vulnerability assessment workshop 28 May 2014
  - Annex IV.11 Mopani stakeholder workshop 13 June 2014
  
- V. Discussion Document**
  
- VI. Community Adaptation Small Grant Facility Project Review, Oversight and Environmental and Social Risk Management Plan**
  
- VII. Other supporting documents**
  - Annex VI.1 Technical Note
  - Annex VI.2 Call for expression of interest and NIE SC TT recommendation

# Annex I: Climate analysis

## Annex I.1 Historical trend figures from LTAS Zonal analysis<sup>1</sup>

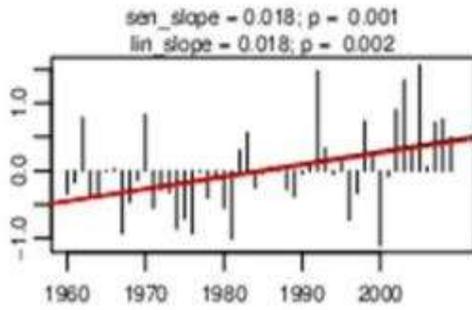


Figure 1: Average annual max temperatures – zone 1 including the Mopani area.

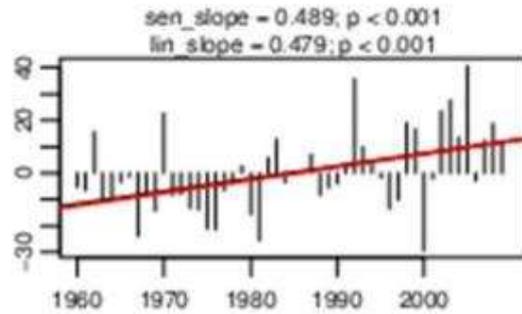


Figure 2: Average annual number of hot days for stations – zone 1 including the Mopani area.

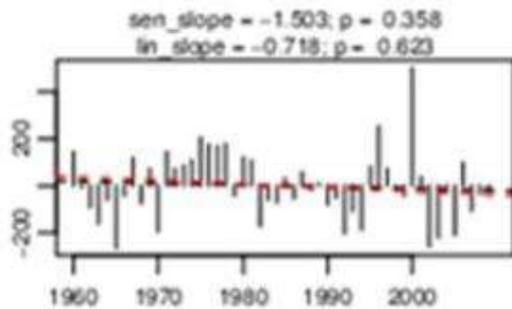


Figure 3: Average annual rainfall – zone 1 including the Mopani area.

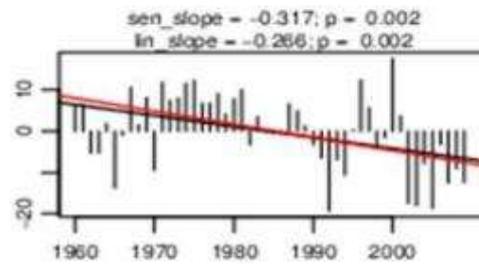


Figure 4: Annual no of rain days – zone 1 including the Mopani area.

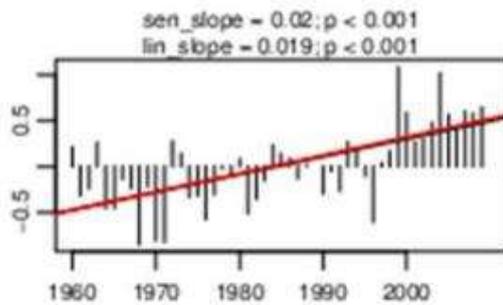


Figure 5: Average annual max temperatures – zone 6 including the Namakwa area.

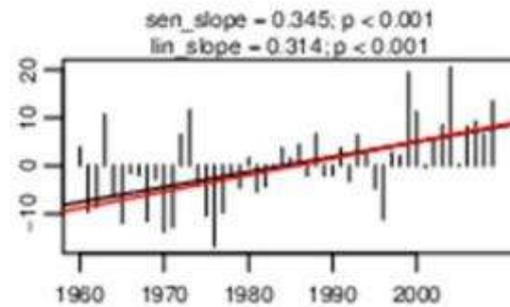


Figure 6: Average annual number of hot days for stations – zone 6 including the Namakwa area.

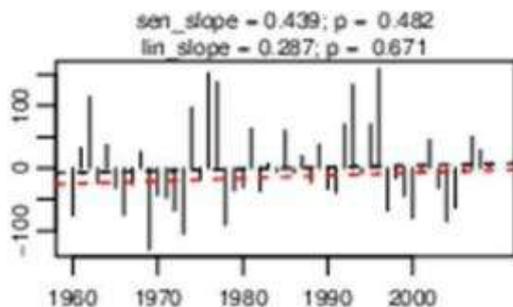


Figure 7: Average annual rainfall – zone 6 including the Namakwa area.

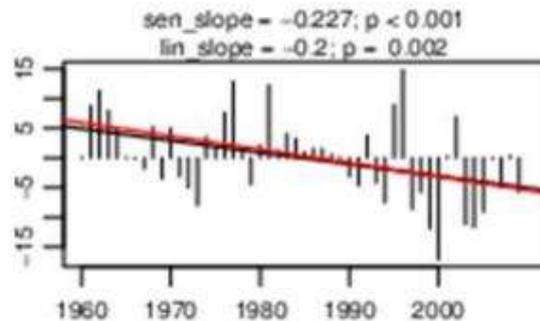
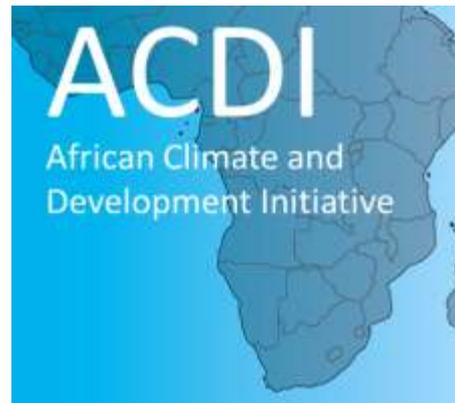


Figure 8: Annual no of rain days- zone 6 including the Namakwa area.

<sup>1</sup> Department of Environmental Affairs, 2013. Long-Term Adaptation Scenarios Research Programme (LTAS) for South Africa. Climate Trends and Scenarios for South Africa. Pretoria, South Africa.

**Annex I.2 Analysis of downscaled climate model results for the areas of Mopani and Namakwa, South Africa, at the district municipality scale**



**LONG-TERM ADAPTATION SCENARIOS  
FLAGSHIP RESEARCH PROGRAMME (LTAS)**

Analysis of downscaled climate model results for the areas of  
Mopani and Namakwa, South Africa, at the district municipality  
scale

African Climate & Development Initiative (ACDI)  
University of Cape Town (UCT)

Abridged Technical Report  
30 July 2014

Christopher Brodrick\*, Muhammad Rahiz and Mark New  
\*Christopher.Brodrick@uct.ac.za

## CONTENTS

List of Figures.....	
List of Abbreviations.....	
Acknowledgements.....	
1. Introduction.....	
2. Executive summary.....	
2.1 Mopani.....	
2.2 Namakwa.....	
3. Regional climate.....	
3.1 Mopani.....	
3.1.1 Current climate.....	
3.1.2 Regional factors that may affect variations in climate.....	
3.2 Namakwa.....	
3.2.1 Current climate.....	
3.2.2 Regional factors that may affect variations in climate.....	
4. Data.....	
4.1 Statistically downscaled projections – CSAG.....	
4.2 Dynamically downscaled projections – CCAM.....	
5. Results.....	
5.1 Mopani.....	
5.1.1 2020s.....	
5.1.2 2050s.....	
5.1.3 2080s.....	
5.2 Namakwa.....	
5.2.1 2020s.....	
5.2.2 2050s.....	
5.2.3 2080s.....	
References.....	
Appendix A: Time-series and boxplots.....	
A1 Interpretation.....	
A1.1 Mopani.....	
A1.2 Namakwa.....	
Appendix B: Spatial plots.....	
B1 Interpretation.....	
B1.1 Mopani.....	
B1.2 Namakwa.....	

**LIST OF FIGURES – PLEASE NOTE: Figures are not included in this abridged version, but are included in the full report, available on request from the NIE.**

Figure A1.1.1: The annual anomaly with respect to the model historical period – Mopani.....	
Figure A1.1.2: The DJF anomaly with respect to the model historical period – Mopani.....	
Figure A1.1.3: The MAM anomaly with respect to the model historical period – Mopani.....	
Figure A1.1.4: The JJA anomaly with respect to the model historical period – Mopani.....	
Figure A1.1.5: The SON anomaly with respect to the model historical period – Mopani.....	
Figure A1.2.6: The ANN anomaly with respect to the model historical period – Namakwa.....	
Figure A1.2.7: The DJF anomaly with respect to the model historical period – Namakwa.....	
Figure A1.2.8: The MAM anomaly with respect to the model historical period – Namakwa.....	
Figure A1.2.9: The JJA anomaly with respect to the model historical period – Namakwa.....	
Figure A1.2.10: The SON anomaly with respect to the model historical period – Namakwa.....	
Figure B1.1.1.1a1: The maximum temperature anomaly with respect to the model historical period – Mopani.....	
Figure B1.1.1.2a2: The minimum temperature anomaly with respect to the model historical period – Mopani.....	
Figure B1.1.1.3a3: The precipitation anomaly with respect to the model historical period – Mopani.....	
Figure B1.1.1.1b1: The maximum temperature anomaly with respect to the model historical period – Mopani.....	
Figure B1.1.1.2b2: The minimum temperature anomaly with respect to the model historical period – Mopani.....	
Figure B1.1.1.3b3: The precipitation anomaly with respect to the model historical period – Mopani.....	
Figure B1.1.1.1a1: The maximum temperature anomaly with respect to the model historical period – Mopani.....	
Figure B1.1.1.2a2: The minimum temperature anomaly with respect to the model historical period – Mopani.....	
Figure B1.1.1.3a3: The precipitation anomaly with respect to the model historical period – Mopani.....	
Figure B1.1.1.1b1: The maximum temperature anomaly with respect to the model historical period – Mopani.....	
Figure B1.1.1.2b2: The minimum temperature anomaly with respect to the model historical period – Mopani.....	



## LIST OF ABBREVIATIONS

<b>ACDI</b>	African Climate & Development Initiative
<b>ANN</b>	Annual
<b>CCAM</b>	Conformal-Cubic Atmospheric Model
<b>CGCM</b>	Coupled Global Circulation Model
<b>CSAG</b>	Climate System Analysis Group
<b>DJF</b>	December, January, February (Summer)
<b>ensmed</b>	Median of the model ensemble
<b>ens10</b>	10 <sup>th</sup> percentile of the model ensemble
<b>ens90</b>	90 <sup>th</sup> percentile of the model ensemble
<b>ENSO</b>	El Niño Southern Oscillation
<b>IOD</b>	Indian Ocean Dipole
<b>JJA</b>	June, July, August (Winter)
<b>LTAS</b>	Long-Term Adaptation Scenarios Flagship Research Programme
<b>MAM</b>	March, April, May (Autumn)
<b>RCP4.5</b>	Representative Concentration Pathway, radiative forcing of 4.5W/m <sup>2</sup>
<b>RCP8.5</b>	Representative Concentration Pathway, radiative forcing of 8.5W/m <sup>2</sup>
<b>rnd24</b>	Total precipitation in a 24 hour period
<b>SAHP</b>	South Atlantic High Pressure
<b>SAM</b>	Southern Annual Mode
<b>SON</b>	September, October, November (Spring)
<b>SST</b>	Sea surface temperatures
<b>TC</b>	Tropical cyclone
<b>tmax</b>	Maximum temperature
<b>tmin</b>	Minimum temperature
<b>TTT</b>	Tropical-temperate trough
<b>UCT</b>	University of Cape Town
<b>2020s</b>	2015-2035 (short-term future)
<b>2050s</b>	2040-2060 (medium-term future)
<b>2080s</b>	2075-2095 (long-term future)

## ACKNOWLEDGEMENTS

The African Climate & Development Initiative (ACDI) wish to thank the Council for Scientific and Industrial Research (CSIR) for the provision of the Conformal-Cubic Atmospheric Model (CCAM) data, and the Climate System Analysis Group (CSAG) for the provision of the statistically downscaled CSAG data. Thank you to the South African National Biodiversity Institute (SANBI) for providing GIS data.

# 1. INTRODUCTION

This technical report presents an analysis of downscaled climate model results for the areas of Mopani and Namakwa, South Africa, at the district municipality scale. Future climates are presented for the regions for the short (2020s), medium (2050s) and long (2080s) term futures, as well as for the two emission scenarios, RCP4.5 and RCP8.5.

The climate projection data is visualised by means of graphs and maps. Both regions are summarised – for maximum temperature, minimum temperature, and precipitation – for each time period.

## 2. EXECUTIVE SUMMARY

The CSAG and CCAM projection results, for both the emission scenarios, and all three of the time periods, can be summarised as follows:

For both regions, it is clear that there is less uncertainty in the temperature projections than the precipitation projections. All approaches show a distinct warming trend, growing stronger towards the end of the 21<sup>st</sup> Century. In general, there is a tendency for stronger increases in maximum temperatures than for minimum temperatures. The RCP4.5 emission pathway (mitigation) results indicate that extreme warming trends and significant precipitation changes can largely be avoided, especially towards the end of the century.

Many of the projected changes fall within the range of historical natural variability, and – especially in the long-term – the inherent uncertainty is high.

### 2.1 Mopani

As mentioned above, appreciable warming over the area is projected, in line with the recent historical climatology. In the short-term future, temperature rises will be in the range of 1-2°C, with greater warming in Summer than in the other seasons. The north, and to a lesser extent the west, is projected to warm more than the south, and east. Mid-term sees warming between 1 and 3°C, again more in the west than the east, and particularly in Spring. For the long-term future, warming in the region of between 2 and 5°C is projected, particularly in the south and in Winter, with less warming in the central regions in Autumn. The RCP8.5 emission pathway (no mitigation) results indicate very significant warming in the long-term future – up to 6°C.

Precipitation projections are less clear. In the short-term, a weak annual wetting trend is shown, especially in the east, with more robust evidence of wetting in Autumn. In the Summer and Winter months, however, weak drying is projected, mostly in the north-east and west respectively. In the Autumn of mid-term, the south-east is set to receive slightly more precipitation, whereas in Summer, the north and east are projected to become drier. With the exception of Winter, the long-term future is projected to dry more in the north than the south.

Please refer to Appendices A and B for a full suite of the visualised data for the Mopani region.

### 2.2 Namakwa

As with the Mopani region, temperature rises in the short-term future will be in the range of 1-2°C, with greater warming in Spring than in the other seasons. For all the seasons, there is a fairly strong warming bias to the north-east. Mid-term sees warming between 1 and 3°C, with greater warming in the east, particularly in Summer. Long-term sees warming between 2 and 5°C – particularly in Winter – with greater warming projected for the east than the west, across the seasons. Warming is generally less pronounced over the coastal areas of the region. That said, however, Namakwa appears to be more at risk of warming – particularly under RCP8.5 – relative to Mopani. The need for mitigation – and following as closely to the RCP4.5 pathway as possible – needs to be stressed.

For short-term precipitation, there is high variability within and between datasets. As with the Mopani region, weak annual wetting is projected, particularly to the east in Autumn, with a drying Summer.

The north-east is set to dry in Autumn, while the south-west is set to wet slightly. Mid-term shows weak wetting in Autumn, particularly in the south-west. In Spring and Summer, however, it is set to dry weakly and moderately respectively, especially in the south-west. In Autumn and Winter of the long-term, weak wetting is projected in the south-west, while weak drying is projected for the south-west in Spring and Summer.

Please refer to Appendices A and B for a full suite of the visualised data for the Mopani region.

### **3. REGIONAL CLIMATE**

Both regions will be affected by water balance changes. Increasing temperature results in higher rates of evaporation, leading to changes in atmospheric water vapour concentrations and water vapour transport (Solomon et al. 2009). This effectively alters the hydrological cycle. Although the effects of this may not necessarily relate to large-scale changes in rainfall amounts and variability, higher evaporation rates will most likely result in decreased surface water – both spatially and temporally – which will impact agriculture in particular. Accordingly, hydrological risks are set to increase, especially under the RCP8.5 pathway, where much greater warming is expected.

#### **3.1 Mopani**

##### **3.1.1 Current climate**

The Mopani District Municipality falls into the Summer rainfall zone of South Africa. Summers are warm – mean maximum and minimum temperatures in the range of 28-38°C (mean of ~30°C), and 16-22°C (mean of ~19°C) respectively – and wet, with the majority of precipitation falling in mid-Summer. Winters are mild – mean maximum and minimum temperatures are in the region of 19-26°C (mean of ~23°C) and 5-11°C (mean of ~8°C) respectively – and dry.

Annual rainfall in the Mopani district varies between 400 and 900mm, largely as a result of the complex topography. To highlight this, Tzaneen – surrounded by large hills – receives mean annual precipitation of 881mm (SA Explorer – Tzaneen climate, 2014), while Giyani only 421mm (SA Explorer – Giyani climate, 2014). There is large interannual variability, with monthly maximum rainfall sometimes reaching 340mm, in comparison to the usual 50-100 monthly totals (FAO, n.d.) for the Summer months. Causes of this variability are described in Sect. 3.1.2 below.

##### **3.1.2 Regional factors that may affect variations in climate**

Southern African mean annual precipitation shows an interannual and quasi-decadal (circa 18-year) time-scale of variability (oscillation). Summer rainfall zones that are governed largely by mesoscale convective activity – such as Mopani – are particularly affected. The oscillation manifests itself by means of nine years of above average rainfall followed by nine years of below average rainfall (Tyson & Preston-Whyte, 2000:113).

Dry spells are characterised by greater spatial variability in precipitation, increased thunderstorm activity, and thus increased hail-fall frequencies. Wet spells are characterised by more even precipitation (Tyson & Preston-Whyte, 2000:113), both in nature and in spatial extent.

Tropical temperate troughs (TTTs) are responsible for much of the Summer rainfall in the region. TTTs usually form when a surface easterly low occurs in conjunction with an upper atmosphere westerly wave (van den Heever et al., 1997). Pohl et al. (2009) found that TTTs are modulated by the El Niño Southern Oscillation (ENSO). During an El Niño phase, atmospheric circulation in the Summer rainfall zone of South Africa is influenced sufficiently to shift rain-inducing processes away from the sub-continent (Pohl et al., 2009). Generally speaking, drought conditions are associated with El Niño. Conversely, during the La Nina phase, rain-inducing processes are enhanced, thus producing wetter than normal conditions, increasing the likelihood of heavy rainfall and flood events. ENSO is therefore responsible for appreciable interannual variability in the Summer rainfall zone of South Africa.

Summer rainfall is also linked to the Indian Ocean sea surface temperatures (SSTs). When the SSTs are anomalously high, dry Summer conditions follow (Rocha & Simmonds, 1997). Conversely, anomalously low SSTs precede wetter conditions. Goddard & Graham (1999) intimate that SST variability in the Pacific Ocean may be positively correlated to SST variability in the Indian Ocean. Hence, it is possible that the ENSO phase is linked to Indian Ocean SSTs.

The Indian Ocean Dipole (IOD) is a mode of interannual variability that also manifests itself through changes in tropical ocean SST (Christensen et al., 2013). Anomalously warmer water in the east of the Indian Ocean results in cooler and drier conditions in the west (and thus, *inter alia*, the Limpopo Province), with the converse producing warmer and wetter conditions.

Climate change will increasingly affect ENSO, which in turn will influence the formation of TTTs, and Indian Ocean SSTs. Accordingly, it is possible that interannual variability in rainfall will increase further in this region. That said, the changes in the variation and spatial pattern of ENSO projected by climate models are very large, which means that there is low confidence in any particular projected change in variability (Christensen et al., 2013).

Related to SST are tropical cyclones (TCs). In recorded history, few TCs have penetrated South Africa. With the mean global increase of SSTs due to climate change, the 26°C isotherm (integral to the formation of TCs) is moving further south (Fitchett & Grab, 2014). Along with increased energy in the global atmospheric system, it is possible that these TCs may contribute towards heavy rainfall and flooding in the eastern parts of the Limpopo province, further exacerbating rainfall variability.

## **3.2 Namakwa**

### **3.2.1 Current climate**

The Namakwa District Municipality is very large – thus a single climate is difficult to characterise. The vast majority of the District falls into the Winter rainfall zone of South Africa, mostly receiving its rainfall from mid-latitude cyclones (cold fronts). It is not uncommon, however, for the extreme east of the District to experience thunderstorm-associated rainfall in the Summer months. Summers are hot – mean maximum and minimum temperatures in the range of 26-45°C (mean of ~30°C) and 12-20°C (mean of 17°C) respectively – and dry. Winters are cool – mean maximum and minimum temperatures are in the region of 10-25°C (mean of 17°C) and -8-12 (mean of 1°C) – and wet in places.

Namakwaland is classified as semi-desert, due to its low precipitation amounts. The mean annual rainfall in the Namakwa district varies between less than 100mm along the coastal belt to between 100 and 250mm inland. Much of Namakwaland is succulent Karoo, which receives low – but more importantly – largely predictable winter rainfall (Desmet & Cowling, 1999). Spatially, the largest factor affecting rainfall is the escarpment. On the coast, Port Nolloth only receives 50mm mean annual precipitation (SA Explorer – Port Nolloth climate, 2014), while just over the escarpment, Nieuwoudtville receives 245mm precipitation (SA Explorer – Nieuwoudtville climate, 2014).

### **3.2.2 Regional factors that may affect variations in climate**

One of the principal modes of atmospheric circulation variability in the Southern Hemisphere (Marshall, 2003) is the Southern Annual Mode (SAM). The SAM describes the latitudinal movement of the westerly wind belt. Changes in this movement drive the intensity and position of mid-latitude cyclones (cold fronts), particularly affecting rainfall variability in the winter rainfall zone of South Africa (and thus, *inter alia*, Namakwaland).

The western interior of South Africa – which incorporates the Namakwa region – receives in excess of 80% of possible sunshine, in both Summer and Winter (Tyson & Preston-Whyte, 2000:82). This predisposition to solar radiation makes the region particularly sensitive to increasing temperatures, particularly maximum temperature. As mentioned above, the extreme eastern parts of the District can receive Summer rainfall linked to thunderstorm activity. Because total radiation directly affects cloud-producing weather systems (Tyson & Preston-Whyte, 2000:82), this region may receive increased rainfall from such systems in the Summer months.

In the future, Namakwaland is projected to experience changes in rainfall amounts, as well as increased variability in rainfall (Midgley & Thuiller, 2007). The South Atlantic High Pressure (SAHP) largely drives the Benguela current (Tyson & Preston-Whyte, 2000:178), which has an enormous influence on the climate of Namakwaland. Also linked to the SAHP is the West Coast Trough, which produces widespread rain over the western parts of South Africa, from early Summer to Autumn (Tyson & Preston-Whyte, 2000:201). Under current climate changes, increases in energy to the system may affect the SAHP, thus having a direct effect on the area's climate and particularly rain-producing systems.

As a result of a possibly strengthening SAHP, the frontal systems that provide the majority of Namakwaland with its Winter rainfall are projected to move further south, but also increase in intensity. This may result in fewer rainfall events, but with heavier rainfall during such events. This will further increase the variability of rainfall in the region.

It is important to note that climate models are not always able to accurately capture complex ocean-atmosphere interactions, and how these might change in the future. Many of the drivers of variability mentioned above are complex and there is much uncertainty as to how exactly they will respond to climate change in the future. Downscaling rainfall in particular is still limited by our understanding of these large-scale drivers of variability.

## **4. DATA**

### **4.1 Statistically downscaled projections – CSAG**

A statistical downscaling technique, downscaled to 0.5° by 0.5° resolution, has been applied for temperature and precipitation fields over the regions. This was done for both the RCP emission scenarios, for each one of a suite of ten different CGCMs.

### **4.2 Dynamically downscaled projections – CCAM**

A dynamical downscaling technique, downscaled to 0.5° by 0.5° resolution, has been applied for temperature and precipitation fields over the regions. A three-model suite was used for RCP4.5, whilst a two-model suite was used for RCP8.5. Further CCAM model information, as well as its strengths and weaknesses, can be found in the previous LTAS report: *Climate Trends and Scenarios for South Africa, LTAS Phase 1, Technical Report (no. 1 of 6)*.

The complex topography over small distance scales in the regions – particularly Mopani – must be taken into account when interpreting the model results. The downscaled regional models are unable to accurately resolve large changes in topography over small distance scales.

By way of example: In theory, Tzaneen (mean annual rainfall 881mm) and Giyani (mean annual rainfall 421mm) may fall into the same grid cell at the resolution used in this project (2.5 x 2.5°). Therefore, both sub-regions would share the same grid cell characteristics, whereas in the reality, their rainfall is rather different, due to the topography. This must be borne in mind when assessing the spatial results.

## **5. RESULTS**

### **5.1 Mopani**

#### **5.1.1 2020s**

##### **5.1.1.1 Temperature**

Annually, maximum temperature is projected to increase by between 1 and 2°C, and minimum temperature by 1°C. For maximum temperature, Summer is projected to warm more significantly than

the other seasons, especially in the north and west. The west is projected to experience greater maximum temperatures than the east.

### **5.1.1.2 Precipitation**

Annually, a weak wetting trend is projected, much more so in the east. This is particularly evident in Autumn, which shows a strong trend of wetting, but is also accompanied by high variability within and between datasets. Summer and Winter, however, display weak drying trends, particularly in the north-east and west respectively.

## **5.1.2 2050s**

### **5.1.2.1 Temperature**

On an annual basis, maximum temperature is projected to increase by between 1 and 3°C, and minimum temperature by 2°C. For maximum temperature, Summer is projected to warm more significantly than the other seasons, particularly in the west, while for minimum temperature, Winter is projected to warm less significantly. Furthermore, both annually and in Spring, minimum temperature is set to rise more in the west than in the east. It is worth noting that for maximum temperature, CCAM RCP 8.5 dataset displays a large anomaly range, as well as greater absolute magnitude of anomaly.

### **5.1.2.2 Precipitation**

There is no appreciable annual trend for precipitation. In Autumn, a moderate wetting trend is projected, particularly in the south-east, whereas in Spring and Summer there exists a weak drying trend, in the case of the latter, to the north and east. Winter shows very high variability between the datasets, some showing wetting and others drying.

## **5.1.3 2080s**

### **5.1.3.1 Temperature**

Annually, maximum temperature is projected to increase by between 2 and 5°C and minimum temperature by between 2 and 4°C. For the 2080s, the datasets begin to diverge appreciably from one another, with large anomaly ranges. In Winter, minimum temperature is projected to rise more significantly than the other seasons, particularly in the south. The central part of the region is projected to experience reduced warming in Autumn.

### **5.1.3.2 Precipitation**

A weak drying trend is projected, on an annual basis. Summer, Spring and Autumn are projected to see more drying in the north than the south. Winter is set to dry moderately, with low variability between the datasets.

## **5.2 Namakwa**

### **5.2.1 2020s**

#### **5.2.1.1 Temperature**

Annually, maximum temperature is projected to increase by between 1 and 2°C, and minimum temperature by 1°C. For maximum temperature, Summer, Winter and Spring show a warming bias to the north-east; for minimum temperature, this holds true for all the seasons. In Autumn, maximum temperature is projected to rise less significantly than the other seasons, while in Spring, minimum temperature is projected to rise more significantly.

### **5.2.1.2 Precipitation**

A weak wetting trend is projected on an annual basis, and particularly in the east in Autumn, where there is a fairly strong trend. Furthermore, the north east is set to dry in Autumn, while the south-west is projected to wet slightly.

In Summer, rainfall is projected to decrease slightly in some projections, while in others, increase slightly. It must be noted, however, that there is high variability within and between these datasets.

## **5.2.2 2050s**

### **5.2.2.1 Temperature**

On an annual basis, maximum temperature is projected to increase by between 1 and 3°C, and minimum temperature by 2°C. For both maximum and minimum temperature, Summer is projected to warm more significantly than the other seasons. There is a fairly strong trend of increased warming in the east, and to a lesser extent north-east, in all the seasons.

### **5.2.2.2 Precipitation**

Annually, a very weak wetting trend is projected, particularly in Autumn and Winter, and in the south-west. In Spring and Summer, however, it is set to dry weakly and moderately respectively, especially in the south-west. Furthermore, there is low variability between the datasets, indicating higher confidence.

## **5.2.3 2080s**

### **5.2.3.1 Temperature**

An increase of between 2 and 5°C in maximum temperature, and between 2 and 4°C in minimum temperature, is projected on an annual basis, with a fairly strong bias towards the east. For both maximum and minimum temperature, the RCP 8.5 datasets both display a large anomaly range, as well as greater absolute magnitudes of anomaly. For maximum temperature, Winter is projected to warm more significantly than the other seasons. For both Winter and Summer, minimum temperatures are set to rise more significantly than the other seasons.

### **5.2.3.2 Precipitation**

There is no appreciable trend in annual precipitation. In Autumn and Winter, however, weak wetting is projected in the south-west, while weak drying is projected for the south-west in Spring and Summer.

## REFERENCES

- Christensen, J.H., K. Krishna Kumar, E. Aldrian, S.-I. An, I.F.A. Cavalcanti, M. de Castro, W. Dong, P. Goswami, A. Hall, J.K. Kanyanga, A. Kitoh, J. Kossin, N.-C. Lau, J. Renwick, D.B. Stephenson, S.-P. Xie and T. Zhou, 2013: Climate Phenomena and their Relevance for Future Regional Climate Change. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
- Desmet, P.G., & Cowling, R.M. 1999. Biodiversity, habitat and range-size aspects of a flora from a winter-rainfall desert in north-western Namaqualand, South Africa. *Plant Ecology*, 142: 23-33.
- FAO. n.d. Drought impact mitigation and prevention in the Limpopo River Basin - Chapter 2: Biophysical characteristics. *FAO Natural Resources Management and Environment Department*. [Online]. Available: <http://www.fao.org/docrep/008/y5744e/y5744e05.htm#TopOfPage> [17 July 2014].
- Fitchett, J.M., & Grab, S.W. 2014. A 66-year tropical cyclone record for south-east Africa: temporal trends in a global context. *Int. J. of Climatol.* (2014). Published online in Wiley Online Library.
- Goddard, L., & Graham, N.E. 1999. Importance of the Indian Ocean for simulating rainfall anomalies over eastern and southern Africa. *Journal of Geophysical Research*, 104(D16): 19,099-19,116.
- Marshall, G.J. 2003. Trends in the Southern Annular Mode from Observations and Reanalyses. *Journal of Climate*, 16: 4134-4143.
- Midgley, G.F., & Thuiller, W. 2007. Potential vulnerability of Namaqualand plant diversity to anthropogenic climate change. *Journal of Arid Environments*, 70: 615-628.
- Pohl, B., Fauchereau, N., Richard, Y., Rouault, M., & Reason, C.J.C. 2009. Interactions between synoptic, intraseasonal and interannual convective variability over Southern Africa. *Climate Dynamics*, 33: 1033-1050.
- Rocha, A., & Simmonds, I. 1997. Interannual variability of south-eastern African summer rainfall rainfall. Part 1: Relationships with air-sea interaction processes. *International Journal of Climatology*, 17: 235-265.
- Solomon, S., Plattner, G.-K., Knutti, R., & Friedlingstein, P. 2009. Irreversible climate change due to carbon dioxide emissions. *Proceedings of the National Academy of Sciences*, 106(6): 1704-1709.
- South Africa Explorer. 2014. *Giyani climate*. [Online]. Available: [http://www.saexplorer.co.za/south-africa/climate/giyani\\_climate.asp](http://www.saexplorer.co.za/south-africa/climate/giyani_climate.asp) [16 July 2014].
- South Africa Explorer. 2014. *Nieuwoudtville climate*. [Online]. Available: [http://www.saexplorer.co.za/south-africa/climate/nieuwoudtville\\_climate.asp](http://www.saexplorer.co.za/south-africa/climate/nieuwoudtville_climate.asp) [16 July 2014].
- South Africa Explorer. 2014. *Port Nolloth climate*. [Online]. Available: [http://www.saexplorer.co.za/south-africa/climate/port\\_nolloth\\_climate.asp](http://www.saexplorer.co.za/south-africa/climate/port_nolloth_climate.asp) [16 July 2014].
- South Africa Explorer. 2014. *Tzaneen climate*. [Online]. Available: [http://www.saexplorer.co.za/south-africa/climate/tzaneen\\_climate.asp](http://www.saexplorer.co.za/south-africa/climate/tzaneen_climate.asp) [16 July 2014].
- Tyson, P.D., & Preston-Whyte, R.A. 2000. *The Weather and Climate of Southern Africa*. Cape Town: Oxford University Press.
- Van den Heever, S.C., D'Abreton, P.C., & Tyson, P.D. 1997. Numerical simulation of tropical-temperate troughs over southern Africa using CSU RAMS model. *South African Journal of Science*, 93: 359-365.

# APPENDIX A: TIME-SERIES AND BOXPLOTS

## A1 Interpretation

### Bar graphs

*For a given scenario and dataset:*

The first column represents the historical period.

The second to fourth columns represent the 2020s, 2050s and 2080s, respectively. The bars display the greatest anomaly within the dataset. The anomaly represents the range between the ensemble maximum minus the historical mean, and the ensemble minimum minus the historical mean. Therefore, this gives an indication of the inherent uncertainty in each case.

### Time-series (line graphs)

*For a given scenario and dataset:*

The area making up each 'line' displays the range of the anomaly within the dataset. The anomaly represents the range between the ensemble maximum minus the historical mean, and the ensemble minimum minus the historical mean. Therefore, this gives an indication of the inherent uncertainty in each case.

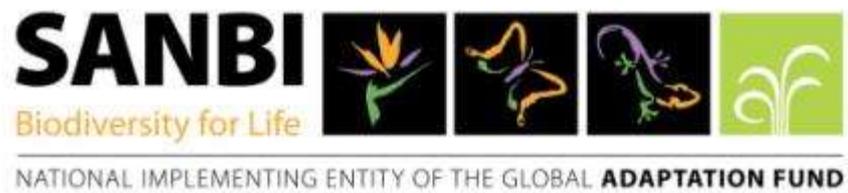
The two dashed lines in the first column (historical period) indicate two standard deviations above and below the models' mean, respectively.

Temperature anomaly in °C and precipitation anomaly is % change.

*Note: For the Winter months (core JJA), the CCAM raw data was populated almost exclusively with zeroes. It appears as if there is a fault of sorts in the raw data. Please interpret the CCAM spatial plots for this period accordingly.*

## Annex II: Vulnerability Analyses

### Annex II.1: Vulnerability Assessment Greater Letaba and Greater Giyani Local Municipalities



---

# Vulnerability Assessment Greater Letaba and Greater Giyani Local Municipalities

---

July 2014

Prepared by Katinka Waagsaether

**Table of Contents**

- 1. Introduction & Background.....
- 2. Literature review.....
- 3. Theoretical framework and Methodology.....
- 4. Assessing the multiple factors shaping current vulnerability .....
- 4.1 Livelihoods .....
- 4.2 Sectors .....
- Agriculture .....
- The Water Sector .....
- Health .....
- Disaster Management .....
- Summary of sectoral analysis .....
- 5. Vulnerability to climate change .....
- 5.1 Livelihoods .....
- Farming .....
- Hawkers .....
- Health .....
- Infrastructure .....
- 5.2 Sectoral .....
- Agriculture .....
- The Water Sector .....
- Health .....
- Disaster Management .....
- 6. Vulnerability to climate change in the context of current vulnerability .....
- 7. Concluding remarks and recommendations .....
- 8. References.....

# 1. INTRODUCTION & BACKGROUND

In its most simple terms vulnerability can be defined as “The degree to which human and environmental systems are likely to experience harm due to perturbation or stress” (Luers et al, 2003: 255). In the context of climate change, for which evidence is now unequivocal from the current warming trends of the climate system (IPCC, 2013), the understanding of how human and environmental systems are likely to experience harm due to a changing climate has become increasingly important. This is because in order to respond to impacts it is important to understand the dynamics that shape the impacts of climate change, as well as the current ability to respond. This will not only work to ensure that the responses that are developed for climate change are as appropriate as possible, it will also work to ensure that money and efforts are focused on the sectors and activities that need it the most.

The approaches to assessing vulnerability are many and they vary widely. As such they also provide very different insights, from an understanding of the extent to which Africa is more vulnerable to climate change than Europe, to an understanding of the degree to which tomato production in Limpopo is vulnerable to climate change. In choosing a vulnerability assessment approach it is therefore important to consider the goal of the assessment, the level of analysis and the data that is available.

This vulnerability assessment set out to create an understanding of the local dynamics shaping livelihoods and sectors in Greater Letaba Local Municipality (Letaba) and Greater Giyani Local Municipality (Giyani), and how climate change might impact these. The background for the assessment was to provide the foundation on which priority sectors for climate change adaptation could be chosen, and to ensure that the climate change adaptation responses are based on a sound understanding of the local dynamics and the needs as identified by local stakeholders.

## Greater Letaba and Greater Giyani Local Municipalities



**Figure 1:** Left: Illustrating the location of Mopani District Municipality in South Africa. Right: Outlining the five local municipalities in Mopani District Municipality.

Letaba and Giyani are located in the north eastern part of South Africa, forming two out of five local municipalities in Mopani District Municipality in the Limpopo Province. The area falls within the summer rainfall region of South Africa, where the majority of rainfall falls in the period October through March. Rainfall often comes in the form of convection thunderstorms, and can vary significantly at the inter-decadal scale due to the influence of El Nino Southern Oscillation thunderstorms (Davies et al, 2010). The annual average rainfall for the Letaba Catchment, within which the Mopani District is located, is 612 mm (MDM, 2010). But there is a west - east rainfall gradient, with the mountainous areas of the west receiving around 2000 mm a year and the dryer low veld areas in the east receiving around 400 mm a year (MDM, 2010). Frost is a rare occurrence in Mopani District, and annual average temperatures also show a slight west-east gradient, with an average of 21°C in the Mountainous areas in the west and an average of 25°C in the dry low veld areas in the east (MDM, 2010). As reflected in the rainfall and temperatures gradients landscapes vary greatly, from the lush mountainous areas of western Letaba to the plains and lowlands of eastern Giyani.

While population size is relatively similar in the two local municipalities, 212 701 in Letaba and 244 217 in Giyani, densities are a lot higher in Letaba, whose total land area is 1 891 km<sup>2</sup> versus Giyani's 4 172 km<sup>2</sup>. Under the Apartheid Regime, large areas of the Mopani District was part of the so called Gazankulu and Lebowa "homelands", and a lot of the land is today held in trust for tribal and community authorities (MDM, 2008). Accordingly, traditional authorities still play an important role in decisions around land made available for economic purposes or to individuals for settlements (MDM, 2008). Land ownership is still a contentious issue in Giyani and Letaba, and while only 186 km<sup>2</sup> of Giyani is currently subjected to claims (GGLM, 2013), as much as 48% of Letaba's total land area is subjected to land claims (GLLM, 2013).

Key economic sectors in Giyani, both formal and informal, include: the public sector (government services); agriculture (maize, vegetables, tomatoes, beef); retail and services; transport (mainly taxi and bus industry); and tourism (MDM, 2008). Agriculture is the backbone of the local economy of Giyani, and there are vast areas of arable land and irrigation schemes (GGLM, 2013). Yet agricultural products have recently been found to undergo serious decline due to drought and shortage of water availability (GGLM, 2013).

In Letaba key sectors include: public sector (government services); agriculture, forestry and fishing; wholesale, retail trade, catering and accommodation; transport and communication; and finance and business services (GLLM, 2013). Giyani has the lowest employment rate at 39.6% (GGLM, 2013), versus Letaba where 58.8% are employed (GL, 2013). Agriculture is one of the major employers in Letaba, with large areas of moderate arable land, much of which is currently under cultivation, mainly located in the central parts of the municipality (GLLM, 2013). Commercial farming products mainly comprise mangoes, citrus and avocados, and the municipality is also the location for the largest tomato farm in Southern Africa, ZZ2. The Northern and North Western parts of Letaba feature marginal potential arable and non-arable land, while forestry plantations are located in the southern parts of the municipality (GLLM, 2013).

Scattered villages and limited infrastructure makes service delivery challenging for Letaba and Giyani. The role out of sanitation for all areas of the local municipalities is progressing, yet lack of access to basic sanitation is still a major problem that leads to environmental and health challenges in both rural and urban areas (MDM, 2008). In Letaba 12% have access to flush toilets, while the majority, 69%, have pit toilets and 18.6% do not have access to any toilet system (Letaba, 2013). While the most recent statistics for Giyani (Census 2011) are not available, it can be expected that sanitation access has improved over the last few years the 2007 Census which showed that 54.9% had no access to toilet systems (GGLM, 2013). Refuse removal still has a big backlog in both municipalities, with removal generally being focused on urban areas. In Letaba only 4 out of 80 villages have access to municipal refuse removal (GLLM, 2013), and in Giyani only 13% of households have access to municipal removals (GGLM, 2013). For areas that do not have access to municipal removals, households generally use communal dumps or their own dumps. Access to electricity on the other hand is generally high, 91% in Letaba and 81% in Giyani<sup>2</sup> (GLLM, 2013; GGLM, 2013).

Water is a challenge across both Letaba and Giyani. Both areas are characterised by low rainfall, especially in the low lying areas of Giyani, and there is stiff competition for water with agriculture consuming around 70% of the water in Mopani District Municipality (MDM, 2008). In Letaba communities often face situations where they have to use contaminated water from contaminated natural sources, leading to spread of for example bilharzias disease (GGLM, 2013). The majority of households access piped water, 87% of households in Giyani and 91% of households in Letaba, though the majority of these are communal taps (GGLM, 2013; GLLM, 2013 – based on StatsSA 2011 Census). This means that accessing water is a time consuming and strenuous task for many people in Giyani and Letaba.

## 2. LITERATURE REVIEW

In a spatially focused study, Chapter Four of the Technical Report 2013/14 of the Financial and Fiscal Commission (Turpie and Visser, 2012) rates the climate change vulnerability of local municipalities in South Africa. The assessment considers vulnerability in terms of exposure, sensitivity and adaptive capacity, using an index based approach. Out of the 226 South African local municipalities, 20 are

---

<sup>2</sup> Note that the statistics only show access to energy for lighting, and do not reflect the energy used for cooking or heating

rated at five, the highest vulnerability score. Two of these local municipalities are Greater Letaba Local Municipality (Letaba) and Greater Giyani Local Municipality (Giyani). The vulnerability assessment finds that rural municipalities are generally more vulnerable than other types of municipalities, and that rural municipalities in former homeland areas are particularly vulnerable (Turpie and Visser, 2012). The most vulnerable areas were also found to generally contain most of the country's rural poor, which can in turn be linked to the lack of socio-economic capacity seen as an important part of adaptive capacity (Turpie and Visser, 2012). Letaba and Giyani fit these generalisations, being located in former homeland areas and featuring very low income levels, with around 90% of the population in both Letaba and Giyani earning less than R800 a month (MDM, 2006-2013). The municipal vulnerability assessment also highlights that high exposure in parts of the north eastern parts of the country can be contributed to changes in temperature, rainfall and increased exposure to malaria (Turpie and Visser, 2012).

In South Africa health risks likely to be aggravated by climate change include both vector-borne diseases such as malaria, and communicable and non-communicable diseases (DEA, 2013b). Infections carried by vectors, such as malaria, are climate sensitive, and a recent study done in Limpopo found that temperatures greatly influence the incidence of disease (Thompson et al, 2012). Focused on children's health, the study found that unit increases in temperatures led to over 100 percent increase in incidents of infections such as malaria and diarrhea (Thompson et al, 2012).

Malnutrition is also highlighted as one of the key climate related health risks in South Africa, with strong linkages to the water and agriculture sectors (DEA, 2013b). Climate change is expected to affect food systems, and lead to food shortages and increasing food prices (DEA, 2013b). The IPCC (2014) expects that rising food prices resulting from reduced agricultural production is likely to have the greatest effect on the wage-labor dependent poor households in Africa, who are generally net buyers of food. In turn, compromised access to food can ultimately lead to malnutrition. As was found by Turpie and Visser in the Technical Report 2013/14 of the Financial and Fiscal Commission (2012), a generally warmer and drier climate in South Africa is expected to largely have negative effects on South African agriculture and food security. Women from poor households can be seen as particularly vulnerable in this regard, as they tend to be the shock absorbers during food crisis, skipping meals to ensure that their family members do not go hungry (Groenmeyer, 2013). Women have also been found to spend more of their income on food purchases than men, and are therefore set to be affected disproportionately by fall in agricultural production (Maponya and Mpandeli, 2012a).

The issue of food security, with its strong links to agricultural production and access to water resources, can thus be seen as a critical issue when addressing climate change impacts in Giyani and Letaba. The Limpopo Province has been found to be particularly vulnerable to climate variability and change, due to agricultural dependence on climatic conditions, especially on the quality of the rainy season (Maponya and Mpandeli, 2012a). This vulnerability is particularly for dry-land producers, as irrigated production is generally less vulnerable to climatic conditions (Maponya and Mpandeli, 2012b). A study looking at tomato production in Limpopo found there to be a correlation between temperature and tomato production, and noted that for farmers without advanced technology and good modern agricultural practices climate change could experience negative impacts on tomato yields (Tshiala and Olwoch, 2010).

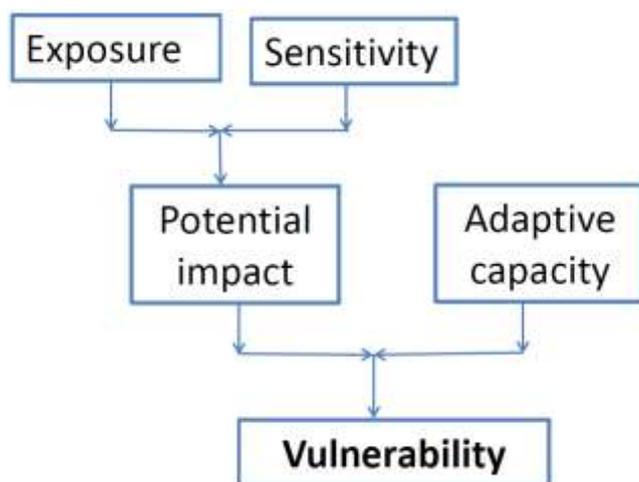
Limpopo is one of the poorest provinces in the country (Maponya and Mpandeli, 2012b), and climate change impacts on agriculture will take place in the context of developmental stresses, including poverty and unemployment (Maponya and Mpandeli, 2012a). As was highlighted by Disaster Risk Assessments conducted for Giyani and Letaba (NETGroup South Africa, 2012a; NETGroup South Africa, 2012b) key items contributing to the current vulnerability status of communities include poverty, health, water and road infrastructure. This reflects how developmental issues, the lack of economic development and basic services, make communities in Letaba and Giyani more vulnerable to disaster. Accordingly, the Disaster Risk Assessments propose the implementation of poverty alleviation programmes as a key means to improve community resilience to deal with disaster. Key priority threats that communities in Letaba and Giyani were found to be vulnerable to include fires, drought, floods, hazardous material, deforestation, epidemics/disease, water pollution, dam failure, agricultural disease, sand mining and extreme weather (NETGroup South Africa, 2012a; NETGroup South Africa, 2012b). Current disaster threats thus include a combination of climatic and human induced threats. Proposed responses, additionally to poverty alleviation, include a number of precautionary responses: precautionary and proactive measures to deal with veld fires; drought

management practices, farm management practices to avoid spreading of epidemics and sustainable farm management; and early warning systems and information dissemination systems (NETGroup South Africa, 2012a; NETGroup South Africa, 2012b).

While there is some understanding of the dynamics that shape the current vulnerability of communities and people in Giyani and Letaba, this research will provide an in-depth understanding of local vulnerabilities and of vulnerability to climate change more specifically. It will expand on the health and agricultural focused climate change research already conducted in the Limpopo province, and provide a broader yet more spatially focused picture of climate change impacts and vulnerabilities.

### 3. THEORETICAL FRAMEWORK AND METHODOLOGY

The vulnerability analysis was built around the understanding of vulnerability as a result of potential impacts and adaptive capacity, as outlined in figure 2 below.



**Figure 2:** Outline of vulnerability (based on outline in GIZ, 2011)

For the purpose of this assessment the concepts above are defined as follows:

- **Exposure:** The degree of stress a system is subjected to.
- **Stressor:** Events and trends, often not climate-related, which have an important effect on the system exposed and can increase vulnerability to climate-related risk (IPCC, 2014).
- **Sensitivity:** The degree to which a system or species is affected, either adversely or beneficially, by stress.
- **Impacts:** Effects on lives, livelihoods, health status, ecosystems, economic, social and cultural assets, services (including environmental), and infrastructure (IPCC, 2014).
- **Adaptive capacity:** The ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences (IPCC, 2014).

This vulnerability assessment is grounded in a participatory approach, with the information for analysis being gathered through a number of workshops conducted with stakeholders from Letaba and Giyani. Through participatory workshops stakeholders were asked to assess local vulnerability by using the above concepts to various extents.

The workshops were based on the adaptation planning cycle, where understanding of current and future vulnerability provides the foundation for climate change adaptation planning. This means that, an important first step is to understand current vulnerability. As people live and work in multi-stressor environments, and are constantly dealing with climatic as well as other stressors, this analysis focused on vulnerability to multiple stressors, including climatic, socio-economic and political.

Having built that foundation, understanding some of the dynamics of the present, the next step was to assess vulnerability to projected climate change. Only with that understanding of current vulnerability and vulnerability to future climate change could one identify appropriate adaptation responses, which further work to build an understanding of relevant sensitivities and the adaptive capacities that are required to create more resilient communities in the face of climate change.

Two different methodological approaches were used for these workshops, a livelihoods and a sectoral approach. These two approaches are seen as providing complimentary yet somewhat differential information. The two approaches are outlined in more detail below.

### ***Livelihoods approach***

**Number of workshops:** Two, one in Letaba and one in Giyani  
**Participants targeted:** Community Development Workers (CDWs)<sup>3</sup> from Letaba and Giyani  
**Workshop participants:** 28 at Letaba<sup>4</sup>  
 22 at Giyani

The livelihoods workshops were grounded in the definition of livelihoods as the entitlements and assets to which people have access (IPCC, 2014). Such assets can be categorized as human, social, natural, physical, or financial (IPCC, 2014). By identifying the main livelihood activities, the challenges facing those activities and the underlying causes and possible solutions to those challenges, it was possible to build some understanding of not only the activities but also the capabilities and assets that livelihoods in Letaba and Giyani are comprised of.

Accordingly the workshops had the following three main steps:

- Outlining the main activities from which people in Letaba and Giyani currently make a living, and rate the most important of those in terms of the number of people making a living from that activity.
- Creating an understanding of the main stressors that people currently face in conducting those activities, the underlying causes of these challenges and the possible solutions to deal with the stressors.
- Exploring how climate change might impact the activities through which people make a living.

While step one was conducted in plenary the workshop, participants worked through step two and three in groups, and the findings of each group was then shared back to plenary. In the workshops stressors were referred to as challenges, in order for it to be easier for the group to relate to.

### ***Sectoral approach***

**Number of workshops:** Four, at Municipal venues in Giyani and Tzaneen  
**Sectors targeted:** Agriculture, water, health and disaster management  
**Participants targeted:**

Agriculture:	Extension officers
Water:	Water supply and waste management practitioners
Health:	Environmental health practitioners
Disaster management:	Municipal officials working in disaster management

**Workshop participants:**

Agriculture:	11
Water:	12
Health:	17
Disaster management:	15

The approach of the sectoral workshops was developed based on the methodologies developed by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH (2011) and UK Climate Impacts Programme (UKCIP) (2009). While based on the systematic step by step approaches outlined by GIZ and UKCIP, it was developed to fit the six hours' time frame of each workshop and the fact that to the large majority of participants climate change was a new theme altogether.

<sup>3</sup> For the Letaba Livelihoods Workshop the Local Municipality also invited community representatives from the environmental projects, and due to a low turnout from CDWs these project representatives made up the majority of participants. Though not the initial intention, this still provided an opportunity to get further insights from community members across Letaba.

<sup>4</sup> While 28 people signed up on the attendance register for the workshop, it is important to note that there were only on average between 15 and 20 people participating throughout the day.

The methodology was focused on the following three main steps:

1) *Assessing vulnerability to current stress*

Participants were asked to assess the vulnerability of key systems that they work with in their sector, guided by a table with the following headings:

**Table 1: Table used in group work on current vulnerability**

Exposure (stressor: climatic and other)	System/ activity	Impacts	Consequences	Current sensitivity	Current adaptive capacity
---	------------------	---------	--------------	---------------------	---------------------------

2) *Assessing vulnerability to future stress*

The participants were presented with an overview of the climate change projections for the Mopani area, together with historical trends. Based on the main messages that came out from the historical trends and the projections, they were then asked to go back to the vulnerability lens, and look at how the systems they work with are vulnerable to climate change.

**Table 2: Table used for group work on vulnerability to climate change**

Exposure (climate change trends)	System/ activity	Impacts	Consequences	Current sensitivity	Current adaptive capacity
----------------------------------	------------------	---------	--------------	---------------------	---------------------------

3) *Identifying climate change adaptation responses*

Having developed some understanding of the current vulnerabilities, and vulnerabilities to future stress, the groups could start exploring climate change adaptation responses. The groups were asked to take the flipcharts on which they had outlined the vulnerability to climate change, and identify possible responses to deal with each of the identified exposures, the climate change trends, taking the possible impacts and consequences into account.

Workshop participants worked in groups throughout the day. The workshop process was such that for each step the participants were given a short contextual presentation, followed by an explanation of the group work that would follow.

***Climate change projections and observed trends used for livelihoods and sectoral approaches***

An important component of both the livelihoods and sectoral approach was the presentation of climate change trends. The trends presented at the workshops were based on the Long Term Adaptation Scenario (LTAS) report on Climate trends and scenarios (DEA, 2013a). Due to the limited experience of workshop participants in interpreting climate information, there was focus on making the message as simple yet robust as possible. Accordingly the message was based on both the historical trends and the projections outlined in the LTAS report. For the initial workshops the following main messages, referred to as climate change trends, were communicated, following an outline of historical trends, projections and related uncertainties:

**Increasing temperatures:**

- Increase in average temperatures
- Increase in the number of extremely warm days

**Uncertainty in rainfall:**

- Unpredictable change in annual average
- Less frequent but **more intense** rainfall events
- Longer **dry spells** in-between

These were amended and simplified somewhat for the two livelihoods workshops:

- ***Increase in number of extremely hot days***
- ***Increase in average temperatures***
- ***More intense heavy rainfall events***

Importantly, the communication around these climate change trends was that there is a lot of uncertainty related to future projections, both in terms of the Global Circulation Models and the future trajectory of greenhouse gas emissions. The fact that there is more certainty relating to the temperature trends than to the rainfall trends was also communicated.

### ***Methodological challenges***

The six hour time frame of each workshop limited the extent to which time could be spent on collectively understanding and exploring all the climate change related concepts, and the issue of climate change itself. It was therefore somewhat challenging to ensure that all the concepts were understood correctly, and this had some impact on the quality of the data collected. In the sectoral workshops sensitivity turned out to be a particularly challenging concept, while current adaptive capacity was often confused with desired adaptive capacity. The differentiation between impacts and consequences was also challenging for some participants. These challenges are therefore reflected in the differential information analysed below for the different sectors.

A number of different languages and dialects are spoken across Letaba and Giyani, including Northern Sotho, Tsonga and Afrikaans. English provided a common language for the workshops, but some time was taken to explore whether there are any words for vulnerability in Northern Sotho, Tsonga or Afrikaans. The difficulty faced in finding and agreeing on translations reflects the challenges related to working with diverse groups with various mother tongues.

At the livelihoods workshop in Letaba language was a challenge, as it turned out that participants were not comfortable to communicate in English. While co-facilitators were able to provide translation, this proved challenging and time consuming. Furthermore, some workshop participants spoke a difficult dialect that made it somewhat challenging for the co-facilitators to translate.

This vulnerability analysis is purely based on the input of the 111 stakeholders from across Letaba and Giyani participating in the workshops, and it is therefore important to note that the information gathered is based on the subjective perception of stressors, impacts etc. of the stakeholders.

## **4. ASSESSING THE MULTIPLE FACTORS SHAPING CURRENT VULNERABILITY**

In order to understand vulnerability to climate change an important first step is to create an understanding of current vulnerability, as the present challenges and dynamics are the foundation for future vulnerability. Given the multi-stressor environment that people live and work in, it is important to understand the various dynamics, be it climatic, social, economic or political, that shape people's current vulnerability. This section looks at current vulnerability by assessing the different stressors that are currently impacting livelihoods, and expands on this by taking a closer look at the exposure, impacts and adaptive capacity of some of the main sectors, including agriculture, water, health and disaster management. The information for each sector varied somewhat, as the extent to which the groups understood and fully engaged with various aspects differed to some extent. Furthermore, for some sectors breaking down the different concepts and making linkages was more complicated than for other.

### **4.1 Livelihoods**

This section focuses on outlining the most important income generating activities practiced in Letaba and Giyani, and the stressors that people are currently faced with in carrying out these activities. The aim of this focus is to create an understanding of livelihoods in Letaba and Giyani, and the type of stressors that currently make them vulnerable.

The list below provides an overview of the income generating activities practiced across Letaba and Giyani, as outlined by participants at the two livelihoods workshops. The relative importance of the different activities, in terms of the perceived number of people making a living from that activity, is indicated by the sequence of the activities, with the most important, hawkers, listed first and the less

important activities towards the end<sup>5</sup>. As can be observed in the list below the most important livelihood activities include hawking, small-scale farming, commercial farming and the subsequent need for farm workers, and the running of a large variety of small businesses and cooperatives. Agriculture, as well as the sale of agricultural products and other products, and innovation through the set-up and running of small businesses can therefore be seen as central to livelihoods in Letaba and Giyani.

### Overview of the most important income generating activities practiced in Letaba and Giyani:

- **Hawkers<sup>6</sup>**
- **Small-scale crop and livestock farming:** (Beans, potatoes, green pepper, tomatoes, banana, apples, cattle, pigs, chickens and goats)
- **Commercial farming/Farm workers** (Crop farming, livestock ( poultry ))
- **Small scale businesses/cooperatives:**
  - ✓ *Arts and crafts*
  - ✓ *Sewing*
  - ✓ *Making and selling shoes*
  - ✓ *Baking (bread, cookies, scones etc)*
  - ✓ *Making and selling peanut butter*
  - ✓ *Catering and decoration (for weddings etc)*
  - ✓ *Buy goods i.e. window and sell it to get profit*
  - ✓ *Brick making*
  - ✓ *Collect sand from river and sell to the local community for house building*
  - ✓ *Welding (Door frames, window frames, gates, burglar doors)*
  - ✓ *Hair dressing*
  - ✓ *Washing cars*
  - ✓ *Giving cash loans at an interest*
  - ✓ *Selling water from boreholes*
  - ✓ *Cash for scrap*
  - ✓ *Waste recycling*
- **Office work** (Schools, hospitals and private companies )
- **Social grants**
- **Funeral parlours**
- **Taxi/Bus workers**
- **Expanded Public works Programme** (Street maintenance, closing dongas )
- **Domestic workers**
- **Shop keepers**
- **Construction work**, skilled and or temporary
- **Collection, processing and sale of natural resources**
  - ✓ *Making and selling beer from Amarula or traditional beer from Sorghum*
  - ✓ *Collecting wood in the wild and transport it to buyers using donkey carts*
  - ✓ *Pick and sell Mopani worms*
- **Driving schools**
- **Roadside mechanics**
- **Goods transportation**
- **Illegal mining**

These livelihood activities are under stress due to a number of factors, the majority of which have social, economic or political linkages that shape the degree to which the livelihoods of people in Letaba and Giyani are currently vulnerable. Workshop participants focused a lot on agricultural activities, including commercial and small-scale crop and livestock farming, with a lot of focus on climatic stressors as highlighted in red in the table below.

<sup>5</sup> This sequence is based on the perceptions of workshop participants at the Letaba and Giyani livelihoods workshops.

<sup>6</sup> Hawker refers to a vendor of products that can easily be transported, and hawkers generally sell their products in formal or informal markets or along the roadside. Their products can be items they have made or grown themselves, but it is often also products, commonly agricultural products, that they have bought in order to sell on.

**Table 3: Stressors facing agriculture, and their causes and possible solutions**, with climate related stressors highlighted in red.

<b>Income generating activity</b>	<b>Stressors</b>	<b>Causes</b>	<b>Solutions</b>
<b>Commercial farming/farm workers</b>	The seasonality of farming reduces income and encourages retrenchment	Some crops are ploughed seasonally; some are for winter (merepa) whereas some are for summer, e.g mangoes, mafela, leach	Reduce monoculture: They must plough different crops during the different seasons to reduce lack of jobs during certain times of the year
<i>Small-scale crop farming</i>	<p>There is a problem of accessing fertilizers, tools and machinery</p> <p>Lack of knowledge about farming</p> <p>Drought - kills crops</p> <p>More rain, more insects arise on the crops and they end up rotten or dead</p> <p>Floods - Plants die, fertile soil is washed away – leads to reduced income</p> <p>Extremely sunny (hot) - some crops cannot survive, workers cannot be physically active – leads to low production and reduced income</p>	<p>There is no money</p> <p>There is a lack of workers to support farming activities</p> <p>Drought is caused by lack of rainfall</p> <p>Climate change</p>	<p>To collect leaves, dead plants to make compost/ There is a need for equipment to use in the farm/ Need support to make fences/ Need herbicides to kill insects on plants</p> <p>Farmers need to work with fellow farmers/ There is need to educate people about farming</p> <p>There is a need for water, need boreholes. Can use waste water to irrigate crops</p> <p>Limit the burning of hazardous waste that disturbs the atmosphere</p>
<i>Small-scale livestock farming</i>	<p>Drought</p> <p>Floods</p> <p>Overgrazing, overstocking/ food</p> <p>Stock theft</p> <p>Foot and Mouth Disease</p> <p>Markets</p>	<p>Climate change</p> <p>Unemployment, criminal justice system not effective</p> <p>Proximity to Kruger National Park, damage to redline and other fences</p> <p>Lack of marketing skills</p>	<p>Feed lot and abattoir ( value addition)</p> <p>Tighten the criminal justice system</p> <p>Refurbishment of fences</p> <p>Skills development</p>

Beyond the agriculture focus, workshop participants chose to focus on hawkers, small businesses and cooperatives, domestic workers, funeral parlours, taxi and bus drivers and social grants, and the details of stressors, causes and possible solutions are outlined in the table below. The table shows how climate related stressors are not seen as impacting these activities in the present.

**Table 4: Stressors facing various income generating activities, and their causes and possible solutions.**

<b>Income generating activity</b>	<b>Stressors</b>	<b>Causes</b>	<b>Solutions</b>
<i>Hawkers</i>	No proper suppliers Low profit Fruits and Veg rotting Transporting- stock Mushrooming – no consistency	They are not organised Selling same goods Lack of storage Pricing high Selling same goods Lack of by- laws	Hawkers association Cool storage- municipality Grouping- club- rotation Market stalls Law enforcement
<i>Small scale businesses/ cooperatives</i>	Cost of transportation High competition/ no diversity Marketing Space	Being far from market : cost of fuel e.g. petrol, diesel, oil Lack of business knowledge Lack of marketing skills No market stalls	Establishment of local market Diversity of products Skill development Development of market stalls by municipality
<i>Domestic workers</i>	Low payment Long working hours	They are not properly organised Workers are often illiterate Lack of information on labour acts	Proper training needed
<i>Funeral parlour</i>	Low payment No contracts	Workers are often illiterate Work is casual / seasonal	Should be registered Permanent position
<i>Taxi/ Bus drivers</i>	Roads are not accessible Low payment	Lack of roads maintenance High cost of fuel	Provision of good roads/services Provision of subsidy
<i>Social grants</i>	High dependency rate (74%) Misuse of grants Teenage pregnancy Fraud ( illegal airtime, loan sharks) Loans and gambling	Poverty and unemployment Peer pressure Social grant system poor ( poor technological system and human element ) Grant money is little Cost of living	Introduction of life skills in schools Creation of sustainable jobs Tighten the system and to link the social grant system to Home Affairs Employment Increment of grant

Below is a summary of the main stressors currently affecting people relying on these income generating activities, with climate related challenges highlighted in red. Non-climate related stress is much more common than climate related stress.

- *Transport costs/ high costs of fuel*
- *Badly maintained roads*
- *Lack of organized labour/ associations*
- *Knowledge of workers' rights*
- *Knowledge/skills*
- *Lack of stalls/ storage facilities*
- *Lack of access to products*
- *Drought*
- *Heavy rain*
- *Extreme heat*
- *Water shortages*
- *Overgrazing/overstocking*
- *Stock theft*
- *Foot and Mouth Disease*

When analysing the underlying causes of stress through the lens of livelihoods assets, it can be found that these livelihood activities are largely vulnerable to stress due to limited access to livelihoods related assets. The table below highlights the links between the most important livelihood activities and the assets people lack in dealing with stressors faced in that activity.

**Table 5: Linking livelihood activities with the livelihood assets that are currently limited or lacking.**

	<b>Human assets:</b> skills, knowledge and info, ability to work, health	<b>Natural assets:</b> land, water, wildlife, biodiversity, environment	<b>Financial assets:</b> savings, credit, remittances, pensions	<b>Physical assets:</b> transport, shelter, water, energy	<b>Social assets:</b> networks, groups, trust, access to institutions
<i>Hawkers</i>			X	X	X
<i>Small-scale crop &amp; livestock farming</i>	X	X	X		X
<i>Small businesses/cooperatives</i>	X			X	

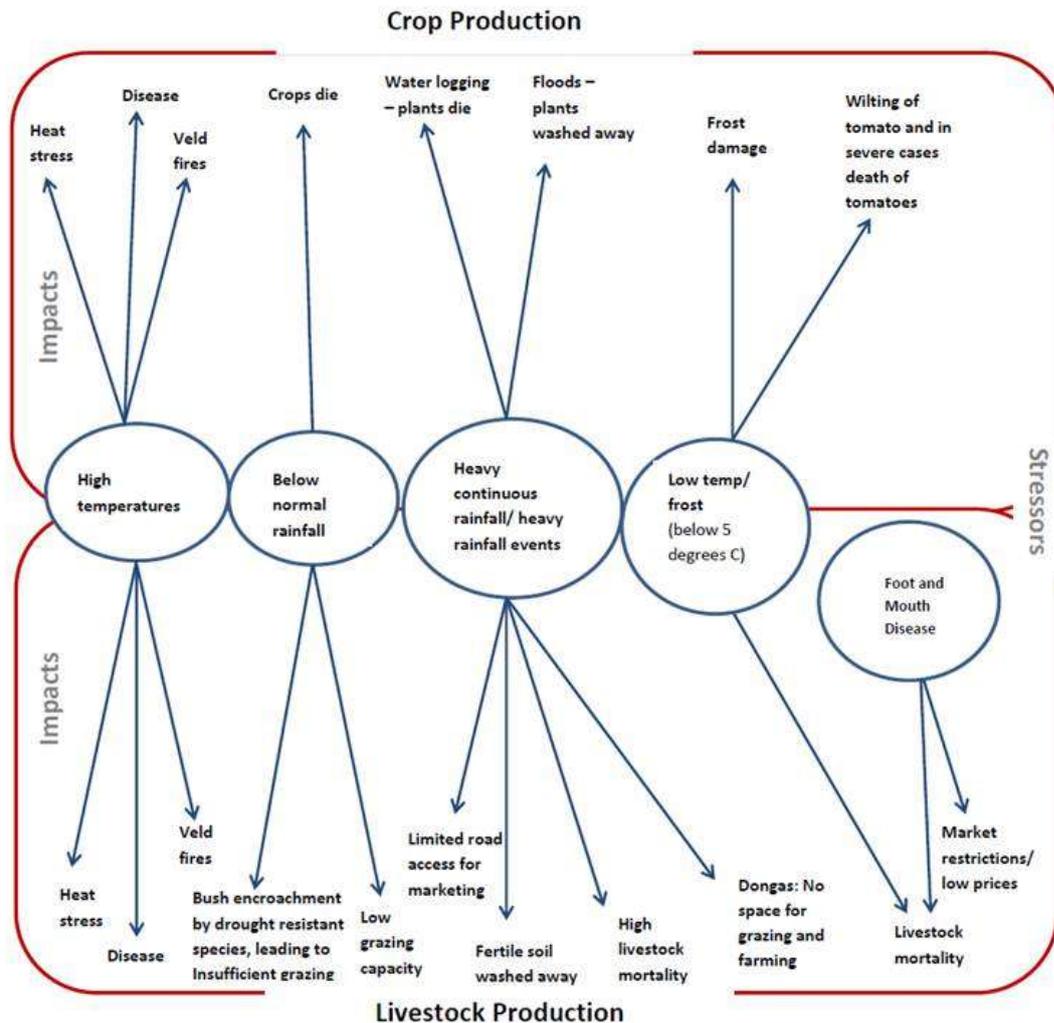
As illustrated in the analysis of income generating activities and some of the stressors faced in making a living from these activities, livelihoods in Letaba and Giyani can be considered vulnerable in that they have limited financial, physical, human, natural or social assets to deal with the stressors. Besides for the agricultural activities, for which climatic stress plays a very important role, all of the stressors facing income generating activities are non-climatic.

## 4.2 Sectors

Sectoral analysis of current vulnerability provides a different perspective, a more detailed insight into the context in which people live, the services that they have access to and the stress facing those services. The sectoral assessment of vulnerability looked at exposure to various stressors, sensitivity and adaptive capacity, as defined in the methodology. Grasping and applying these complex concepts during the course of a one day workshop can be challenging, and the information gathered for the different sectors therefore varies. For some sectors, such as agriculture, these concepts are for example easier to apply than in other sectors.

### Agriculture

To get a more in-depth picture of the issues facing the agricultural sector, a workshop was convened with extension officers from Letaba and Giyani. The diagram below highlights stressors currently impacting agricultural production, both commercial and small-scale, and subsequent impacts, as identified at the agriculture workshop.



**Figure 3: Stressors currently impacting the agricultural sector.** The red boxes outline the systems that workshop participants chose to focus on, Crop production (top) and Livestock production (bottom), with the stressors affecting those systems outlined in the blue circles. The arrows point to the specific impacts identified for the different stressors, within the different systems.

Besides Foot and Mouth Disease (FMD), the stressors identified for agricultural activities are all climate related stressors, hence confirming the message that came out of the livelihoods workshops, that climate already plays a very important role in agricultural production. Both high and low temperatures were seen as causing stress for crop and livestock production, as well as below normal rainfall and heavy rainfall, reflecting how agricultural production is only optimal within a specific climatic envelopes.

As can be observed in the diagram above, some of the impacts identified have direct consequences for agricultural production, such as wilting of tomatoes due to low temperatures or heat stress in animals due to high temperatures. Other impacts highlighted are indirect, with for example bush encroachment impacting grazing space or physical access to markets being restricted due to heavy rainfall events damaging roads.

Levels of sensitivity and adaptive capacity provide further insights into the current dynamics of agricultural production in Letaba and Giyani, as these are the aspects that shape the extent to which agricultural activities are vulnerable to stress. The table below outlines some of the sensitivities and the adaptive capacity existing in the agricultural sector today, as linked to stressors, impacts and consequences. As outlined by extension officers, lack of access to resources, knowledge/ application of certain management practices and access to information are aspects that currently make crop and livestock production sensitive to impacts of climate stressors. As reflected in the current adaptive capacity outlined below resources and information, such as pesticides and early warning information,

are often exclusively accessible to a privileged group, generally the commercial farmers. This reflects the differential vulnerabilities within the agricultural sector in Letaba and Giyani, shaped by differences in sensitivities and adaptive capacity between commercial and small-scale farmers. This highlights the need to focus on supporting the small-scale farmers, who are generally less resourced and have more limited access to new knowledge and information.

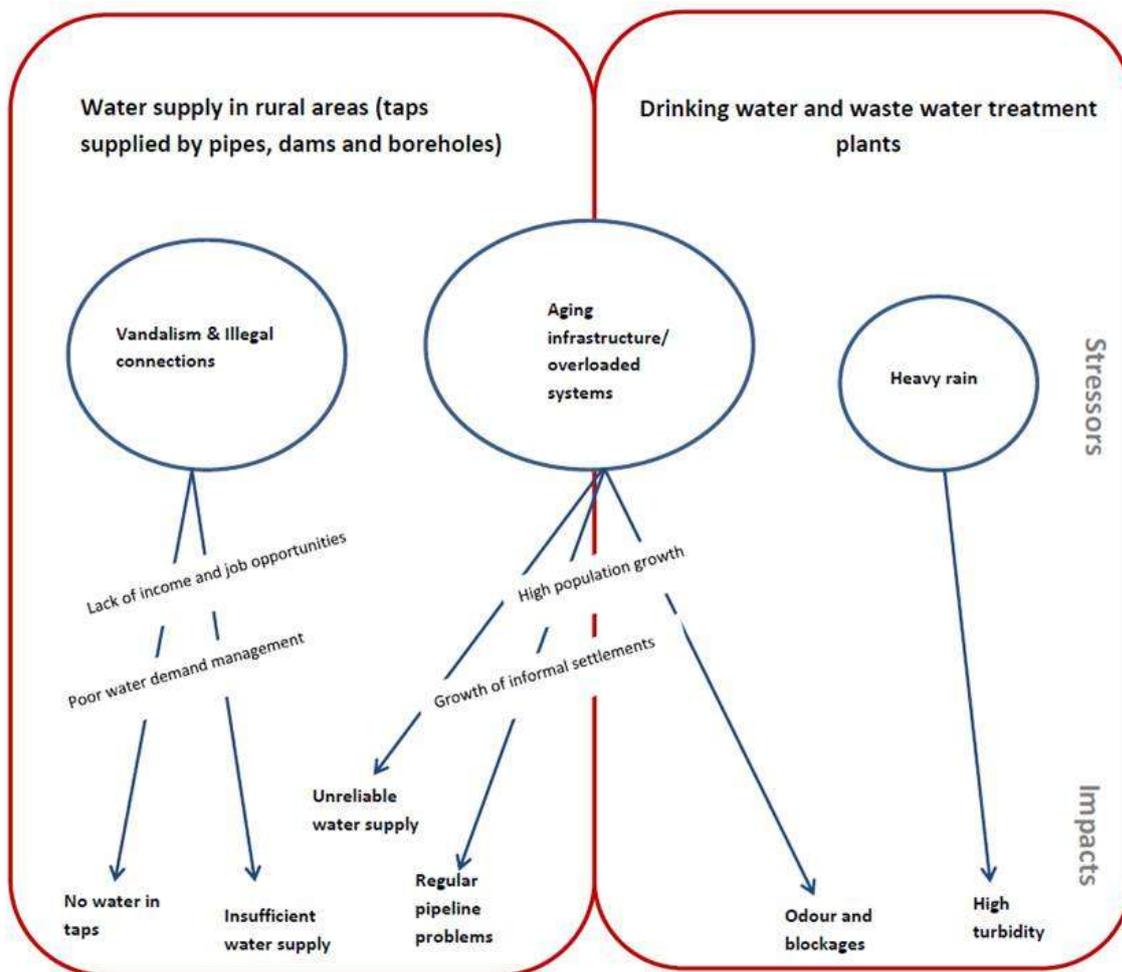
**Table 6: Overview of sensitivities and adaptive capacity linked to stressors currently impacting the agricultural sector.**

Stressors	Impacts and consequences	Sensitivity	Current Capacity	Adaptive Capacity
<i>High temperatures</i>	<b>Crops:</b> Heat stress, disease, veld fires	<ul style="list-style-type: none"> <li>No construction of fire belts</li> <li>No pesticides</li> <li>Not enough water sources (drinking troughs)</li> </ul>	<ul style="list-style-type: none"> <li>Some construct fire belts</li> <li>Some buy pesticides</li> <li>Some have earth dams</li> </ul>	
	<b>Livestock:</b> Heat stress, disease, veld fires			
<i>Low temperatures/ frost</i>	<b>Crops:</b> Frost damage, wilting and death of tomatoes	Lack of knowledge on resource utilisation (e.g. burning of tyres and use of kraal manure)	Early warning information systems in place, though not accessible to all due to language etc	
	<b>Livestock:</b> Livestock mortality			
<i>Below normal rainfall</i>	<b>Crops:</b> Crops die	<ul style="list-style-type: none"> <li>Poor grazing conditions (i.e. overstocking which leads to overgrazing)</li> <li>Poor veld management</li> <li>No dedicated grazing camps</li> <li>No access to supplementary feeding</li> </ul>	<ul style="list-style-type: none"> <li>Control of invasive plants</li> <li>Rotational grazing, enabling enough grazing (commercial)</li> <li>Supplementary feeding (commercial)</li> <li>Small-scale farmers wait for supply from government</li> </ul>	
	<b>Livestock:</b> Bush encroachment, low grazing capacity			
<i>Heavy continuous rainfall/ heavy rainfall events</i>	<b>Crops:</b> Water logging – crops die, floods – plants washed away	<ul style="list-style-type: none"> <li>No access to early warning systems</li> <li>Ploughing on river banks (because of insufficient access to land)</li> <li>No contours or soil conservation structures</li> </ul>	Some farmers are able to make contours (commercial)	
	<b>Livestock:</b> Limited road access for marketing, fertile soil washed away, high livestock mortality			
<i>Foot and mouth disease</i>	<b>Livestock:</b> Market restrictions/ low prices, livestock mortality	Destruction of fence at redline gates <sup>7</sup>	Road blocks for FMD control and vaccinations	

## Water Sector

With the majority of households in Letaba and Giyani having access to water supplied by the Municipality, more often than not through communal taps, the vulnerability of the municipal water supply system plays a role in shaping people's access to water. The diagram below highlights stressors currently facing water supply, and subsequent impacts, as identified at the workshop with water supply and waste management practitioners from the local municipalities.

<sup>7</sup> Redline gates: where livestock/game should not cross. Set up to prevent interaction between livestock and game, as FMD is caused by the interaction of wild and domestic animals.



**Figure 4: Stressors currently impacting the water supply and waste water system.** The red boxes outline the systems that workshop participants chose to focus on, Water supply in rural areas and Drinking water and waste water treatment plants, with the stressors affecting those systems outlined in the blue circles. The arrows point to the specific impacts identified for the different stressors, within the different systems. The text outlined between the stressors and the impacts are the aspects that make the system sensitive to the impacts of these stressors.

As highlighted in the figure above the key factors currently stressing water supply in rural areas, as identified by municipal water managers, are not climate related and instead relate to aging infrastructure and systems overload, as well as vandalism and illegal connections. Water managers at the local municipalities highlighted how vandalism, stealing of transformers, cables and diesel engines, is a big problem, which relates to the lack of income and job opportunities, leaving people with few opportunities to create an income. Illegal connections are also related to the same causes, lack of income and opportunities, together with poor water demand management.

Because the water supply system is currently overloaded, due to continued growth in informal settlements, it is also more sensitive to stress caused by old, or even outdated, infrastructure. The systems overload and the old infrastructure causes problems with the ability of the system to provide regular water supply.

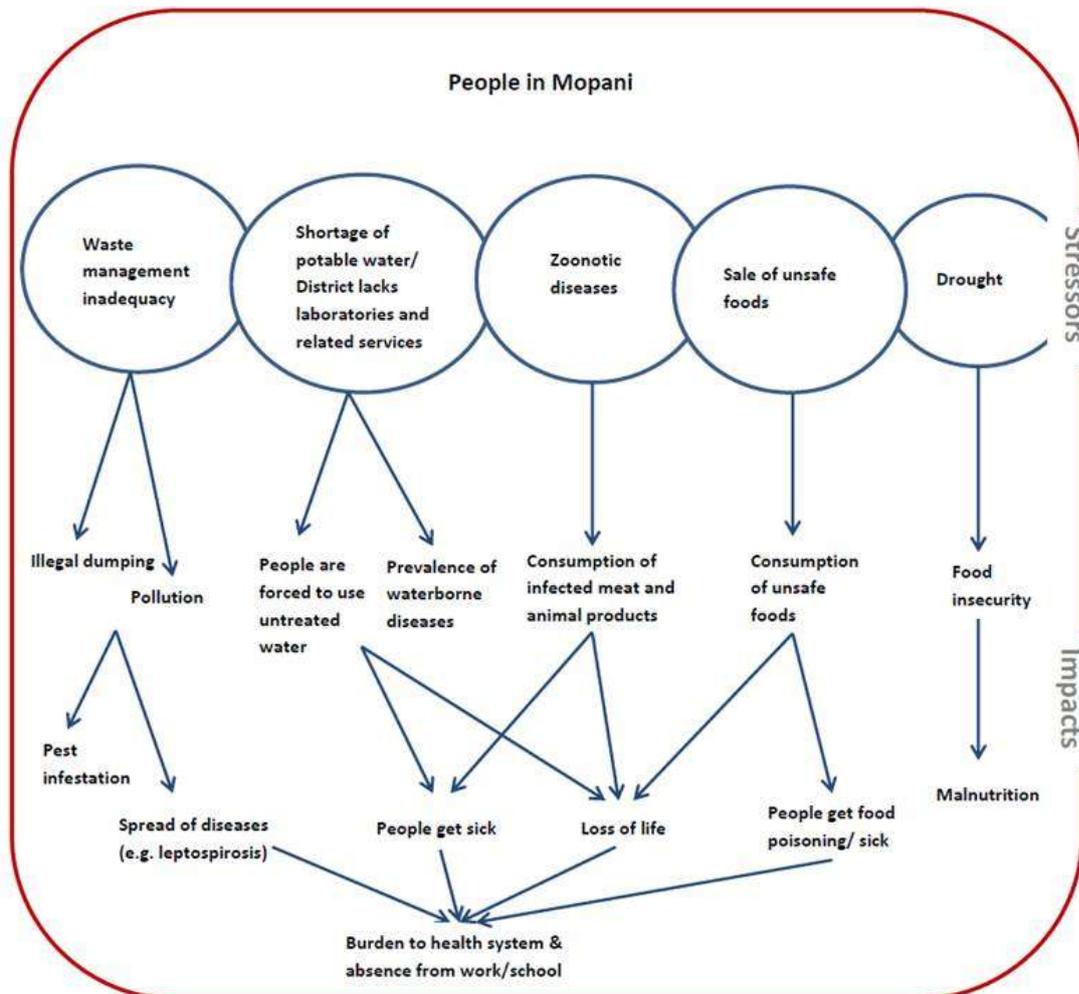
In the case of the drinking water and waste water treatment plants the systems overload and the old infrastructure cause odour and blockages. The drinking water and waste water treatment plants were also considered to be stressed by heavy rain, causing turbidity which makes the chemicals generally used to clean the water insufficient and lead to the spread of water borne diseases.

The water managers identified the need for security measures, monitoring of water usage and dialogues with communities in order to deal with vandalism and illegal connections. The need for refurbishment of infrastructure, said to be limited in the present due to budget restrictions, as well as

the provision of water tanks were further ideas for dealing with aging infrastructure and systems overload.

## Health

Health is an important factor in the lives of everyone, shaping people’s well-being and ability to work. Analysis of the health sector was done through a workshop with health practitioners, mainly environmental health practitioners and health inspectors.



**Figure 5: Stressors currently impacting the health sector.** The red box outline the systems that workshop participants chose to focus on, which in this case could be grouped into the People in Mopani. The stressors affecting people in Mopani are outlined in the blue circles. The arrows point to the specific impacts identified for the different stressors.

Looking at the health sector and current challenges the stressors identified relate to waste management, potable water, zoonotic diseases<sup>8</sup>, unsafe foods and drought. Two of the stressors, waste and water, are rooted in service delivery challenges<sup>9</sup>. These issues of water and waste are linked to challenges of general access, maintenance and lack of infrastructure.

Lack of access to potable water, be it due to lack of supply or due to contamination of natural or constructed water supply systems, results in the consumption of unsafe water and people getting sick. While health practitioners noted that most people know that they should treat the water<sup>10</sup> if they think

<sup>8</sup> Contagious diseases spread between animals and humans.

<sup>9</sup> The service delivery challenges relate back to the large backlog of basic service delivery for all, which faced the Democratic Government which took over in 1994.

<sup>10</sup> By boiling the water or using chemicals

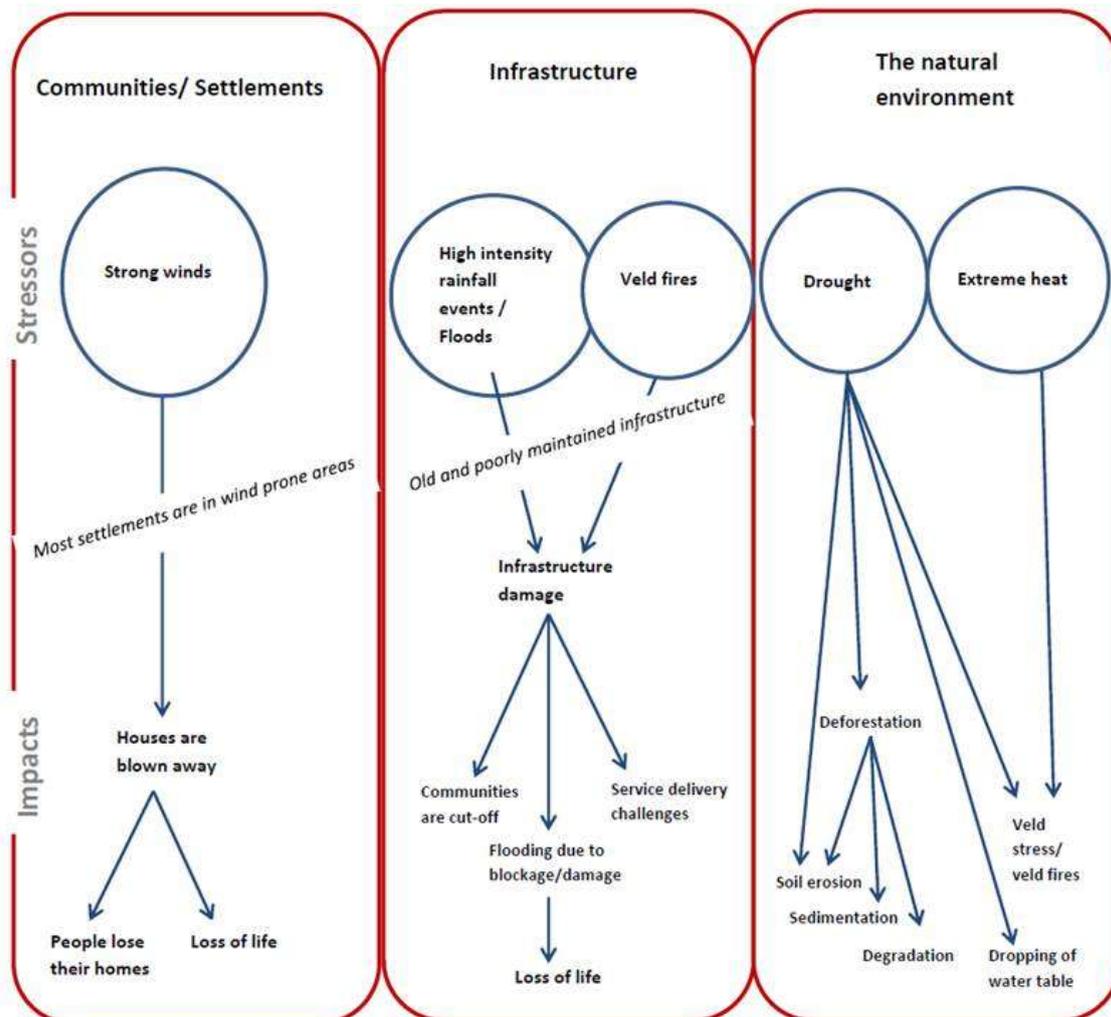
it is comes from a source that could be contaminated, they generally lack the time and resources to do so.

People get sick, or even lose their lives, due to consumption of infected/unsafe food. Such food ends up on people’s plates as a result of poor hygiene practices, or due to the lack of inspection of meat and animal products. While there are regulations in place to deal with these, for example in relation to regulations for hawkers, lack of enforcement of hawker policies or misunderstandings of the policies, prevents such regulations from minimising the risk of food poisoning. Promotion of good hygiene practice and food handling is currently taking place through government initiatives, and there are thus some steps underway to try to deal with these issues.

Drought is a health related stressor in that it can result in food shortages and subsequent malnutrition. Letaba and Giyani were seen as being ill prepared for such stress, due to the lack of any contingency plan.

## Disaster Management

Disaster management can be seen as cross-cutting, dealing with crisis and stress experienced across all sectors. Analysis of disaster management was done through a workshop with people working in disaster management, including risk management and disaster response planning.



**Figure 6: Stressors currently impacting the Disaster Management Sector.** The red boxes outline the systems that workshop participants chose to focus on, Communities/Settlements, Infrastructure and the Natural environment, with the stressors affecting those systems outlined in the blue circles. The arrows point to the specific impacts identified for the different stressors, within the different systems.

As can be observed in the figure above the stressors identified in relation to disaster management are all climate related stressors, thus confirming the central role of climate in disaster management. The identification of these climate related stressors and the related impacts are to some degree confirmed by the findings of the Disaster Risk Assessment and Disaster Risk Reduction report for Mopani District (2012), where for Letaba and Giyani fires, drought, dam failure, floods, deforestation, erosion, hazardous material, epidemics/disease, water pollution, water management, crime and extreme weather are highlighted as priority threats.

Communities and settlements in Letaba and Giyani are prone to stress caused by wind, resulting in damage to homes and loss of life. It was noted that many settlements are sensitive to such damage, as they are located in wind prone areas.

Infrastructure damage, due to veld fires, heavy rainfall or flooding, can disrupt service delivery and can result in communities being cut-off from basic services. Some infrastructure is particularly sensitive to damage from such events, due to the old age of a lot of infrastructure, and poor maintenance in some places.

The natural environment, the resource base on which people live and from which they depend, is prone to stress from climate related factors like drought and extreme heat. Resulting impacts, such as soil erosion, a dropping water table and veld degradation and fires, depletes this resource base and requires disaster management responses post disasters. The resource depletion further requires responses that aim to restore the resource base, and that promote sustainable resource use.

These findings give an indication of how people in Letaba and Giyani are disaster management vulnerable to a number of climate related stressors, with the disaster management sector having to develop approaches to respond. The findings further show how the impacts of these stressors can be severe, with communities being cut-off, losing access to services or losing their homes, and can in the worst cases lead to loss of life.

## **Summary of sectoral analysis**

Summarised the key stressors currently facing the agriculture, water, health and disaster management sectors include:

- High temperatures
- Below normal rainfall
- Drought
- Heavy rainfall events/ floods
- Low temperatures/ frost
- Strong winds
- Veld fires
- Zoonotic disease - Foot and Mouth Disease
- Vandalism & illegal connections
- Aging infrastructure
- Overloaded water supply and waste and water treatment systems
- Waste management inadequacy
- Shortage of potable water/ lack of laboratories and related services
- Sale of unsafe foods

The stressors highlighted in red above refer to the climate related stressors. These were mainly highlighted in relation to agricultural production and disaster management, while in water and health stressors were largely focused on non-climate related stress such as service delivery challenges, old infrastructure and social and economic issues.

For agriculture, differential sensitivities and adaptive capacity emerged, with small-scale farmers seen as having less resources and information than commercial farmers, thus reflecting the need for efforts to focus on supporting the strengthening of the resilience of small-scale farmers.

For the water sector overloaded systems, due to the growth of settlements, and vandalism and illegal connections, due to unemployment and lack of opportunities, were identified as the main stressors, thus reflecting how non-climatic stressors are currently of more concern than for example lack of rainfall.

For the health sector, challenges with service delivery, in terms of water supply and waste management, came out as important issues, leading to spread of disease. People also get sick from unsafe foods and uninspected meats, and there is a need for better hygiene, and better understanding and of enforcement of hawker policies. Drought also has health related consequences, as the lack of sufficient food supply can lead to malnutrition, thus highlighting the need for focus on food security.

For disaster management, as for agriculture, climate stressors were central. Current impacts experienced include damage to houses, infrastructure and the natural environment, with communities being cut-off and losing access to services.

While the different sectors will need sector specific response to lessen the factors that shape the impacts of the exposure to these stressors, it seems that upgrading infrastructure, improving maintenance plans and improving potable water and waste management services, could be an important step towards decreasing the sensitivity and increasing adaptive capacity. These aspects are already high on the list of municipal priorities, and these research findings thus support continued prioritisation, while emphasising the need for greater urgency.

## **5. VULNERABILITY TO CLIMATE CHANGE**

Having developed an understanding of current vulnerability of sectors and people in Letaba and Giyani to multiple stressors, this section proceeds to look at the vulnerability to climate change. Vulnerability to climate change is analysed through the assessment of how climate change trends may impact income generating activities, and expands on this by taking a closer look at how climate change trends may impact sectors, and the adaptive capacity currently in place to deal with such impacts.

The information for each income generating activity and sector varies somewhat, as the extent to which the groups understood and fully engaged with various aspects differed somewhat. Furthermore, for some sectors or income generating activities breaking down the different concepts and making linkages is more complicated than for other.

### **5.1 Livelihoods**

The livelihoods assessment of climate change vulnerability looks at how climate change trends might impact income generating activities, and at the possible responses or solutions required to deal with these.

#### **Farming**

The majority of participants at the livelihoods workshops chose to focus on the possible impacts of climate change on farming activities. As outlined in the table below, an increase in the number of extremely warm days is perceived to have numerous possible impacts on farming activities. These impacts are strongly linked to water, as evaporation rates increase on extremely warm days, while at the same time crops and animals require more water due to the heat. The impact of heat on grass,

crops and livestock is another concern, resulting in decrease in livestock numbers, death of crops and livestock, and subsequent production, income and job losses.

For farm workers on commercial farms increase in the number of extremely warm days is seen to increase incidents of skin disease, as well as loss of jobs as overall production goes down. Solutions suggested in this regard include protection from the sun through protective clothing, and the establishment of alternative income through community gardens.

More intense heavy rainfall events are expected to lead to an increase in exposure to disease for both livestock and crops, resulting in a loss of crops and loss of grazing area. More intense heavy rainfall could also have indirect impacts on agricultural production, as heavy downpours will prevent farmers from going to work in the fields.

**Table 7: Possible impacts of a changing climate on agriculture**

<b>Climate change trends</b>	<b>Perceived impacts</b>	<b>Suggested responses/solutions</b>
<i>Increase in number of extremely warm days</i>	<p><b>Livestock farming:</b> Streams, rivers and dams dry up Grass becomes dry Excessive heat can lead to buying food supplements for livestock Livestock consumes more water Increase in diseases More livestock death Less livestock Low production of milk and meat</p> <p><b>Crop farming:</b> Lack of water People will not plough The plants get dry Crops die No production Lack of food due to drying out of plants</p> <p><b>Commercial farming/farm workers:</b> Workers exposed to skin diseases Low income due to reduced production Loss of jobs due to low income</p>	<p>Introduction of earth dams and drinking troughs Clear demarcation of grazing land Storage facilities ( food ) Encourage stock owners to keep livestock at minimal number ( to sell) Establish local abattoir Establishment of cooperatives</p> <p>Water tank to store water for watering homestead gardens</p> <p>Protective clothing/shelter To be organised into associations/ unions Establishment of community gardens</p>
<i>Increase in average temperatures</i>	<p><b>Livestock farming:</b> Livestock become lean Scarcity of dairy and meat products</p> <p><b>Crop farming:</b> Seasonal crops are affected Loss of income</p>	<p>Need big areas of arable land for livestock Feed lots</p> <p>Construction of infrastructure - Need dams to store water</p>
<i>Intense heavy rainfall</i>	<p><b>Livestock farming:</b> Reduced grazing areas Exposure to diseases Livestock will not be able to go for grazing Degradation of livestock quality Livestock dies</p> <p><b>Crop farming:</b> Water logged crops Soil erosion Exposure to diseases No agricultural activities due to heavy rainfall</p>	<p>Maintenance of water drainage</p> <p>Maintenance of water drainage Use rocks to prevent soil erosion Grow grass to avoid erosion, it will absorb water during heavy rainfall</p>

## Hawkers

For hawkers the possible climate change impacts highlighted are a combination of direct impacts on the hawkers themselves and on their products, as well as on the ability or willingness of customers to come to markets during very warm weather or during heavy rainfall. Concerns around products being spoilt, either due to heat or rainfall, are similar to some of the challenges that hawkers are facing at

the present, due to a lack of proper storage facilities and market stalls. Thus difficulties that hawkers are already facing might become more pronounced problems into the future.

**Table 8: Possible impacts of a changing climate on Hawkers**

<b>Climate change trends</b>	<b>Perceived impacts</b>	<b>Possible responses/solutions</b>
<i>Increase in number of extremely warm days</i>	Affected by skin diseases Vegetables quality affected and products become rotten No business Less profit and loss of income People tend to buy cold drinks	Modernised market stalls Pack houses/ Proper storage/ shelter for goods Organise hawkers into cooperatives Training in business skills The type of goods they sell must correspond to the temperature or seasons. E.g. gem tomatoes in winter and cold drink when the temperatures are high
<i>Increase in average temperatures</i>	Affected by skin diseases People are affected by diseases e.g. high blood pressure Products are spoiled Consumers may be affected due to increase in temperature, they may not come to town therefore business suffers Loss of profit, low income and job loss	Get treatment on time Proper storage for goods
<i>More intense heavy rainfall</i>	Day to day activities affected Products spoiled by rain Consumers do not go to town or people stay indoors, even hawkers themselves stay indoors	Government should provide hawkers with market stalls in order to protect goods and the owners

## Health

When considering the possible impacts of climate change on income generating activities workshop participants also made connections to health and infrastructure. As outlined in table 9 below, climate change trends are expected to have a variety of possible impacts on people's health, including more diseases and weakness.

**Table 9: Possible impacts of a changing climate on health**

<b>Climate change trends</b>	<b>Perceived impacts</b>	<b>Suggested responses/solutions</b>
<i>Increase in number of extremely warm days</i>	More diseases, like high blood pressure Diseases will be rife and people will not be able to go to the clinic Diarrhoea Dehydration Skin rash, skin cancer When there is drought people cannot go to work cause they will be weak People can lose energy due to excessive heat and they can die People die from heat	No suggestions made
<i>More intense heavy rainfall</i>	There will be diseases, like malaria	

## Infrastructure

For infrastructure, key concerns relate to damage to houses, roads and bridges, with for example increased risk for children having to cross rivers to get to school. Here a number of possible responses and solutions were highlighted, including the building of bridges and erosion control measures.

**Table 10: Possible impacts of a changing climate on infrastructure**

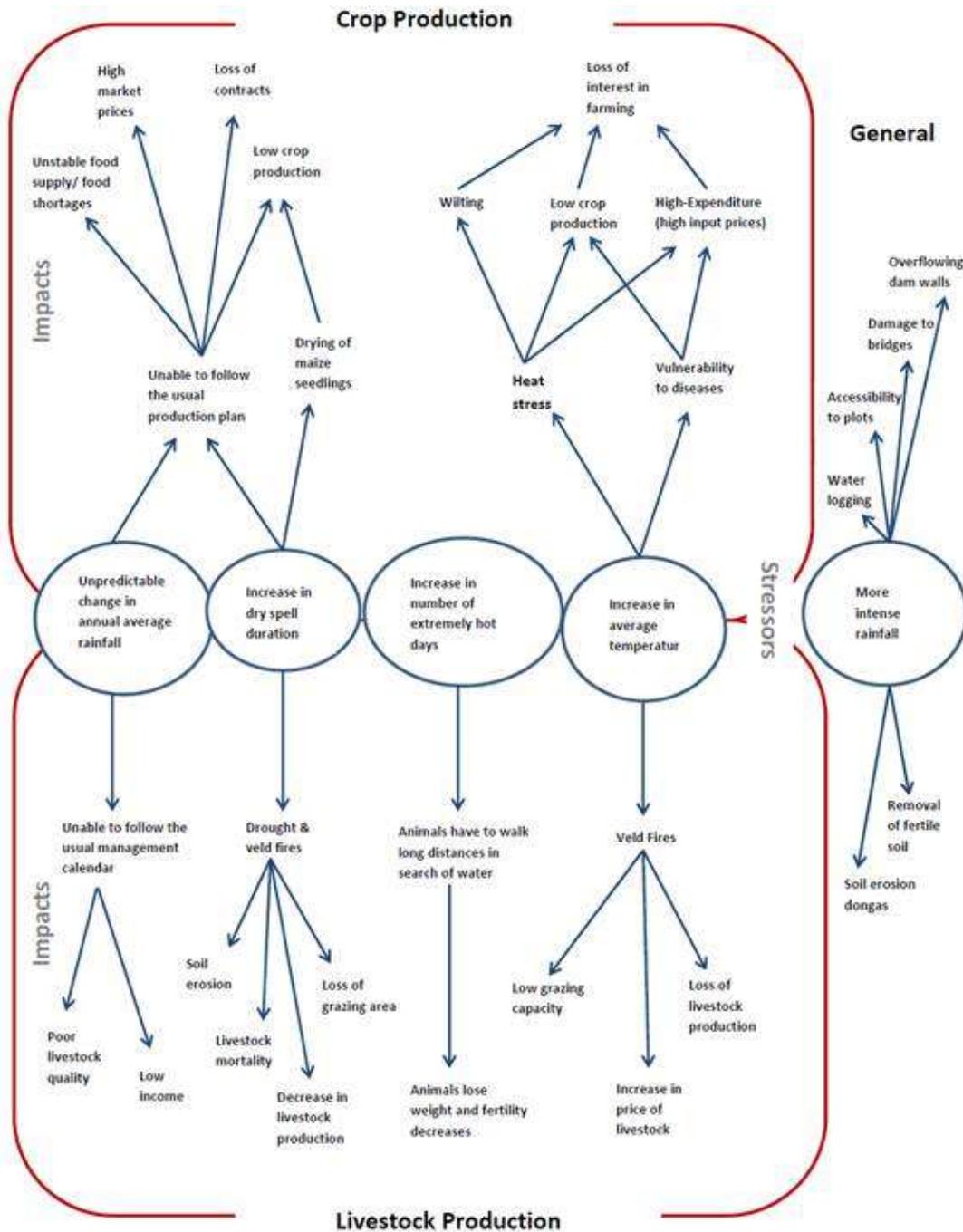
Climate trends	Possible impacts	Suggested responses/solutions
<i>More intense heavy rainfall</i>	Roads, houses and bridges collapse Cars will not be able to drive Rivers get full and children drown People cannot go to work and this result to lower income Heavy rainfall kills people and there will not be jobs and there will be hunger	Resilient bridges must be constructed so that children may cross over when they go to school Constructing strong bridges so we can pass to other side Put stones in the river to create a bridge When the houses get wet or fall due to rain, we can cover them with tent covers Construct a structure so that when it must rain we'll be able to sew inside the building Create gabions on the road side to prevent landslides so that cars can pass through. When it destroys the roads what can we do We make bridges

## 5.2 Sectoral

The sectoral assessment of climate change vulnerability looked at how climate change trends might impact the various sectors, and the adaptive capacity currently in place to deal with the impacts. Grasping and applying these complex concepts during the course of a one day workshop can be challenging, and the information gathered for the different sectors therefore varies, as reflected in the sections below.

### Agriculture

The agricultural workshop allowed for some in depth analysis of how agricultural production might be impacted by climate change, and what might be required for it to respond to these impacts. The impacts, as identified by agricultural extension officers, are outlined in the diagramme below.



**Figure 7: Possible impacts of climate change on the agricultural sector.** The red boxes outline the systems that workshop participants chose to focus on, Crop production (top) and Livestock production (bottom), with the climate change trends (stressors) expected to affect those systems outlined in the blue circles. The arrows point to the specific impacts identified for the different stressors, within the different systems.

Impacts on agricultural production, including commercial and small-scale farming, was analysed through two main focuses, livestock production and crop production. For livestock (see the bottom half of diagramme above), concerns centred around impacts on grazing availability and quality and the animals becoming weaker and less fertile due to heat and decreased water availability. These impacts could lead to a fall in the overall livestock quality and production.

For crop production (see top half of diagramme above) generally low production is a secondary impact resulting from different climate change trends. The low production is linked to aspects such as inability to follow the usual production plans, drying of seedlings, heat stress in plants and vulnerability

to disease. All of the above could lead to loss of production, contracts and farming assets, and subsequent loss of interest in farming.

Looking at both crop farming and livestock farming (see far right of the diagramme above), more intense heavy rainfall events can lead to water logging, soil erosion and loss of fertile soil, as well as damage to infrastructure and problems with accessing the farming land.

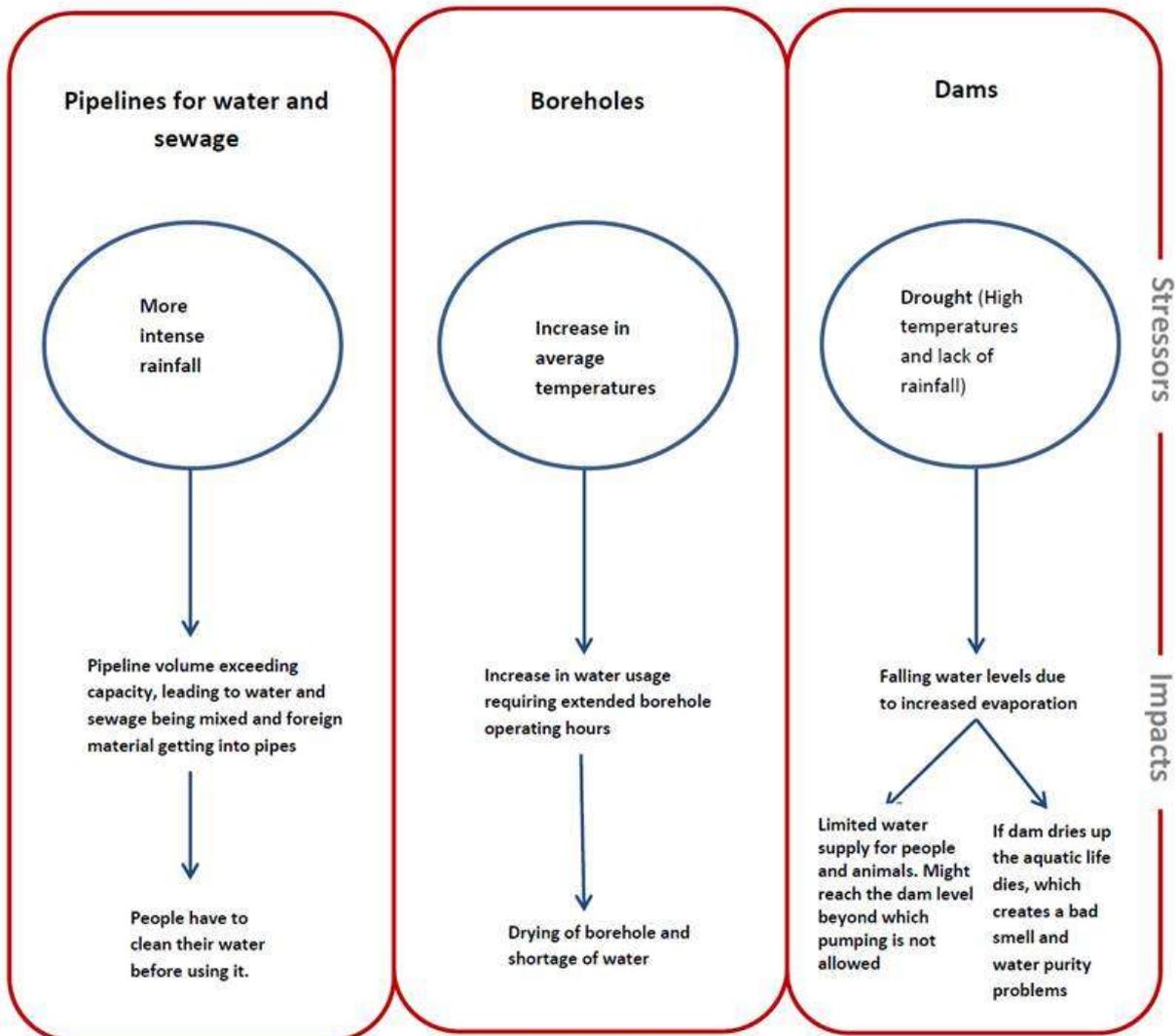
Existing adaptive capacity highlighted in relation to the mentioned climate change impacts include: planting of drought resistant cultivars; sharing of knowledge and information through farmer days and workshops; frequent irrigation; and spraying programmes. For livestock, cattle movement, supplementary feeding provided by government and selling of livestock were highlighted by extension officers, with the latter two illustrating what can be seen as emergency responses. In relation to more intense heavy rainfall ploughing and planting across the slopes, construction of gabion baskets and planting of vertiver grass were highlighted as current practices that build adaptive capacity. The practice of integrated farming systems, with both crops and livestock, is also seen as strengthening farmer adaptive capacity.

While the various impacts of climate change related stressors on crops and livestock are general, and can thus apply for both commercial and small-scale farming, the extent to which farmers are able to adapt, and thus prevent or minimise impacts, differs. As outlined in the agricultural section on current vulnerability, adaptive capacity, including access to resources and information, is often exclusively accessible to a privileged group, generally the commercial farmers. Hence while there are a number of climate smart practices available, commercial and small-scale farmers have differential access to these, due to differential access to the resources or information required.

Hence while some of the challenges faced by commercial and small-scale farmers in the face of climate change are be similar, small-scale farmers will require additional support to access and implement climate smart practices that reduce vulnerability to climate change.

## **Water Sector**

Concerns around decreasing water supply were emphasised both in the livelihoods workshops and in the agricultural workshop, thus highlighting how access to water is a concern across various aspects of everyday life. The water sector workshop provided a space for more indepth analysis of the water supply system. As can be observed in the diagramme below, participants at the water workshop focused on the possible impacts of climate change on boreholes, dams and the pipelines that transport water and sewage.



**Figure 8: Possible impacts of climate change on the water sector.** The red boxes outline the systems that workshop participants chose to focus on, Pipelines for water and sewage, Boreholes and Dams, with the climate change trends (stressors) expected to affect those systems outlined in the blue circles. The arrows point to the specific impacts identified for the different stressors, within the different systems.

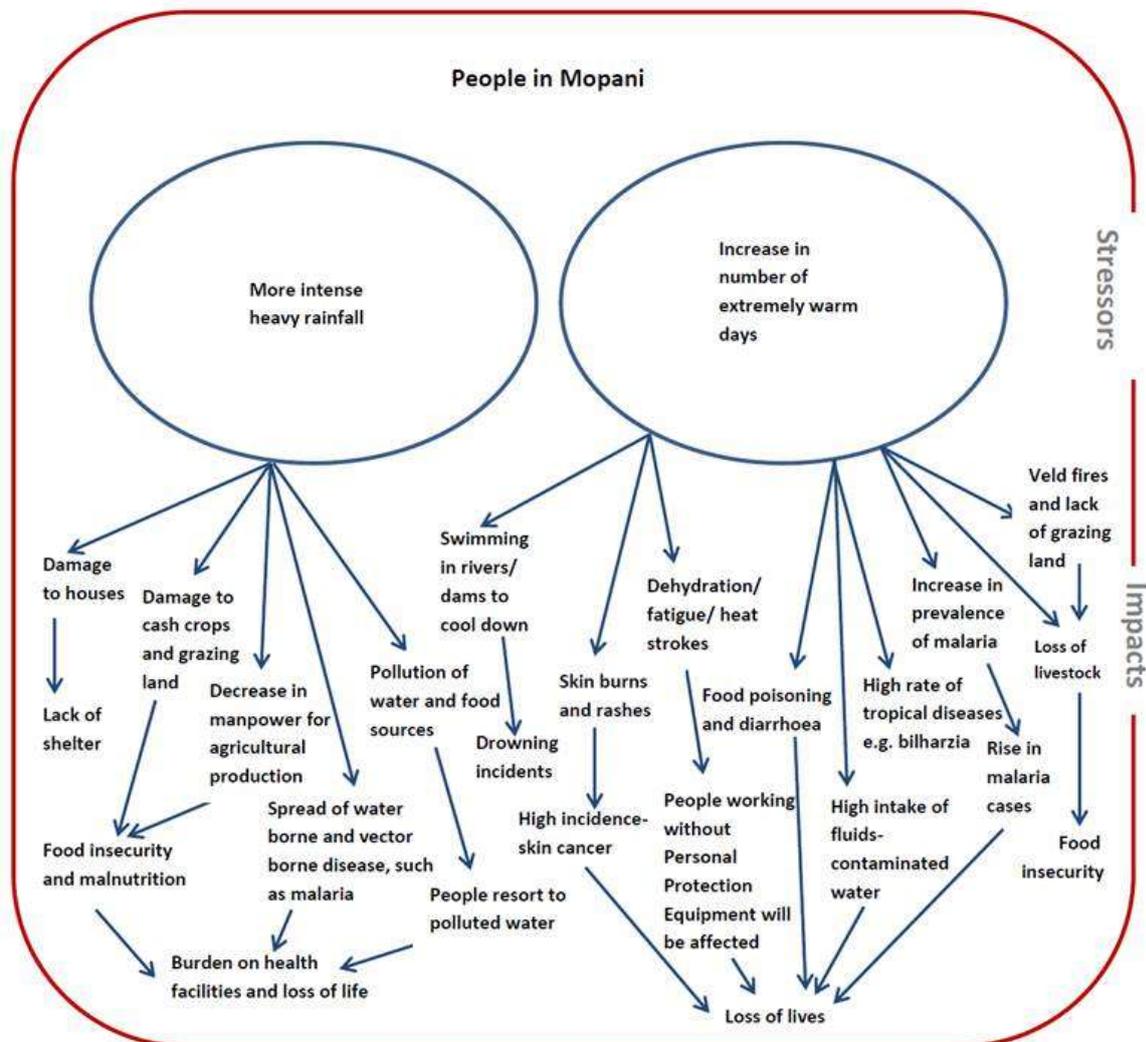
Water related concerns relate to decrease in water availability as well as increased water usage, thus highlighting how due to a combination of changing temperatures and rainfall patterns water demand might increase while water supply might decrease. A challenge in relation to current infrastructure, with pipelines being incapable of dealing with increased volumes from more intense heavy rainfall, further highlights the need for water infrastructure development to be centred around more dynamic trends and flexible volumes.

Suggestions made by workshop participants for how to respond to or prepare for such impacts included decreasing water demand through restrictions and awareness, as well as increasing supply by introducing for example water tanks. Introducing more budget for repair of infrastructure was also suggested.

As for the agricultural sector, the water sector hence highlights the importance of preparing for shifts in water supply and water demand. They further highlight the need for infrastructure to be able to deal with shifting water volumes due to the possibility of more intense heavy rainfall events.

## Health

Health, like water, is a cross-cutting issue that was raised in both the livelihoods workshops and the agricultural workshop. Health practitioners from Letaba and Giyani provided some more indepth insight into what climate change might mean for the health system.



**Figure 9: Possible impacts of climate change on human health.** The red boxes outline the system that workshop participants chose to focus on, People in Mopani, with the climate change trends (stressors) expected to affect that system outlined in the blue circles. The arrows point to the specific impacts identified for the different stressors, within the different systems.

As can be observed above possible impacts of climate change on the health sector are intricate and many, and the impacts could be organised into impact chains, showing how one impact triggers another. Secondary impacts highlighted relate to a range of issues including spread of various diseases and sicknesses, people working outdoors being affected by dehydration and fatigue, people consuming polluted food and water and food insecurity and malnutrition. Burdened health facilities and loss of lives feature at the end of most of these impact chains. Health practitioners also noted how people who are physically inactive, and thus not very fit, are more sensitive to the impacts of heat stress, and that people with lighter skin are more sensitive to damage from the sun.

With regards to the adaptive capacity that exists to respond to the possible impacts highlighted above, a large number of factors were highlighted, and have thus been listed in the table below. Some of the adaptive capacity outlined relates to lessening the impacts, for example the spread of disease or dehydration and fatigue among farm workers, through a combination of skills, facilities, awareness and regulatory frameworks. Some adaptive capacity also relates to being able to cope in times of

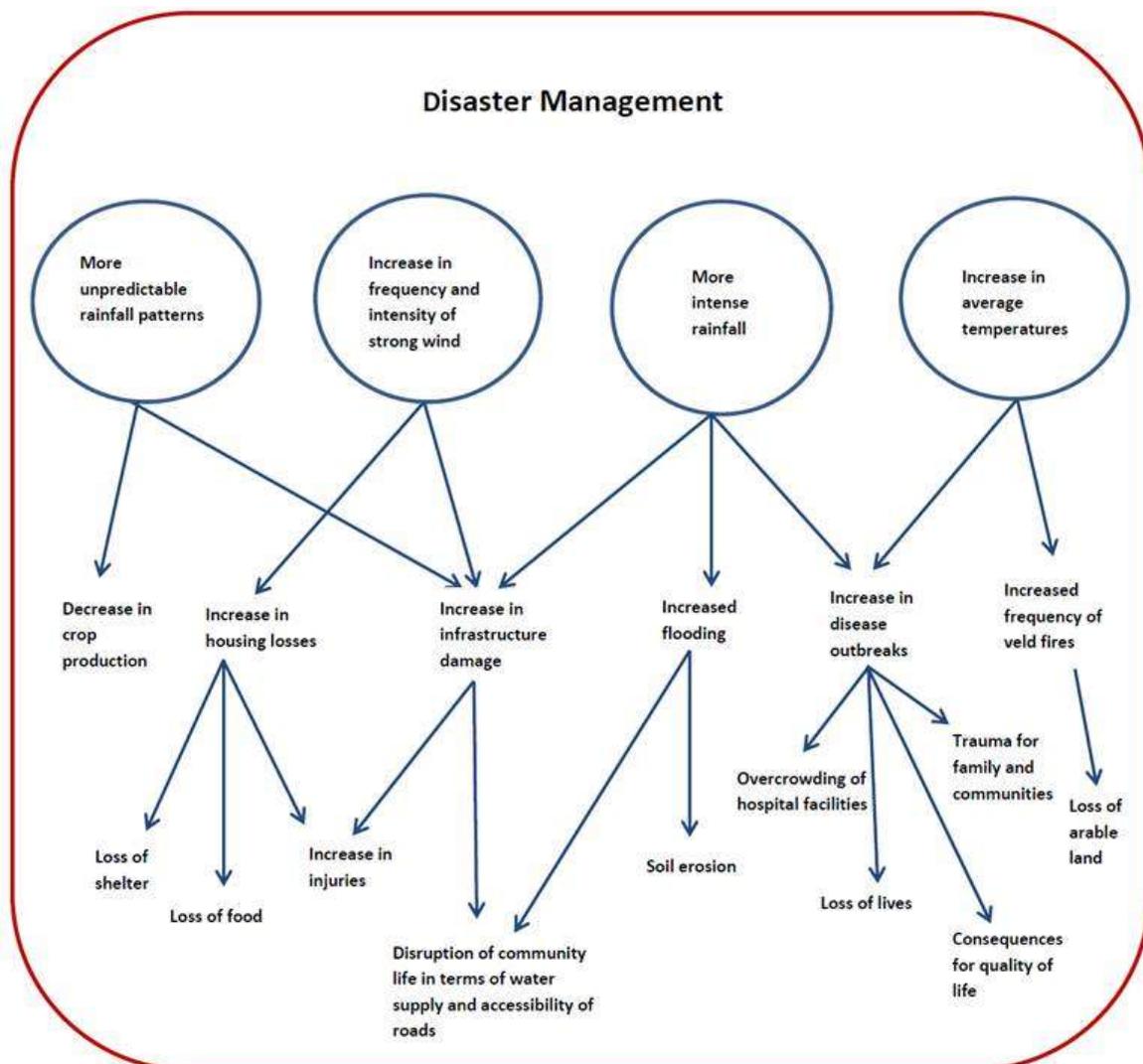
crisis, through relief programmes and borrowing of necessary resources. This thus shows that in the health sector there is already a combination of preventative and disaster response capacity.

**Table 11: Overview of current adaptive capacity for the health sector.**

Exposure (climate change trends)	Current adaptive capacity
<i>More intense heavy rainfall</i>	<ul style="list-style-type: none"> <li>• Skilled personnel</li> <li>• Protection of products E.g. cover bananas</li> <li>• Disaster management centre</li> <li>• Outbreak response teams</li> <li>• Borrowing of resources from neighbouring districts</li> <li>• Disaster management relief programme in place (provision of tents and clean water)</li> </ul>
<i>Increase in number of extremely warm days</i>	<ul style="list-style-type: none"> <li>• Law enforcement on Personal Protection Equipment (PPE)</li> <li>• Occupational Health and Safety awareness</li> <li>• Health facilities</li> <li>• Skilled personnel</li> <li>• Water tankers</li> <li>• Emergency Medical Services in place</li> <li>• Disaster management relief programme in place</li> <li>• Food relief for animals</li> </ul>

## Disaster Management

Disaster management, like health and water, is a cross-cutting issue that was raised in both the livelihoods workshops. Disaster managers from Letaba and Giyani provided some more indepth insight into what climate change might mean for disaster management.



**Figure 10: Possible impacts of climate change on the Disaster Management sector.** Workshop participants focused on impacts that cross various systems and sectors, and the red box is therefore referred to as overall disaster management, with the climate change trends (stressors) expected to affect those systems outlined in the blue circles. The arrows point to the specific impacts identified for the different stressors, within the different systems.

As can be observed above possible impacts of climate change on the disaster management could also be organised into impact chains, showing how one impact triggers another. Impacts relate to a variety of aspects, ranging from housing and infrastructure damage to aspects that are important for food security, such as erosion and availability of arable land. Impacts on the quality of life, water supply challenges, roads accessibility, trauma injuries and loss of lives are some of the secondary impacts highlighted.

As was found in the analysis of current vulnerability, the current location of settlements in wind prone areas makes them sensitive to the impacts of strong winds<sup>11</sup>. The veld is also considered to be sensitive to increase in the frequency of veld fires, as the veld is already prone to fires under current climatic conditions. Some of the adaptive capacity currently in place to deal with these impacts, include fire response plans, early warning systems, planting of wind shields and building of walls, and emergency plans that are in place.

(i) <sup>11</sup> Note that the increase in the frequency and intensity of strong winds was not presented as a climate change trend, it was a conclusion that workshop participants made, based on the trends that were presented.

As can be observed in the diagramme above climate change is set to exacerbate some of the challenges that the disaster managers are faced with in the present by increasing the intensity and frequency of current hazards, including fires, flooding and disease outbreaks.

## 6. VULNERABILITY TO CLIMATE CHANGE IN THE CONTEXT OF CURRENT VULNERABILITY

By bringing together the findings of the livelihoods and sectoral workshops it is possible to create a narrative of how vulnerable people and their activities are to the possible impacts of climate change. In the livelihoods workshops participants focused largely on the impacts of climate change on farming. While highlighting the importance of farming in Letaba and Giyani, it is also again an indication of the perceived importance of climate in **agriculture**. Especially an increase in the number of extremely warm days was a concern, with subsequent increase in water demand yet possible decrease in **water** availability. While people, animals and plants requiring more water during extreme heat, being able to keep crops alive, and **providing sufficient food and water for people and animals** can become a big challenge. Considering the lack of resources and information among small-scale farmers, as highlighted in the analysis of current vulnerability, the extent to which small-scale producers can adapt to such challenges is of concern. **Loss of agricultural production** and the resulting **loss of jobs** on commercial farms was another possible impact of concern.

These concerns were to some extent echoed in the agricultural workshop, where extension officers also explored impacts on livestock and crops in more detail. The extension officers also highlighted a long list of **low cost, low tech practices that currently contribute to adaptive capacity** currently available to deal with the possible climate change impacts. This includes: planting of drought resistant cultivars; sharing of knowledge and information through farmer days and workshops; frequent irrigation and spraying programmes; cattle movement; ploughing and planting across the slopes; construction of gabion baskets and planting of vertiver grass; and the practice of integrated farming systems, with both crops and livestock. Some reliance on emergency response in relation to livestock were also evident, supplementary feeding provided by government and selling of livestock, reflecting the need to build capacity to ensure that livestock have access to grazing and water. **Spreading of information and resources** that enable the spread of the outlined low tech and low cost practices can thus help build adaptive capacity among small-scale farmers, whose lack of resources and information was highlighted in the analysis of current vulnerability. The issue of water, and the possible decrease in water availability due to increased evaporation and changes in rainfall patterns, was also highlighted by extension officers. The need to secure **access to sufficient water**, and for the parallel implementation of agricultural practices that lower water requirements was emphasised by extension officers, echoing the key messages from the livelihoods workshops.

The workshop focused on water supply and waste water management further echoed the concerns around **decreasing water supply coupled with increasing water demand** in the face of a changing climate. Workshop participants indicated that preparing for such shifts will require developing **alternative water supply**, through for example water tanks, while at the same time working on **demand management** through awareness raising. The need for water related infrastructure development to be centred around **more dynamic trends and variable water volumes** was also emphasised.

**Health**, while not initially a central focus of the livelihoods workshops, came up in relation to various income generating activities, and further emerged as a separate area of concern among participants. For example, in relation to an increase in the number of extremely warm days there were concerns related to an **increase in skin diseases** among farmers and hawkers. For hawkers there was also concerns that **consumers may be affected by increasing temperatures**, and thus be unable to come to markets and stalls. The impact of heat on vegetables and other foods was also highlighted, and becomes particularly important in the context of limited storage facilities and proper stalls, as highlighted in the analysis of current vulnerability. Participants at the health sector workshop pointed out how **consumption of unsafe foods** is already a problem under present conditions, and in the context of projections of rising temperatures this could become an increasing problem. **High blood pressure, diarrhoea, dehydration, fatigue and increase in diseases like malaria** were other impacts highlighted at both the community and health workshops. In terms of current adaptive capacity to deal with such impacts, aspects highlighted at the health workshop include **skills**,

**facilities, awareness and regulatory frameworks**, as well as some emergency response measures. The adaptation responses that were subsequently proposed highlighted the need to lessen the possible impacts, by for example distribution of mosquito nets, and making communities more resilient by for example ensuring that they have access to back-up sources of clean water.

A link between climate change and health was also made at the **disaster management** sector workshop, with **disease outbreaks** highlighted as a possible consequence of both increase in average temperatures and more intense heavy rainfall. Other key aspects of disaster management considered to be vulnerable to projected climate change include **infrastructure and food production**. Concerns related to the vulnerability of infrastructure also came out strongly in the livelihoods workshops, with **damage to houses, roads and bridges** due to wind and intense heavy rainfall being key concerns. For example, damage to bridges might **put children who have to cross rivers on their way to school at risk**. As was further emphasised in the disaster management workshop, damage to roads and bridges can **cut communities off**, can **disturb service delivery** to communities and in worst case lead to **loss of lives**. Disaster management officials highlighted fire response plans, early warning systems, planting of wind shields and building of walls, and emergency plans as key components of current adaptive capacity. Proposed adaptation responses to deal with projected climate change included better preparedness to respond through **planning and awareness, as well as more focus on early warning systems**. Suggested adaptation responses also illustrate an attempt to **lessen impacts through improved quality of building structures**, as well as the amendment and enforcement of various government regulations.

## 7. CONCLUDING REMARKS AND RECOMMENDATIONS

This vulnerability assessment set out to create an understanding of the local dynamics shaping livelihoods and sectors in Letaba and Giyani, and of how climate change might impact these. The participatory vulnerability assessment approach has enabled the gathering of rich local knowledge. It has also shown how the reality is complex and inter-connected, and not necessarily as clean cut as researchers would like it to be.

From the assessment some priority focus areas for assisting vulnerable groups to take action in the face of climate change have emerged. While it is important to note that these priorities are not exhaustive, as they are based on the interaction with a set number of local stakeholders (111), they create a picture of the main areas which stakeholders themselves perceive as being vulnerable to the impacts of climate change:

- **Insufficient access to clean water:** Increase in average temperatures and increase in extreme temperatures will lead to increase in water demand, with people, plants and animals all requiring more water. Yet a subsequent increase in evaporation due to higher temperatures will decrease water supply. Water supply may be put under further pressure due to an increase in the intensity of heavy rainfall events, as infrastructure is unable to deal with the increase in volumes and turbidity, leading to mixing of water and sewage and foreign materials entering the water supply system.
- **Reduced food security:** The area's agricultural productivity and quality, in terms of both livestock and crops, is at risk in the face of projected climate change. Increase in average temperatures and the number of days with extreme temperatures, coupled with a shift towards rainfall falling in shorter and more intense events, can lead to heat stress, water scarcity as well as flooding and erosion. This may result in decreased grazing capacity and subsequent livestock mortality, as well as wilting and loss of crop harvests. At the same time, high intensity rainfall events can lead to soil erosion, as well as water logging of crops and grazing areas. Increasing temperatures may also lead to the introduction of or increased spread of pests, such as chilo, a moth that causes damage to fruits.
- **Additional health challenges:** Climate change may put people's health under stress, due to both direct and indirect impacts of increasing average temperatures and increase in days with extreme temperatures. Direct exposure to heat can lead to high blood pressure, diarrhoea associated with dehydration and fatigue. Increasing temperatures can also lead to the spread of disease, through for example the spread of mosquitos carrying malaria into areas that were previously too cold for transmission.

- **Economic losses for small businesses & traders:** The running of small businesses and traders might become increasingly challenging in the face of climate change, as increasing temperatures impacts products for which there is insufficient cooling storage. Sales of food that is unfit for human consumption due lack of access to appropriate cooling storage is already a problem in the present, and increasing temperatures will compound this problem. The health of traders without proper stalls or outlets may also be impacted by the heat.
- **Damage to infrastructure:** Communities in Mopani are set to be put under further stress as infrastructure damage from high intensity rainfall events wash away roads and bridges, cutting communities off from economic hubs and service delivery. There is also potential for damage to housing and in the worst cases drowning of humans and livestock.

## 8. REFERENCES

Bekele, W., & Drake, L, 2003. Soil and water conservation decision behaviour of subsistence farmers in the Eastern Highlands of Ethiopia: a case study of the Hunde-Lafto area. *Ecological Economics*, 46: 437-451

Davies, C, Stevens, N, Archer, E, Sinden, L and Nkambule, C, 2010. *Engaging stakeholders in global change risk and vulnerability planning: a case study of the Kruger to Canyons Biosphere Region*. CSIR report Reference: NE02-PO-F

Department of Environmental Affairs (DEA), 2013a. Long-Term Adaptation Scenarios (LTAS) Research Programme for South Africa. *Climate Trends and Scenarios for South Africa*. Pretoria, South Africa

Department of Environmental Affairs (DEA), 2013b. Long-Term Adaptation Scenarios (LTAS) Research Programme for South Africa. *Factsheet 5, Climate Change and Human Health*. Pretoria, South Africa

Deutsche Gesellschaft fur international Zusammenarbeit (GIZ), 2011. *Integrating Climate Change Adaptation into Development Planning. A practice-orientated training based on an OECD Policy Guidance*. Bonn, Germany

Greater Giyani Local Municipality (GGLM), 2013. *Greater Giyani Municipality Integrated Development Plan 2013/14* [Accessed at <http://www.greatergiyani.gov.za/>]

Greater Letaba Local Municipality (GLLM), 2013. *Greater Letaba Municipality Integrated Development Plan 2013/14* [Accessed at <http://www.greaterletaba.gov.za/>]

Intergovernmental Panel on Climate Change (IPCC), 2013: Summary for Policymakers. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA

Intergovernmental Panel on Climate Change (IPCC), 2014: Summary for policymakers. In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA

Luers, A L, Lobell, D B, Sklar, L S, Addams, C L and Matson, P A, 2003. A method for quantifying vulnerability, applied to the agricultural system of the Yaqui Valley, Mexico. *Global Environmental Change*, 13: 255- 267

- Maponya, P and Mpandeli, S, 2012a. Climate Change and Agricultural Production in South Africa: Impacts and Adaptation options. *Journal of Agricultural Science*, 4(10): 48-60
- Maponya, P and Mpandeli, S, 2012b. Climate Change Adaptation Strategies used by Limpopo Province Farmers in South Africa. *Journal of Agricultural Science*, 4(12): 39-47
- Mopani District Municipality (MDM), 2008. *Reviewed Integrated Development Plan 2006-2011*
- Mopani District Municipality (MDM), 2010. *Reviewed Integrated Development Plan 2006-2013, version 5*
- NETGroup South Africa, 2012a. *Disaster Risk Assessment and Disaster Risk Reduction Measures – Greater Giyani Local Municipality*. Report developed for the Limpopo Provincial Government – Department of Co-operative Governance, Human Settlements & Traditional Affairs
- NETGroup South Africa, 2012b. *Disaster Risk Assessment and Disaster Risk Reduction Measures – Greater Letaba Local Municipality*. Report developed for the Limpopo Provincial Government – Department of Co-operative Governance, Human Settlements & Traditional Affairs
- Thompson, A A, Matamale, L and Khari:dza, S D, 2012. Impact of Climate Change on Children's Health in Limpopo Province, South Africa. *International Journal of Environmental Research and Public Health*, 9(3): 831 – 854 [accessed at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3367281/>]
- Turpie, J and Visser, M, 2012. *Chapter 4: The impact of climate change on South Africa's rural areas*. Technical Report: Submission for the 2013/14 Division of Revenue. Published by the Financial and Fiscal Commission. Accessed at <http://www.ffc.co.za/index.php/reports/technical-reports> [ 20 March 2014]
- UKCIP, 2010. *The UKCIP Adaptation Wizard V 3.0*. UKCIP, Oxford



## Namakwa District Municipality Climate Change Adaptation Small Grants Facility: Profile report for the Adaptation Fund

March 2014

### Introduction to the Namakwa District

In South Africa, resources are limited and unequally distributed across the country and across different social groups. This results in large numbers of people lacking what they need to effectively adapt to climate change. South Africa is also likely to be greatly impacted by climate change in the future, in terms of rising temperatures and changes in rainfall patterns. This is particularly so in the arid north-west of the country, where the Namakwa District Municipality (NDM) is located.

The 126 836 km<sup>2</sup> District is the largest in the country and home to spectacular biodiversity of global importance. Home also to around 126 700 people, the District has the lowest population density in the country at more or less 1 person per km<sup>2</sup>. The economy of the NDM is based on agriculture (sheep, goats, and, increasingly, game, with irrigated cropping limited to the banks of the Orange River) and mining. Productivity in both of these sectors is declining. Widespread poverty, lack of access to shelter and safe water and sanitation, food insecurity, drought, and land degradation is prevalent in most of the Northern Cape. High levels of poverty are due to high unemployment rates, which in turn is a result of job-shedding on stock farms, increasing numbers of game farms which utilize large areas of land but employ relatively few staff, and the downscaling of mines. The low population density means little attention for the area from national government and large geographic areas translate into limited access to markets, basic services, health care and education. A large proportion of the population lives in rural areas and is dependent on communal rangelands for their livelihoods.

Already drought prone and suffering from extreme heat in the summer months, the NDM is projected to be hotter and drier in the future. In addition, surface and underground water supplies are increasingly over-utilised and further threatened by climate change. An increase in aridity due to climate change could exacerbate unemployment, water scarcity, and difficulties with agricultural productivity.

### Background to the Adaptation Fund Small Grants Facility

The Adaptation Fund was established as a means to finance adaptation programmes and projects in developing countries that are parties to the Kyoto Protocol. Conservation South Africa (CSA) and the South African National Biodiversity Institute (SANBI) are currently working on submitting a final proposal for funding to the Adaptation Fund. The original project concept is **Taking Adaptation to the Ground: A Small Grants Facility for enabling local level responses to climate change**. This Small Grants Facility will aim to ensure that appropriate and effective local adaptation measures are developed and implemented for supporting increased resilience of vulnerable groups and long term

sustainable livelihoods – taking into account short- and long-term climate forecasts. The emphasis of the project will be to support projects that generate tangible adaptation responses, with a particular focus on rural areas.

Due to the NDM's susceptibility to climate change and the vulnerability of its communities, CSA and SANBI are targeting the NDM as one of the beneficiary landscapes for the Small Grants Facility. Projects funded through the facility will ensure direct access to climate change benefits for local communities affected by the impacts of climate variability and change.

### Expected Climate Change Impacts in the Namakwa District

In 2012, CSA conducted a climate change vulnerability assessment (VA) for the NDM which included identifying the climate change impacts that the District could expect in the medium term future. Recent projections from the Climate Systems Analysis Group, the Centre for Scientific and Industrial Research, and the South African Long Term Adaptation Scenarios confirm the trends captured in the VA. Temperatures in the region have increased slightly on average over the last 40 years based on South African Weather Services data obtained by CSA. In the NDM VA, **increasing temperatures** are predicted to 2050 in all scenarios, particularly along the Orange River and the south-central interior (Midgley and Holness, 2012). Drastic increases in temperature of up to 6° are projected for the region by the end of the century, forecasting temperatures well beyond the natural historical temperature variability of the region (DEA 1, 2013).

**Changes in rainfall** expected as a result of climate change are more difficult to predict. Many projections suggest a pattern of drying along the West Coast of the South Africa, including the NDM. However, rainfall in the NDM is very variable (for example Vioolsdrif on the Orange River may receive anything from 0 to 150mm of rainfall in a year) and 'the projected rainfall anomalies remain within the realm of present day climate' (DEA 1, 2013:121). Regardless, increasing temperatures will increase evaporation and evapo-transpiration, **increasing aridity** in the region overall and negatively affecting water quality and water availability.

The people, animals, and ecosystems of the NDM are already drought and heat adapted as a result of the natural historical climate of the region. However, the drastic increases in temperature and aridity projected by Midgley and Holness (2012) and DEA 1 (2013) begs the question of how hot and dry is too hot and dry, what are the region's thresholds?

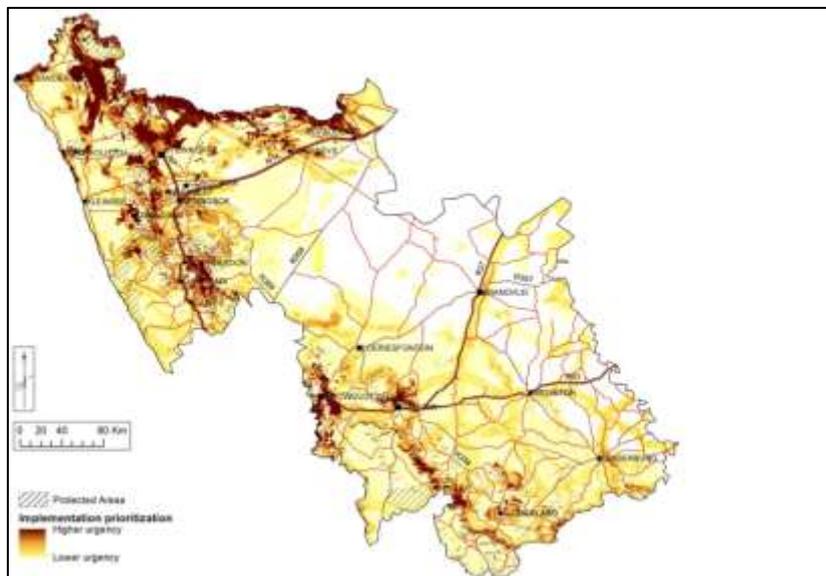
Fire is part of the system in the Fynbos nodes throughout the District. CSIR, as part of the GEF funded Fynbos Fire Project, is comparing the frequencies of synoptic patterns, conditions conducive to large fires a week and also a season ahead, under current and future climates to determine whether the likelihood of conditions that favour fires will increase. Results suggest the burning season will become longer with an **increase in the number high fire danger days** per month (Forsyth, 2013). These changes would be attributed to increases in temperature and aridity projected for the region. According to the VA, however, Fynbos nodes in Namakwa may recede under climate change. There is a clear gradual trend demonstrating **local sea level rise** along the Namakwa coast. This is likely linked to either an increase in the number or the intensity of low pressure cells off the coast causing a doming effect on the ocean surface (Mather, Garland, and Stretch, 2009). The same impacts could lead to **storm surge** activity such as was experienced in Port Nolloth in 2009. The high intensity coastline, with a steep rocky profile, is relatively less sensitive to wave action than softer, flatter coastlines, and there is relatively little valuable infrastructure along the Namakwa coast as compared with the rest of South Africa. There are however some specific vulnerabilities linked to local fishing and diamond dredging fleets, as well as ground water aquifers and coastal estuaries that may be damaged by inundation.

### Vulnerability Assessment Priority Areas

Adaptation (EbA) to climate change. Some features in the landscape are more likely to resilience to climate change than others and these were mapped as good candidates for supporting climate change adaptation in the region. These features include riparian corridors and buffers, coastal corridors, areas with temperature, rainfall and altitudinal gradients, high biodiversity areas, south-

facing slopes and kloofs, and large unfragmented landscapes (Midgley and Holness, 2012). Keeping these areas in a natural or near-natural state will allow ecosystems and species to adapt naturally to climate change as far as possible, thus supporting healthy landscapes and the ability of ecosystems to continue to provide ecosystem services. They should be considered vital elements of South Africa's ecological infrastructure in the face of climate change, underpinning local EbA.

EbA has been defined by the Convention on Biological Diversity as 'the use of biodiversity and ecosystem-services as part of an overall adaptation strategy to help people to adapt to the adverse effects of climate change'. As such, this mapping exercise also included a focus on relevant socio-economic indicators that can also inform this process. A disaster management survey conducted with 52 settlements throughout the NDM was used to determine whether there were particular areas that were more vulnerable than others in terms of their exposure to weather-related disaster risk. Coastal communities and those living along the Orange River are more vulnerable overall due to their remote location and exposure to a greater number of environmental risks, such as storm surges and catastrophic flooding respectively. The important landscape features for supporting climate change resilience were then combined with layers for areas most important for providing water in the NDM, communal farming areas important for supporting community livelihoods, and proximity to towns for the maximum ecosystem service delivery for people. A priority map for EbA in the NDM was created and is shown below.



**Figure 1: EbA priority areas map for the Namakwa District (Midgley and Holness, 2012)**

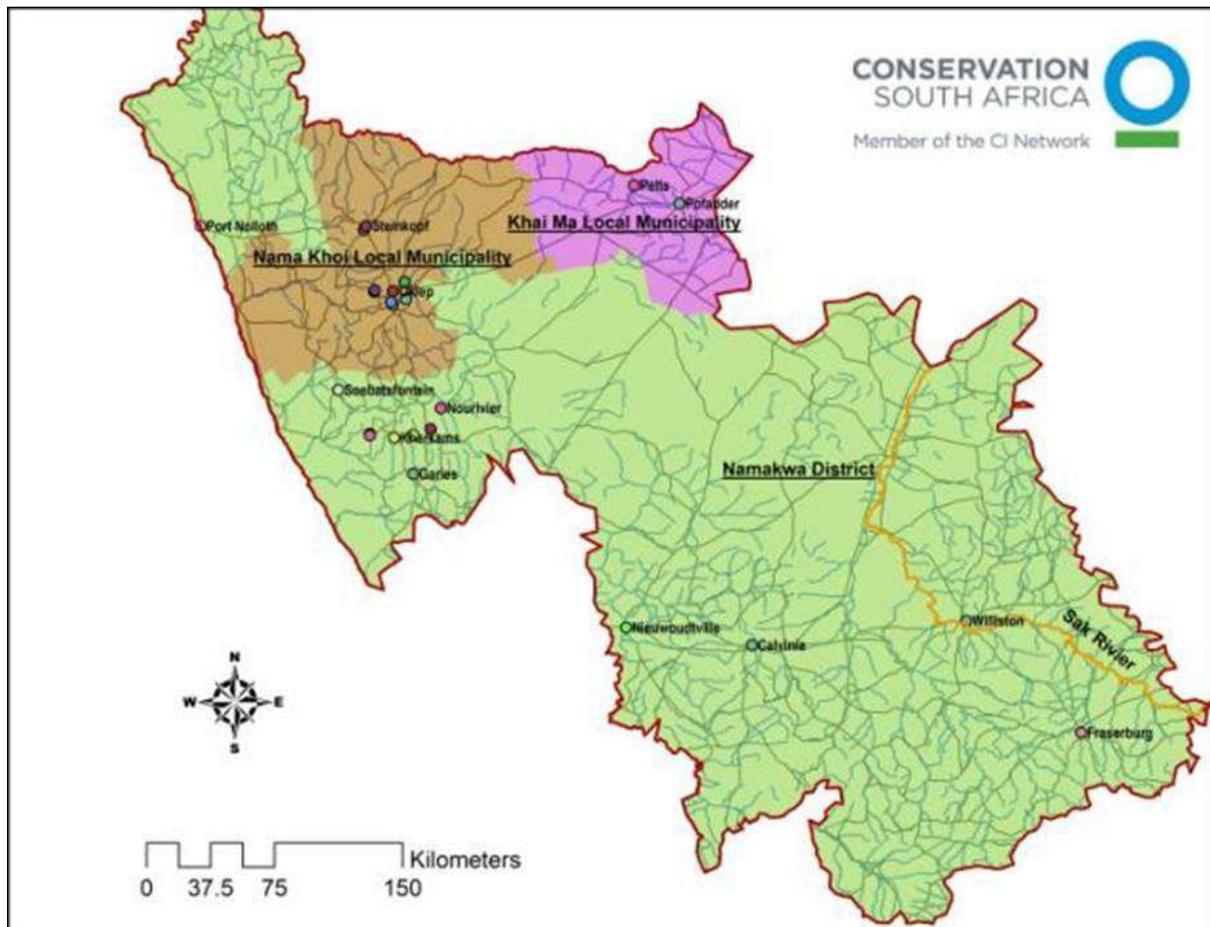
**Stakeholder mapping and engagement**

To enable broader engagement with climate change adaptation beyond EbA, CSA began a stakeholder engagement process in 2013. This began with 9 workshops with local government – 2 at the District level and 7 at the local municipal level – based in the Let's Respond Toolkit (DEA 2, 2012). These sessions were focused on integrating climate change risks and opportunities into municipal planning through strategic integration of the topic into the Integrated Development Plans for each municipality and through project design and budgeting. Later in 2013 and in early 2014, linked with Adaptation Fund proposal development, CSA and SANBI began to engage directly with affected community groups, local NGOs and CBOs, and relevant government departments and research and development institutions. The goal of all of these engagements has been to develop a sensible, strategic, effective, stakeholder engaged strategy for climate change adaptation in the NDM.

On 27 November 2013 an initial engagement session was held in Cape Town at the AGM of the Northern Cape Regional Network, a network of NGOs and CBOs active across the Northern Cape including the NDM. Stakeholder mapping started at this meeting, where participants were asked to confirm that the list of stakeholders CSA and SANBI had compiled was made up of relevant organisations, and to expand this list with additional organisations they are aware of and working with.

After a short input on expected climate change impacts in the region, the group was asked to prepare some comments on good adaptation actions for the NDM.

On 13 February 2014 a second, larger stakeholder engagement session was held in Springbok and attended by 61 representatives of 38 locally active institutions. After inputs on the Adaptation Fund and Small Grants Facility, climate change and local impacts, and understanding community-based adaptation, much of the day was spent in interactive sessions identifying focus areas and appropriate actions for local level climate change adaptation in the NDM. The stakeholder mapping exercise was also completed at this meeting.



**Figure 2: Stakeholder Map of the CBOs, NGOs, and Community Groups active in the NDM who completed the mapping exercise at the 13 Feb 2014 meeting**

Many more organisations, institutions, research and implementation partners, and community groups were contacted for their preliminary inputs over the phone and by email. Their submissions and suggestions are also included in this profile report.

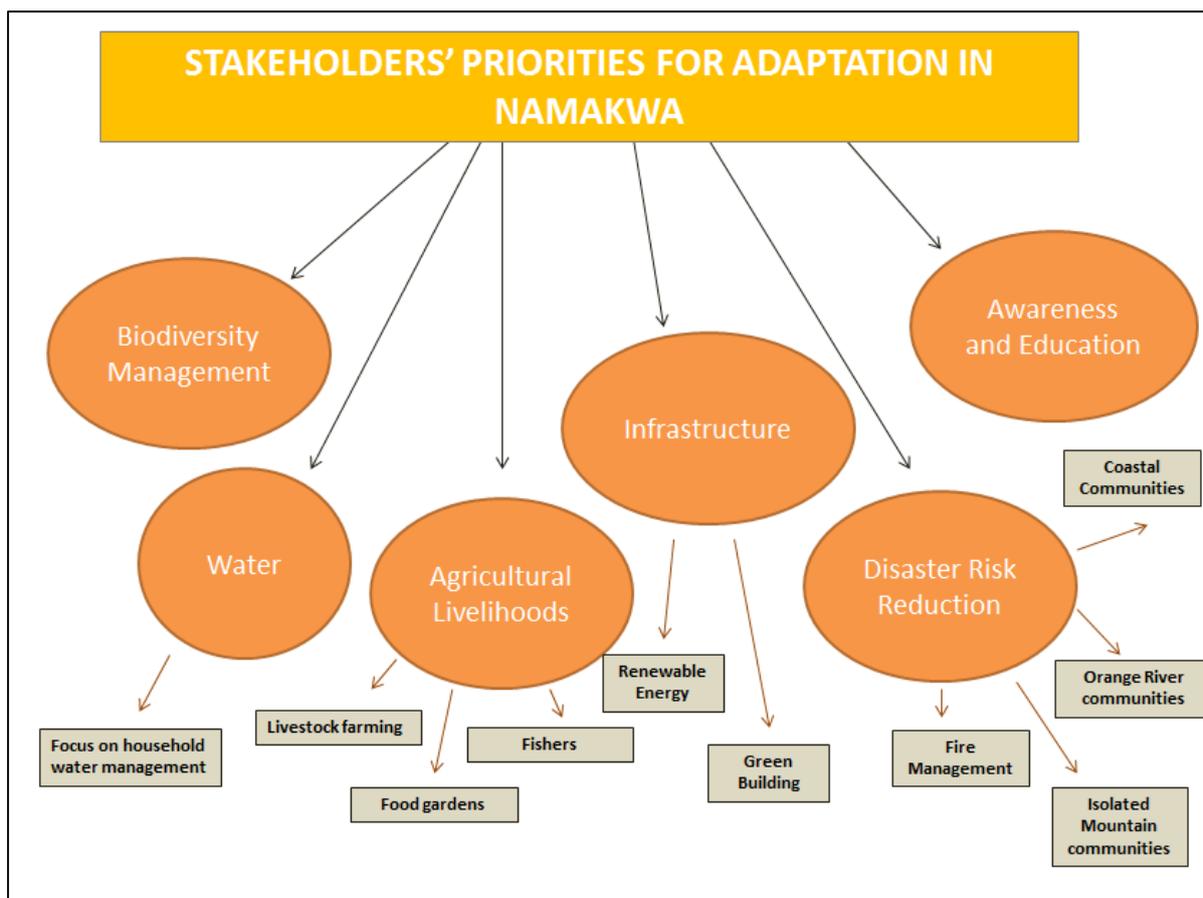
## Adaptation Priorities from Stakeholder Engagements

At the April 2013 Let's Respond inception meeting with local government, some strategic priority areas for climate change response emerged and were captured to inform project design. These are shown in the diagram below:



**Figure 3: Namakwa District climate change adaptation priority response areas, as defined by local government officials in 2013**

Since this inception meeting, 10 stakeholder engagement sessions have taken place (8 local government climate response planning workshops, and 2 Adaptation Fund proposal planning sessions). The above Strategic Directions have remained the same – all the stakeholder groups, when asked to think about adapting to climate change, have similar priorities in mind for the NDM. They have, however, been refined somewhat by further discussion with an increasing number of stakeholders. These Stakeholder Priorities for climate adaptation in Namakwa are, as captured above, **Water Scarcity, Awareness and Education, Sustainable Infrastructure, Sustainable Livelihoods, Disaster Risk Reduction, and Biodiversity Management** for ecosystem service delivery.



**Figure 4: Refined schematic of NDM adaptation priorities following expanded stakeholder engagement**

These are the similar to and certainly fall within the same broad categories as the indicative project ideas listed in the original proposal to the Adaptation Fund.

**Global Adaptation Fund Eligibility and Project Selection Criteria**

The Global Adaptation Fund is looking to support projects that increase the resilience of vulnerable groups and long term sustainable livelihoods, with an emphasis on projects that generate tangible adaptation responses in rural areas. The integration of scientific and local knowledge is an area of particular interest. Reduced vulnerability of local communities to existing and anticipated impacts of climate change may be achieved through strengthened livelihood strategies, increased adaptive capacity, and building ecosystem resilience, amongst other approaches. Listed below are criteria for the selection of small grant recipients and for the assessment of the climate adaptation projects they will submit for funding.

**Criteria for Small Grant Recipients (Note: these criteria have since been updated, based on stakeholder feedback – see Section II.A of Community Adaptation SGF Full Project Proposal)**

- Grant recipients must be South African institutions with a proven project implementation track record
- Grant recipients will have worked on human development and/or climate change response projects previously
- Grant recipients must have a sound record of good governance and financial management
- Grant recipient project management structures must include women as well as men, and should show a commitment to BBEEE
- Grant recipients will have established long standing relationships with communities in the District
- Grant recipients will have a clear mandate from project beneficiaries to work in the project focal area, and this mandate will be aligned with project investments

- Grant recipients will demonstrate willingness to participate in learning and knowledge development and dissemination processes
- No duplication of funds

#### **Criteria for Project Selection:**

- Projects must clearly demonstrate that they respond to a particular climate change or climate variability threat/s as identified in the Vulnerability Assessment
- Projects must support concrete actions and deliver tangible results that increase resilience to climate variability and change in vulnerable groups
- Projects must be implemented in rural or semi-rural areas and support grass root communities and especially women
- Projects must respond to the needs of vulnerable people and be located within the broader development context (provide economic, social, and/or environmental co-benefits)
- Projects will benefit groups rather than single individuals
- Projects must be designed so that they are replicable and scalable
- Projects must clearly demonstrate how success will be measured
- Projects must clearly demonstrate how they will maintain sustainability after the SGF funding ends
- Projects must demonstrate willingness to support learning outcomes and inform processes to scale up and replicate approaches in other communities

Additionally:

- Projects are encouraged to provide benefits across different sectors
- Where relevant, projects are required to demonstrate sustainable land tenure arrangements
- Projects are encouraged to support sustainable partnerships

The Adaptation Fund is looking to fund projects that address a very clear climate change related threat and have a clear and demonstrable link to tangible, measurable, visible adaptation for people. Simple projects with real impacts that generate a public good for communities or groups rather than individuals will be favoured.

#### **The Adaptation Fund will not fund:**

- Projects that cannot demonstrate clearly that they directly respond to climate risks
- Projects that do not result in tangible, measurable adaptation benefits for people – this includes any project that is only awareness and education, only planning, or only research without feeding into an implemented activity.

### **Small Grants Facility for Adaptation: Investment Priorities**

The key climate change related risks that the Namakwa District is facing are related to **increasing temperatures** and **increasing aridity**. These lead to **heat stress** and **water stress** (both in terms of water availability and water quality) for people, as well as the plants and animals that are the foundation of a high percentage of the region's livelihoods. Severe weather events, such as **droughts**, **floods**, **storm surge**, and **fire** could be very serious climate related risks in some areas at certain times. The **Investment Priorities** summarised here seek to address these climate risks and will inform project selection for funding through the small grants facility.

#### **Investment Priority: Agriculture and Food Security**

95% of land in the Namakwa District is actively utilised for agricultural pursuits – mostly small stock farming. A large percentage of the population is engaged in farming and directly dependent on this for their livelihoods. Agriculture is likely to be affected by drought, heat stress in plants and animals, as well as water quality concerns. Coastal communities dependent on fishing activities that are likely to be affected by climate change are also included here.

#### **Investment Priority: Human Settlements**

There are 52 rural human settlements in the NDM. Typically, human settlements in Namakwa are clustered closely, usually around a water source. The region has a population of around 126 000 and

settlements are often isolated. Human settlements are likely to be affected by heat stress in people (particularly the very young and very old) and water stress both in terms of water availability and water quality as a result of climate change. Coastal settlements may be increasingly at risk from storm surge, and settlements are vulnerable to flooding after long periods of drought.

### **Investment Priority: Ecological Infrastructure**

Ecological infrastructure refers to the functioning ecosystems in a landscape that deliver valuable services to people, such as water and grazing. Investing in ecological infrastructure is intended to manage, maintain, and sometimes restore the ecosystems functions and services that support climate resilient livelihoods.

#### **Ensuring Benefits Accrue to the Most Vulnerable**

Defining vulnerability and ensuring that climate vulnerable groups benefit most from project activities is one of the core challenges the SGF will face. Vulnerability in the climate change arena refers to the degree to which a population is susceptible to, or unable to cope with, the adverse effects of climate change, variability, and extremes. Vulnerability is made up of features related to the character, magnitude, and rate of climate impact the population is exposed to, the internal characteristics of the population that influence how affected by, or sensitive to, the impact it is, as well as the population's capacity to adapt to a changing climate or one characterised by climate extremes ([www.ipcc.ch/pub/syrgloss.pdf](http://www.ipcc.ch/pub/syrgloss.pdf)).

At the 13 February 2014 stakeholder meeting it emerged that defining vulnerability is complex, sensitive, and occasionally politically charged. It is not easy to define who the most vulnerable groups are and an agreed definition of the term is needed to inform project implementation.

Nonetheless, small scale farmers and coastal communities were identified as vulnerable groups generally. Stakeholders suggested water shortage, income, food security measures, and level of education might be appropriate indicators, but it was agreed that poverty and vulnerability are neither straightforward nor static conditions.

Group discussions with stakeholders resulted in the following broad ideas on ensuring that the most vulnerable groups, however defined, are the main beneficiaries of any Adaptation Fund:

1. Research (needs assessment) is needed as a first step to identify the groups and their needs. This could include questionnaires in schools and ECD centres, door to door surveys, talking with local leaders/elders, or focus groups. The focus of this research should be on problem definition, problem solving and project design.
2. Challenges, solutions, and sustainable project ideas should be identified by the beneficiary communities themselves.
3. Pilot projects may benefit from implementation where it has a good chance of succeeding, rather than focusing exclusively on the MOST VULNERABLE and having projects fail for logistical reasons.
4. Following SMART project design – specific, measurable, achievable, realistic, and time-bound (the group also added EcoFriendly) – will ensure tangible results are achieved and scientific and local knowledge are well integrated.
5. Project implementers should ensure broad participation but work with beneficiary groups to establish agreed upon processes that enable any benefits to flow first to those who need them the most, as defined by the community themselves and not by outsiders.
6. Using accessible and easy to understand messaging around projects will ensure that people of all age groups, gender, cultural groups, and levels of education will be able to participate meaningfully.
7. Good communication, frequent review and reflection (monitoring), and regular lessons sharing is critical for ensuring that projects are achieving their intended goals and benefitting the intended groups. Sharing lessons on what has worked is valuable, but sharing lessons on things that did not work so well perhaps even more so.

## Conclusion

Through engagement with a wide range of stakeholders on the subject of climate change response in Namakwa over several years, 3 Investment Priorities for climate change adaptation planning and project design have been identified. These are **Climate Resilient Agriculture and Food Security**, **Climate Resilient Human Settlements**, and **Climate Resilient Ecological Infrastructure**. The Global Adaptation Fund Small Grants Facility provides an opportunity to explore concrete projects with tangible results for local rural populations within some or all of these Investment Priorities.

## Supporting Documentation and References

### Supporting documents

Workshop reports from April and October 2013 climate change response planning with the Namakwa District

Workshop reports from June, August, September, and November 2013 climate response planning with the Namakwa local municipalities

Meeting notes from December 2013 meeting with the Northern Cape NGO Network

Meeting report from February 2014 Adaptation Fund Small Grants Facility stakeholder engagement session

### References

Bourne A, Donatti C, Holness S, and Midgley G. 2012. *Climate change vulnerability assessment for the Namakwa District Municipality*. Full technical report - Conservation South Africa. Cape Town, South Africa.

DEA 1 (Department of Environmental Affairs). 2013. *Long-Term Adaptation Scenarios Flagship Research Programme (LTAS) for South Africa. Climate Trends and Scenarios for South Africa*. Pretoria, South Africa.

DEA 2 (Department of Environmental Affairs, Department of Cooperative Governance, and the South African Local Government Association). 2012. *Let's Respond: A toolkit to integrating climate change risk and opportunities into municipal planning*. Pretoria, South Africa.

Forsyth, G. 2013. *Information management, fire research and modelling, and fire risk assessment: Abridged progress report*. CSIR Natural Resources and the Environment, Stellenbosch

Mather, A, G. Garland, and D Stretch. 2009. *Southern African Sea Levels: corrections, influences, and trends* in African Journal of Marine Science 31(2)

Midgley, G, and S Holness. 2012. *Bio-physical impacts of climate change for the Namakwa District: Expert Report*, in Bourne A, Donatti C, Holness S, and Midgley G. 2012. *Climate change vulnerability assessment for the Namakwa District Municipality*. Full technical report - Conservation South Africa. Cape Town, South Africa.

## Annex III: Letters of support

### Annex III.1 DEA request of support for the selection of the MDM as a pilot site



#### environmental affairs

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA

Private Bag X 447 · PRETORIA · 0001 · Fedsure Building · 315 Pretorius Street · PRETORIA  
Tel (+ 27 12) 310 1730 · Fax (+ 2786) 588 7402

Ref: NIE

Enquiries: Mr. Shonisani Munzhedzi

Tel: 012 310 1730 Fax: 086 588 7402 E-mail: [smunzhedzi@environment.gov.za](mailto:smunzhedzi@environment.gov.za)

**The Municipal Manager  
Mopani District Municipality  
Private Bag x 9687  
Giyani  
0826**

**25 February 2014**

Dear Municipal Manager

**Re: Request for support for the selection of the Mopani District Municipality (MDM) as a pilot site for South Africa's Climate Change Adaptation Small Grants Facility project**

DEA has appointed SANBI to act as National Implementing Entity (NIE) to the Global Adaptation Fund. As part of this process, SANBI is seeking the support of the Mopani District Municipality (MDM) for the selection of an area within the MDM as a pilot site for the development and implementation of a Small Grants Facility for climate adaptation finance.

The Adaptation Fund was established by the Parties to the Kyoto Protocol of the UNFCCC, as a mechanism to finance concrete adaptation projects and programmes in developing country parties. The fund is capitalised mainly from a percentage of proceeds of the Clean Development Mechanism. Projects that are designed to implement adaptation responses may be eligible to access project funds via Multilateral Implementing Entities (MIEs) and National Implementing Entities (NIEs). In South Africa, SANBI has been accredited by the Department of Environmental Affairs (DEA) to serve the role of National Implementing Entity (NIE).

In late 2012, the NIE issued a call for proposals and developed two project proposals that were successfully submitted to the Adaptation Fund. Together with its partner institutions, the NIE is currently developing these proposals into fully developed project concepts. These will need to be submitted to the Adaptation Fund for further consideration in mid 2014.

One of these projects is for a Small Grants Facility for Climate Change Adaptation. Entitled "Taking adaptation to the ground: a small grants facility for enabling local level responses to climate change in

South Africa", this will be a small grant facility that builds resilience in vulnerable communities by supporting the development and implementation of projects that respond to local climate risks. It has been suggested that the Small Grants Facility project will pilot its approach in the Namakwa and Mopani Districts in Northern Cape and Limpopo Provinces respectively. It is envisaged that approximately 6 grants of \$80 000 each will be supported in each of these focal Districts. Each project will be led by a local partner organisation that has a track record that illustrates their ability to manage this level of funding. Each project will also deliver tangible, measurable and direct benefits to local beneficiaries. Adaptation Funds will not usually be able to be used to sustain ongoing initiatives.

More information can be found in the approved Project Concept Proposal.

Should the focus on the MDM be approved by the District Municipality, the NIE will work with relevant stakeholders to support the project development process and complete the necessary project documentation. This documentation must be submitted to the Adaptation Fund Board by the end of June 2014 in order for the current deadline to be met.

During the project development process, the NIE will need to identify possible responses that could be supported as well as local organisations that have these project and financial management capabilities. The project was initially conceptualized to support NGOs and CBOs, and the viability of this approach in Mopani will need to be discussed once an inventory of such institutions has been compiled.

In order to ensure that the project is fully aligned with the priorities of the District, the NIE is seeking support from the MDM. In particular, the NIE is seeking support for:

- The identification of suggested project focal areas
- The identification of stakeholders who should be consulted and involved in project design
- The identification of completed, ongoing or planning initiatives that are relevant to the project, including projects that the SGF interventions can align with or build on
- The identification of any climate related research or baseline work that can be used in the compilation of the vulnerability assessment that will be undertaken for the focal areas
- A commitment to support project design and implementation so as to ensure that these are aligned with municipal priorities, including those contained in the IDP, SDF and LED programmes of the DM
- A commitment, where relevant, to support long term project sustainability once the AF investment has come to a hold

We would be very grateful if the MDM could:

- Consider this request
- Indicate possible priority areas where the project could focus
- Provide a letter of support for the involvement of the Mopani District Municipality in the project

The timeframes for the project development process are unfortunately tight. It follows that we would be grateful for a response to this request for support by the end of February 2014.

Please note that Dr. Mandy Barnett ([M.barnett@sanbi.org.za](mailto:M.barnett@sanbi.org.za); 021 7998895) who is the Director of the National Implementing Entity in SANBI, can be contacted for technical information on the project. Mr. Vhalinavho Khavhagali ([vkhavhagali@environment.gov.za](mailto:vkhavhagali@environment.gov.za); 012 310 3899) and Ms Mikateko Sithole ([mfsithole@environment.gov.za](mailto:mfsithole@environment.gov.za); 012 310 3177) are available in the department to provide strategic support to the process.

Your positive response would be highly appreciated.

Yours sincerely



Ms Nosipho Ngcaba

Director-General

Department of Environmental Affairs

Letter signed by: Ms. J Beaumont

Designation: Deputy Director General Climate Change and Air Quality

Date: 26 February 2014.

Annex III.2 Municipal Manager letter of support of the MDM as a pilot site



Office of the Municipal  
Manager

## MOPANI DISTRICT MUNICIPALITY

Government Buildings  
Main Road  
Private Bag X9687  
Giyani  
0826

Tel: +27 15 811-6300  
Fax: +27 15 812-4301  
E-mail: tim@mopani.gov.za

Enq: Nemugumoni TLP

Date: 27 February 2014

The Director General  
Climate Change and Air Quality  
Dept. Of Environmental Affairs  
Private Bag x447  
Pretoria  
0001

### MOPANI DISTRICT MUNICIPALITY (MDM) AS A PILOT SITE FOR SOUTH AFRICA'S CLIMATE CHANGE ADAPTATION SMALL GRANT FACILITY PROJECT.

1. With reference to your letter dated 25 February 2014,
2. Mopani District Municipality hereby provides its support to the proposed programme. As explained from your letter, the adaptation projects will participate in sustaining the livelihood of the community. This programme will also participate in job creations and skills development to the communities.
3. As requested, the identified project focal areas of implementing the projects will be Greater Letaba and Greater Giyani Local Municipalities
4. Hoping that you will find the above in order.

Yours Faithfully,

M. MAAKE  
MUNICIPAL MANAGER

# Annex IV: Attendance Registers

## Annex IV.1 Namakwa stakeholder workshop 13 February 2014

### ATTENDANCE REGISTER

OCCASION: Adaptation Fund Proposal Stakeholder Engagement

DATE: 13 February 2014

PLACE: Kokerboom Conference Centre Springbok

NO	NAME AND SURNAME	REPRESENTING	CONTACT NUMBER	FAX/EMAIL	ADDRESS	SIGNATURE
1	Amanda Bourne	Conservation South Africa	027 718 1565	aboutme@conservation.org	Springbok	
2	Lynelle Mattheys	Nine Senkel House	014 463 5673	lynelle@ninesenkel.co.za	Steintjops Cape Town	
3	Shahida Jundi	SAND BI	021 998 884	s.davids@sandbi.org.za	Sandbi Sunderland	
4	Ellie Stander	Stakeholder Advice	0866 881 27		SOEBATSPOUNTELV AVIARIE	
5	SAMUEL MONNIE	SOEBATSPOUNTELV AVIARIE	08556 628127			
6	Kerika Neegama	SANBI PIC	01 99123100	Kerika@indigodog.com	Cape Town	
7	Trance Esbey	ESVT	078 223 5973	trance@esvt.org.za	London	
8	PAULIE VAN DER MERWE	buuyio Dope INO P/N	011 008 7929	cornelius@buuyio.com	Rietfontein	
9	Corneels LUKKIE	Kawitshani Ety. Foundation	078 478 5184	cornelius@kawitshani.com	Kh. Williams	
10	Bonnie Schumann	Endangered Taxite	072 123 4232	bonnie.s@endtaxite.com	P.O. Box 172 Koxton	
11	ALYN LARSEN	Namakwa WFW	081 402 066	alyn@namakwa-wfw.gov.za	Spring Street Cape Town	
12	Paulinosi Dlamini	Khari-Mo Mun	071 7510 234	Paulinosi@khari-mo.com	P.O. Box 100 Port Alfred	
13	Lesire Seemdi	ISC	073 252 416	lesire@isc.org.za	Port Alfred	
14	Ronald Raa	Therway Home	078035981	ronnie@therwayhome.com	Therway of Arts Beaufort	



NO	NAME AND SURNAME	REPRESENT	CONTACT NUMBER	FAX / E-MAIL	ADDRESS	SIGNATURE
15	Trauus Lena	Speegruver A/O	073449464	027-4533306	Speegruver	
16	Shannon Faring	Indigo	0804605803	shannon@indigo.co.za	Nieuwoudtrille	
17	Jalene Hartebeek	Namuc	0783144228		NABEEEP	
18	FRANCES HARRIAMS	NAME RE KANSE	0835487136	frances.abraham@gmail.com	Nababeep	8265
19	Diana Mentoor	Speegruver A/O	0816056670	0279441350	Speegruver	
20	Breuker Darius	Namuko	0279441010 018607393	namuko@telkomsa.net	Reep	
21	Berrie Stekels	N.D.F	0733808881	berrie.stekels@gmail.com	NABEEEP	
22	Corneilus Nels	NDM	0749222331	nelsn@namakwa-omgaw39	SPER	
23	AKNSARIK BOETI	SPRAUKIE HOOP	0780404422		OKIEP	
24	CAEEN CDEFE	SPRANKIE HOOP	073488898	Caeen740@gmail.com	NABEEEP	
25	M. Gardiner	CSA	0721709851	mgardiner@xandrog	SBC.	
26	R. Newman	CSA	0711091427	rnewman@caselab.co.za	SPT	
27	J. Maceriman	NLEN	0849212943	jhan@yandymag.org.za		
28	E. Myller	NAM RETROEUM	0835970737	nametroeum@gmail.com	Concecom	
29	M. Koeners	KOOL	0719253352	kuitens@bt.hoopkooi.co.za	Konoes	
30	R. van Schalkwyk	SPP	0767861333	ronald@springbokk.spp.org.za	Springbok	
31	STEPHEN LAW	EMG	0214482881	stephen@eng.org.za	Cape Town	
32	Lewes Coetoe	Nieuwou-Farrus	0843311191	lewes@wfp.org.za	Upington	
33						

## ATTENDANCE REGISTER



OCCASION: Adaptation Fund Proposal Stakeholder Engagement

DATE: 13 February 2014

PLACE: Kokerboom Conference Centre Springbok



NO	NAME AND SURNAME	REPRESENTING	CONTACT NUMBER	FAX/E-MAIL	ADDRESS	SIGNATURE
1	Amanda Bourne	Conservation South Africa	027 718 1565	abourne@conservation.org	Springbok	
2	Foslovera Murtin	SANBI	021 7998395	fmurtin@sanbi.org.za	Kirstenbosch	
3	Sarsten Scapie	Conservation South Africa	021 799 8721	Sscapie@conservation.org	Kirstenbosch	
4	Sorinda Whittow	Advice Office	027 851 8070	psorinda@msb.co.za	Post Mallotsh	
5	Yolande Fulton	Rt	027 712 1249	yolande@xsind.co.za	Springbok	
6	Jillian Bezler	KHAI-NA MUN.	054 9331031	JILLIAN@KHAUNA.CO.ZA	POFADDER	
7	Silge Brandt	Bergsig Ondersteuningsgroep	0871181679	brg@brgnaadeste.co.za	Springbok	
8	Estherine Moses	Truigo	027 2181148	estherine@indigo.co.za	Neuwoudville	
9	Katrina Serron	Bergsig Ondersteuningsgroep	0726795679	brg@brgnaadeste.co.za	Springbok	
10	Abe Keppens	Eco-Sekenza	0760899457	ecosekenza@gmail.com	Springbok	
11	Evelyn Torenw	Sekenza - V/Coop	0711337991		Voelcruyter	
12	Erola Mouton	"	0743647213		Spaegruiver	
13	Quinta Tibus	Namko	0739083785	namko@klimaat.net	Okiep	
14	Ronnie Van der Valk	Namko	027-7441010 0735891122	namko@klimaat.net	Okiep	

NO	NAME AND SURNAME	REPRESENT	CONTACT NUMBER	FAX/E-MAIL	ADDRESS	SIGNATURE
15	Anna Brandt	N.A.D.E.C	0726363134	0077138889	koopstr. 114	
16	Norrie Sanson	N.A.D.E.C	081824934	0217138889	Edelaans 18	
17	Josua Brandt	Norrie Sanson Group	0736595853	—	Natabeep	
18	Cora Willem	CSA	0798496898	0377181565	Springbok	
19	R. Richardson	Norrie Sanson	573880487	—	Spilbaal	
20	E. J. J. J. J.	DEBIT	0767318731	0866026102	SPK	
21	H. J. J. J.	Norrie Sanson	0128259271	—	Spilbaal	
22	P. J. J. J.	HOUSE OF DEB	—	—	CONCORDIA	
23	J. J. J. J.	HOUSE OF DEB	—	—	CONCORDIA	
24	E. J. J. J.	Norrie Sanson	027-7188162	epont@concordia.org.za	11	
25	Josua Brandt	Norrie Sanson	0829302747	josua.brandt@concordia.org.za	Natabeep	
26	Deborah Koster	LHK	0543312200	deborah@lhr.org.za	Uprington	
27	Harvey Witt	SPP	0214685605	harvey@concordia.org.za	Cape Town	
28	Leanne Schmidt	SPP	0136471131	Schmidt.leanne@gmail.com	CONCORDIA	
29	Jan Adams	F&S	0737127222	—	NATABEEP	
30						
31						
32						
33						

Annex IV.2 Mopani meeting to introduce the Community Adaptation SGF to the MDM 14 February 2014



MOPANI DISTRICT MUNICIPALITY

ATTENDANTS REGISTER  
 SMALL GRANT FACILITY PROJECT MEETING  
 CLIMATE CHANGE ADAPTATION  
 14 FEBRUARY 2014  
 VENUE: DISASTER MANAGEMENT CENTRE: TZANEEN  
 TIME: 09H00

Name	Institution	Tel/ Cell	Fax or Email	Signature
Steyn TJ	Mopani D.M.	0827730275	steynj@qmail.com	[Signature]
Mudau NR	Mopani D.M.	0761133733	mudau@mpm.gov.za	[Signature]
Pilusa MB	Mopani D.M.	0833995105	pilusa@mpm.gov.za	[Signature]
Mikafeko Sthole	DEA	0123103177	mfsthole@environment.gov.za	[Signature]
Vhahinawho Khavhagali	DEA	0722656747	vkavhagali@environment.gov.za	[Signature]
Sheni Munzhedzi	DEA	0123951730	smunzhedzi@environment.gov.za	[Signature]
Mandy Barnett	SANBI	0826009283	m.barnett@sanbi.org.za	[Signature]
Thuso Nemugumoni	MDM.	0724228676	Nemugumoni@mopani.gov.za	[Signature]

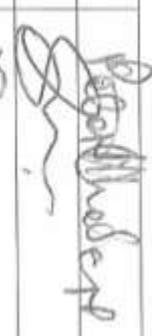
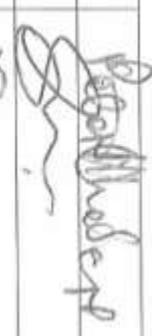
# MOPANI DISTRICT MUNICIPALITY



## ORDINARY MANAGEMENT COMMITTEE MEETING

TIME: 08H30  
 DATE: 07 MARCH 2014 (FRIDAY)  
 VENUE: DISASTER MANAGEMENT CENTRE

No.	Name & Surname	F / M	Youth	Disabled	Mobile No	Signature
1	Mr MT Maake	M			083 256 7563	<i>[Signature]</i>
2	Mr NG Lebepe	M			079 169 4441	<i>[Signature]</i>
3	Mr MC Machubene	M			082 549 1461	<i>[Signature]</i> MC
4	Mr MS Tsebe	M			076 563 9106	<i>[Signature]</i>
5	Ms KB Lebopa	F			082 530 8322	<i>[Signature]</i>
6	Ms TLP Nemugumoni	F			072 422 8676	<i>[Signature]</i>
7	Mr TE Ralulimi	M			082 366 5851	<i>[Signature]</i>

8	Mr NP Lebepe	M		078 966 3901	
9	Adv. KE Malatji	M		082 717 1122	
10	Ms N Lebone	F		072 996 0743	
11	Mr LT Motau	M		073 410 1866	
12	Ms ME Motloutsi	F		083 444 1421	
13	Mr NJ Malwandla	M		083 414 0019	
14	Mr N Mlungazi	M		078 5090 1598	
15	Ms Kgetipane	F		083 444 2524	
16	Ms Rasakgala	M		073 5577 458	
17	Mr N. Shtikomlens	M	X	083 444 2645	



MOPANI DISTRICT MUNICIPALITY

ATTENDANTS REGISTER

CLIMATE CHANGE ADAPTATION FUND SMALL GRANT FACILITY WORKSHOP  
03 APRIL 2014

VENUE: MOPANI DISTRICT MUNICIPALITY CONFERENCE HALL

TIME: 10H00

Name	Institution	Tel/ Cell	Fax or Email	Signature
Mwateko Sifule	DEA	012 310 3177	Mwateko Sifule m.wateko@dea.gov.za	[Signature]
Mony Barnitt	SANBI	012 600 1285	M. Barnitt m.barnitt@sanbi.org.za	[Signature]
Katinka Koessecker	SANBI	0199 103100	Katinka Koessecker k.koessecker@sanbi.org.za	[Signature]
Makubela M.J	LEDET	082 419 7482	Makubela M.J m.j.makubela@ledet.gov.za	[Signature]
Chauke T.E	LEDET	071 0071 996	Chauke T.E t.chauke@ledet.gov.za	[Signature]
Leshabele P.S	LEDET	079 515 6492	Leshabele P.S p.s.leshabele@ledet.gov.za	[Signature]
Slayk J	MOPANI DISTRICT MUNICIPALITY	08277 30675	Slayk J j.slayk@mopani.gov.za	[Signature]
Makomo M.P	FRATERNAL	078 521 9003	Makomo M.P m.p.makomo@fraternal.co.za	[Signature]
Semanye N.S	GAM	073 426 232	Semanye N.S n.s.semanye@gam.gov.za	[Signature]

Name	Institution	Tel/ Cell	Fax or Email	Signature
Mauetko MA	LEDET	0828010795	maueto@ledet.go.id	
Pius MS	MDM	0833945105	pius60mapaniguna	
MUDAN NR	Mepan District Municip	0761133733	mudan@empungjwa	
Maifala M.J.	Mepan Dist Mun.	0158116300	maifalaz@empungjwa	
Hlongwane T.W	BEA	0158116300	hlongwane@environment.gov.za goodfr@agriculture.gov.za	
Kopeli R.S	AGRICULTURE	0726264005	mapulej@gmail.com	
MESO MJ	AGRICULTURE	0834644864 0837884218	meso@engeni.com	
MWENJA SS	COM - AGRICULTURE	0826731092	hgwengy@engeni.com	
Raba babela	G.M	07959411	EricR@glm.gov.za	
Lesbe M	Mpani District Mun.	0158116300	lesbe@empungjwa	
Thuso Nemqumoni	MDM (CSD)	0823871116	Nemqumoni@empungjwa	
Mashogwane ME	LDA LETABA	0836367202	mashogwane@glm.gov.za	
Maja M	LDA LETABA	0784507867	maja@glm.gov.za	
Mawunda V.	MDM	0834443315	mawunda@empungjwa	

←  
 Ishouko@engeni.com  
 Siyama@engeni.com  
 gw@mail.com



MOPANI DISTRICT MUNICIPALITY

ATTENDANTS REGISTER

CLIMATE CHANGE VULNERABILITY ASSESSMENT WORKSHOP  
 10 APRIL 2014  
 VENUE: MDM : GIVANI SATELITE OFFICES  
 TIME: 09H00

Name	Institution	Tel/ Cell	Fax or Email	Signature
MUDAU NR	MDM	0761133733	mudau@mopani.gov.zw	
Katinka Magoosather	SANSI	0799123100	kmagoosather@sansi.org.zw	
Hkutha HJ	mdm sigodi	~	~	
Mtshubele HS				
Chabalala R.J.	MDM-Givani	0730658812	chabalalaj@mopani.gov.zw	
MASERINGA S.M	M&M GIVANI	0715461645	~	
Mkuna X.E	MDM Givani	0720269853	xukuna@mopani.gov.zw	
CHEPPE RK	MDM BROOKSIDE	0795246381	~	
DONGALLI NJ	MDM	0761657442	NJA	





NAME	INSTITUTION	DESIGNATION			TEL NO.	FAX NO.	E-MAIL ADDRESS	SIGNATURE
		Female	Male	Disabled				
Mekhobek H.D.	POD m	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Nibana MB		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Nileans MB	Mantung Munt	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Modika E	Mantung Muntip	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Mbrokshela MS	GLM	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Sono M.M	LEDET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Lepulom M.M	MDM	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Shayati	MDM	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
CHAURTE	LEDET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				



MOPANI DISTRICT MUNICIPALITY

ATTENDANTS REGISTER

CLIMATE CHANGE-VULNERABILITY ASSESSMENT WORKSHOP

14 APRIL 2014

VENUE: MDM CONFERENCE HALL

TIME: 09H00

Name	Institution	Tel/ Cell	Fax or Email	Signature
Mudau NR	MDM	0761133733	mudau@mpm.gov.sz	
Baleyi TH	LBA SUYANI	073 615 3509	Baleyi Thomas baleyi@mpm.gov.sz	
Katuka Maasathu	SANDSI	0799123100	k.maasathu@sansi.org.sz	
Sithole MR	LDA AGRICULTURE	0839511543		
Manganyi NS	LDA GIGONI	082 8114 293	nsamantiko@vuln.mopani.gov.sz	
Nqobeni SR	LBA GUYANI	0749281652	nqobeni@mpm.gov.sz	
Mgwanya JS	LDA GUYANI	083 95 222 05	mgwanya@mpm.gov.sz	
MAMA M	LDA LETABA	0784507087	majetsidi@gmail.com	
Mashangwane ME	LDA LETABA	0834714441	masekualala@gmail.com	



# GREATER LETABA MUNICIPALITY

P.O. Box 36, Modjadisiakloof, 0835, Tel (015) 309 9246/7/8,  
 Fax (015) 309 94 19, Email: greaterletaba@gim.gov.za



GREATER LETABA MUNICIPALITY

CLIMATE CHANGE WORKSHOP

VENUE: GREATER LETABA MUNICIPALITY (MOKWAKWALA COMMUNITY HALL)

TIME: 09H00

DATE: 22 MAY 2014

## ATTENDANCE REGISTER

SURNAME & INITIALS	COMPANY	CONTACTS	EMAIL/FAX	SIGNATURE
1 Seshoka Dm	GLM	078 3350886	diny676@vie.com	<i>[Signature]</i> Seshoka
2 Musipane m.c	GLM	015 2008388	charlottem7@tjeregpa.com	<i>[Signature]</i> Musipane
3 Mtembeni S.C	GLM	07997149543	Emelakana@gmail	<i>[Signature]</i> Mtembeni
4 Mampoue T.N	GIM	07971148185	Batsajwa@gmail	<i>[Signature]</i> Mampoue
5 Morwathshela m.j	Makshwenyego	083 968 3308		<i>[Signature]</i> m.m.j.

"To be an outstanding agro processing and eco-cultural tourism hub"

# GREATER LETABA MUNICIPALITY

P.O Box 36, Mofadiakloof, 0835. Tel (015) 300 9246/7/8,  
Fax (015) 309 9419, Email: greaterletaba@glm.gov.za

	NAME	CONTACT NO	EMAIL	SIGNATURE
6	Lebepe F	N/A	N/A	
7	Kobopape Virginia	076 841 0908	N/A	Kobopape S.V
8	Nasho Christine	073 0576 977	N/A	MASHO C.M
9	MATHI Conny	073 2564503	N/A	MATHI MIE
10	Mosibella M.M	073 0580 594	N/A	MOSIBELLA
11	SeKgale S.M	074 2853770	N/A	SeKgale
12	Kamoshaba M.A	073 2733522	N/A	Kamoshaba
13	Sethibela Idah	0766494329	N/A	Sethibela
14	Mashala Joyce	0747186359	N/A	Mashala J
15	SeSithesi Sane	0725255705	N/A	SeSithesi S
16	Maitse Maria	0792918559	N/A	M.M. Maitse
17	Mabuyira Gladys	0724934222	N/A	Mabuyira G
18	Seqavapala T.	0711941665	N/A	Seqavapala T.
19	Sheneng L.M	0725281824	0765542825	
20	OPLO Buntlang	0766150132	N/A	
21	Katinka Laasotse	0799123106	klhaasotse@SANBI	Katinka Laasotse
23	Sivuyelo Mkhalela	0782280994	Sivuyelo@evuruvuvu.gov.za	

"To be an outstanding agro processing and eco-cultural tourism hub"

# GREATER LETABA MUNICIPALITY

P.O. Box 36, Modjadisi skloof, 0835, Tel (015) 309 9246/7/8,  
 Fax (015) 309 9419, Email: greaterletaba@gm.gov.za  
 028951710

Government 2015

24	Makwela B.A	DEA	0836731454	Smatrevale	<i>[Signature]</i>
25	Mogwale MF	Metha legu	073 883 9853	—	<i>[Signature]</i>
26	Mupha TID	COGISTA	0829592496	thema la @letaba	F. Makgwahera
27	MOROM KIP	COGISTA	0722105472	—	<i>[Signature]</i>
28	MASHWEN L	COGISTA	0829529225	—	<i>[Signature]</i>
29	SETLOMMA MIA	COGISTA	0829592566	out looker & smatrevale	<i>[Signature]</i>
30	Makgwahere Matsw	Phekwele Recycling	073573 9114	—	Matswimi
31	Monoakhele Amona	Glm	08241 88585	—	<i>[Signature]</i>
32	Micetoko Sivilo	DEA	012 310 3177	Mts of letaba ensure	<i>[Signature]</i>
33	BOSOMA K.S	GLM	079287 3138	inset of govt. & kgwatheng motion	<i>[Signature]</i>

"To be an outstanding agro processing and eco-cultural tourism hub"



**Attendance Register**

**Climate Change Vulnerability Assessment Workshop**

Date: 26 May 2014, Venue: Giyani Golf Course

Name	Institution/ Job description	Tel/cell	Email or Fax	Signature
Muketeke Sitshile	DEA	012 310 3177	muketeke.sitshile@environment.gov.za	
Delani Madheula	DEA	012 395 1710	Madheula@environment.gov.za	
Pipiro Tshabalanga	SANBI	021 799 8786	mtshabalanga@sanbi.org	
Katinka Magoatlhe	SANBI	0199123100	k.magoatlhe@sanbi.org	
Sindiso Nwasa	DEA	012 595 1721	snwasa@environment.gov.za	

Name	Institution/ Job description	Tel/cell	Email or Fax	Signature
Matsunda T.R.	COGESTA CDU	0746190983		
Mathebula T.R.	COGESTA CDU	0794188167		
Mthembu - K.N.	COGESTA CDU	0829592696	mpa9192@rednet.co.za	
Pasero - A.B.	CDU/COGESTA	0824801270	paseroa@gmail.com	
Mthembu V.P.	CDU	0733879894		
Makondo T.M.	CDU/COGESTA Greater City of Municipality	0822999284	emk@emk.co.za	
Somenje M.J.	local coordinator CDU/CGM	0731426232	Somenje M.J. GREAT@CIVICMIL.CO.ZA	
Maklanganye S.S.	CDU/CGM	0820476032	kek@pa@gmail.com	
Mabuyisa T.S.	COGESTA - CDU	0832057971	—	
Mabande N.Y.	COGESTA - CDU	0837312071	ny@ny.com	
ZITHA T.A.	COGESTA - CDU	0837951200	zitha@ny.com	
MABASA T.C.	COGESTA/CDU	0837931217	ti.hande@gmail.com	
Sano M.M.	KEPET	08241971468	sannem@kepet.gov.za	

Name	Institution/ Job description	Tel/cell	Email or Fax	Signature
CHAIKIN T-F	LEDFI	071100719916	Chaikin@vermbus1e@gmail.com	
KHOSA M.B	COGSSTAR	08379781216		M.B
KULRUSI XL	COGSSTAR	01309776474	Consult@webmail.co.za	
HUMERWANE C	COGSSTAR	0826271814	CO-29	
Methu V	Coghsta	0829512832		
MARKGAPA M.T.	COGSSTAR	0829597386	markgapa@gmail.com	
MALULEKE IC	COGSSTAR	0837931213	maluleke@webmail.co.za	
NGOENI, D.E	COGSSTAR CAP	0829592774	ngoeni@webmail.co.za	



NATIONAL IMPLEMENTING ENTITY OF THE GLOBAL ADAPTATION FUND

### Attendance Register

#### Climate Change Vulnerability Assessment Workshop

Date: 28 May 2014, Venue: MDM Conference Hall

Name	Institution/ Job description	Tel/cell	Email or Fax	Signature
Katinka Magothane	Project officer, SANBI	0799123100	k.magothane@sanbi	
Mpho Tshikalangwe	Project Assistant (SANBI)	021 799 5782	M.tshikalangwe@sanbi	
MASILANI MAMABE	LETABA Hosp	0721845024		
MATHEBULA K.R.	LETABA HOSPITAL	0713473489	mthobulek@gmail.com	
PHAKULI A.D	Letaba Hospital	0838064820	phakulad@webmail.co.za	

Name	Institution/ Job description	Tel/cell	Email or Fax	Signature
MUANISA M.T	DEPARTMENT OF HEALTH	08258822142	MUSANDUSANMUNIBO@gmail.com	
MORA GI.M.F	DEPARTMENT HEALTH	07683339114		
MOKOENA M.S.	DEPT OF HEALTH	0839509203		
MILYUN M.S	DEPT of Health	07846482665	07846482665@method.co.za	
Mabunda B.F	Letika Hospital	072 187 9165	banarif@webmail.co.za	
Mepeni M.E	Malaria institute	072 830 8168	amukelani.cunice@gmail.com	
M. Katete S. Lule	DEA	012 310 3177	Mgokolele@gmail.com	
SISOJAO MURUK	DEA	012 395 1721	SILWALWA@gmail.com	
Deben Mathewula	DEA	012 395 1710	Mathewulobeg@gmail.com	
Engelbecht T.	E.H.P.	0828040444	biotech1imp@gmail.com	
Shikhongyi D.D	Ass Director	0825712456	dimisani@empeni.co.za	
Rapahala DM	E.H.P	0764983462	belu.mosese@kha.com	
Masingi T.F.	E.H.P.	0822136622	Masingi@wma.co.za	

Name	Institution/ Job description	Tel/cell	Email or Fax	Signature
Batali L.M	EHP	0843481945	Batali.karakas@yah.com	
Sihore M.P	EHP	0725156246	Nkoston@webmail.co	TAPKARE.
Matjeke H.G	EHP	0834842996	matjeke@ydn.com	
MALUKE D.M	EHP	0723353133	musa.maluleke@yah.com	

## Annex IV.11 Mopani stakeholder workshop 13 June 2014

Mopani District Climate Change Adaptation Workshop

Date: Friday 13 June 2014

Venue: Arbor Park Lodge, Tzaneen



Name	Organisation	Email	contact number	Signature
Antoinette Letsolo	Limpopo Dept of Economic Development, Environment & Tourism	letsoloA1@ledet.gov.za	015 290 7063 062 909 2276	
Azwanani Makhadu	Nkur	anw@nkur.org.za	015 2976972	A Makhadu
Brian Mdungu	GenderCC	mdungu@yehoo.co.za	078 326 6579	
Dumisani Shithangu (David)	Mopani District Municipality: Department of Health	Dumisani@mopani.gov.za		
Elna Nghunyule	Khanimamba Training & Resource centre		072 928 3544	Elna
Emily Mabape	FABCO	emily@fabco.org.za	082 813 2146	EM
Emily Tjale	LAMOSA	emily@lamosa.org.za	011 833 1063 062 314 1058	EM
Enock Mocheki	FABCO			
Farah Hove	Care SA	farah.hove@care.org	083 6677 052 015 307 6657	Farah
Felone Martin	SANBI	f.martin@sanbi.org.za		
Phatuwani Ntshahengwe	Ramotshinyadi HIV and Youth Guide Centre	ramotshinyadi@gmail.com	079 526 3101 Fax: 086 545 5880	Phatuwani Ntshahengwe
Mahla Ramalepe Mogosi Ntshahengwe	Ramotshinyadi HIV/AIDS youth Guide Ramoetsinyadi HIV/AIDS youth Guide			Mahla Mogosi
Hannes Steyn / Makgopa		hsteyn2009@gmail.com	082 773 0475	
Jan Graf	AWARD	079 jan@award.org.za	079 6838404	J Graf
Katinka Waagsaether	Indigo Development & Change			
Kenny Phasha	Tsongang water and sanitation	kenny.phasha@gmail.com		
Kholoma William Mankwe	Modjadj V Care Group	kholumawm@gmail.com	053 486 3039	W Mankwe
Lerato Shoroma	Greater Letaba Local Municipality	Lerato5@gim.gov.za	072 288 1586 076 563 9106 015 811 6315 079 205 2438	
Melumetja Tsebe / Dion	Mopani District Municipality	Tsebe@mopani.gov.za	082 551 7261	
Marie-Tinka Uys	Kruger 2 Canyons	info@kruger2canyons.org	0627393650	M Uys
Marisa Coetzee	AWARD	coetzee.marisa@gmail.com	015 303 3258 083 735 1724	
Masodi Margaret Letsolo	Golang Kulani early learning centre	golangkulani@gmail.com	0534146660	M Masodi
Polyviah Moremi	Golang Kulani Early Learning Centre			P Moremi
Michael Jennings	SANBI	m.jennings@sanbi.org.za		
Mikaleko Sibhole	DEA	msibhole@environment.gov.za		
Mokgadi Phiso	Intireng	intireng@esinet.co.za	072 026 2206	M Phiso
Ngobeni Soza Rufus	Dept of Agriculture - Giyani			
Nkululeko Mabusa	Keep The Dream 196	nkululeko.ktd196@gmail.com	076 579 8710	N Mabusa

No name Patrick Sekhula	Mopani Farmers Union	Duvudzi7@gmail.com	078 5189866	
No name	Mopani Farmers Union			
Nomsa Ngwenya	Limpopo Organic Farmers & Exotic Co-operative (LVOFA)	nomsanngwenya@yahoo.com	079 849 8797	
Norah Mlondobosi	Mopani Farmers Union	Davangireh@web.co.za	0769424050	✓
Ntshavheni Mudeu	Mopani District Municipality	Mudeu@mopani.gov.za	076 113 3733	
Nurse Saloyi	itsheng	lntsoe@xinet.co.za		
Dupe Mathebula	FABCO	dupam74@gmail.com	072 254 1585 082 727 9056 082 402 2104	
Perja Brilliant	Limpopo Department of Agriculture	perjanb@gmail.com		
Petros Lepulane	Botumelo Community Development Initiative	Maakelekgona@postnet.co.za	078 428 0373 082 3740 544 015 307 6329	
Puppy Mashamba	Choice Trust	popoy@choicetrust.co.za	015 268 4051 / 015 268 2474 082 808 7684	
Prof. Kingsley Ayisi	University of Limpopo, Risk and Vulnerability Science Centre	twobona.asisi@ul.ac.za		
Queen Saloyi	Khanimamba Training & Resource centre	queen@khanimambatraining.co.za	072 417 9312	
R Ramugondo	Limpopo provincial dept of Agriculture and Rural Development	ramugondm@gmail.com	0716855981	
Samuel	Botumelo Community Development Initiative	Maakele kgona	0833494677	
Sharon Pollard / Jan Graf	AWARD	sharon@award.org.za		
Shirley Mafema	Musi	shirley@musi.org.za	0848500239	
Thuso Nemugomoni	Mopani District Municipality: Community Development	Nemugomoni@mopani.gov.za	082 987 9136 / 072 422 8676	
Wilson Saloyi	itsheng	lntsoe@xinet.co.za	0824673641	
P. P. MARGOJA	MOPANI DISTRICT MUNS	ppmargom@gmail.com	015367025	✓
S.R. NGOMENI	MOPANI DISTRICT - GIYANI	ngobeni1@gmail.com	0749854652	
Rebecca Chauwe	Isigang Water and Sanitation	rebecca@ixie.co.za	082 989 2449	
MANYIENZI ALLEN	UL - RAVAC	allen.manyenzi@ul.ac.za	079 0980 486	
EN Mooliso	DEA	EnMooliso@environment.gov.za	079 310 3735	
Thabo Hlongwane	DEA	thlongwane@environment.gov.za	079490 2739	
Julie Sonjaga	Greater Giyani Municipality	SonjagaJulie@giyani.gov.za	0731426 232	
Mzamani Khosa	Greater Giyani Municipality	khosami@giyani.gov.za	0713605172	
Mashale Peter	Makhanatsi IRUP	mashalepi@gmail.com	083 682 2434	
Sinyolo Mkhulu	DEA	SinyoloMkhulu@gov.za	012 345 1721	
Sipho Mhlongo	KIRC	srmhlongo@kircinstitute.co.za	072 170 5884	
Ntobozo Nzimande	NKUZU	ntobozo@nkuzi.org.za	0837459372	
Ravipira Eric	Banababine CPA	banababinecpa1@webmail.co.za	0728626997	
Mndiso Makwanya	Banababine CPA	banababinecpa1@webmail.co.za	073 4365676	
Molewala Selani	DEA	Dmatherulobemvinnomva.co.za	0836731454	

Mopani District Climate Change Adaptation Workshop  
 Date: Friday 13 June 2014  
 Venue: Arbor Park Lodge



Name	Organisation	Email	contact number	Signature
Arzolanets Letsolo	Limpopo Dept of Economic Development, Environment & Tourism	letsoloa@edlet.gov.za	015 290 7063 082 903 2276	
Azwitazwi Mkhado	Nkuzi	azwi@nkuzi.org.za		
Brien Mdungosi	GenderCC	mdungosi@yahoo.co.za	078 526 6579	
Dumisani Shitshengu (David)	Mopani District Municipality: Department of Health	Dumisani@mopani.gov.za	082 5712 456	
Elisa Nthunyale	Khanimamba Training & Resource centre			
Emily Matapa	FABCO			
Emily Tjale	LAMOSA	emily@lamosa.org.za	013 633 1063 082 514 1058	
Enock Mocheke	FABCO	pmocheke@fabco.co.za	08 0722256067	
Farel Hove	Cere SA	farel.hove@sa.cere.org	061 6677 052 015 307 8657	
Felone Martin	SANBI	fmartin@sanbi.org.za		✓
Phatuwani Neeralamangwa	Ramotshinyedi HIV and Youth Guide Centre	ramotshinyedi@gmail.com	079 526 3101 Free: 086 545 5880	
Tshinyedzwe Ntshini JANE	Limpopo Department of Agriculture (Giyani)	ntshini@agric.limpopo.gov.za	082 785 9218	
Hannes Steyn / <del>AWARD</del>		hsteyn2009@gmail.com	082 773 0475	
Jan Graf	AWARD			
Katinka Waagenaar	Indigo Development & Change			✓
Kenny Phasha	Tsogang water and sanitation	kenphasha@gmail.com		
Kholoma William Meeke	Modjadji V Care Group	kholomawm@gmail.com	083 406 3039	
Lerato Shoroma	Graaier Letaba Local Municipality	lerato5@glm.gov.za	072 288 1586 076 563 9106 015 811 6315 079 206 7438 082 551 7263	
Madumetja Tsebe / Dion	Mopani District Municipality	TsebeDM@mopani.gov.za		
Marie-Tinka Uys	Kruger 2 Canyons	info@kruger2canyons.org		
Marisa Coetzee	AWARD	coetzee.marisa@gmail.com		
Masodi Margaret Letsolo	Golang Kulani early learning centre	golangkulani@gmail.com	015 303 3258 083 735 1724	
Moloko Polynash Moran	Colony Kulani E.L.C.		0834155460	
Michael Jennings	SANBI	m.jennings@sanbi.org.za		
Mkateko Sithale	DEA	mkateko@environment.gov.za	010 310 3177	
Mokgethi Pitso	Itireling	pitso@itireling.co.za	072 026 3206	
Mgobeni Soza Rufun	Dept of Agriculture - Giyani			
Nkululeko Mabaza	Keep The Dream 196	nkululeko.ktd196@gmail.com	076 579 8730	

No name Patrick Sekhula	Mopani Farmers Union	Duwadzi@gmail.com	075 5185846	Patrick
No name Adam Mabaunde	Mopani Farmers Union	watsonga2@gmail.com	073 6428041	Adam
Nomsa Ngwenya	Limpopo Organic Farmers & Exhibitors Co-operative (LIFOFA) (LIFOFA)	nomsanngwenya@yahoo.com	075 849 8797	Nomsa
Norah Miondoloboi	Mopani Farmers Union	Devanofresh@twab.co.za		
Ntshavheni Mudau	Mopani District Municipality	Mudau@mopani.gov.za	076 113 3733	
Nurse Baloyi	Itireleng	estee@itireleng.co.za		
Oupa Mathhebele	FABCO	oupaem79@gmail.com	072 254 1585 082 727 9098 083 400 4304	
Petja Brilliant	Limpopo Department of Agriculture	petjamb@gmail.com		Petja
Petros Lepulene	Botumelo Community Development Initiative	Masekelezepe@postnet.co.za	078 428 0373 082 9740 544 015 307 6329	
Poppy Mashamate	Choice Trust	poppy@choicetrust.co.za	015 268 4051 / 015 268 2474 082 808 7684	
Prof. Kingsley Aysi	University of Limpopo, Risk and Vulnerability Science Centre (Josephine Aysi)	kwabena.aysi@ul.ac.za		
Queen Baloyi	Kharimamba Training & Resource centre	queen@kharimambatraining.co.za		
R Ramagondo	Limpopo provincial dept of Agriculture and Rural Development	ramagondom@gmail.com	071 665 5981	Ramagondo
Sonnet	Botumelo Community Development Initiative			
Sharon Pollard / Jan Graf	AWARD			
Shirley Mafemo	Nkul	shirley@nkul.org.za		
Thuso Nemujumoni	Mopani District Municipality: Community Development	Nemujumoni@mopani.gov.za	082 987 9116 / 072 422 8676	
Wilson Baloyi	Itireleng	wilson@itireleng.co.za	082 4613 641	Wilson
Johnson Nyatsane	Exilite (Agricultural group)	JohnsonN@workblawline.co.za	084 577 1026	
Kenny Phisocho	ISOGANI WATER & SANITATION	tsosama@pixie.co.za	082 809 1039	
Josephine Khosa	University of Limpopo	josephine.khosa@ul.ac.za	076 3188127	
Mauko MA	Economic Development Environment & Infrastructure	Mauko.MA@ecdt.gov.za	020 201 2795	
Mabunda S.T	ggm	mabundast@ggm.gov.za	072 512 2024	
Sono M.M	LEDET	Sonoma@ledet.gov.za	083 2197468	
Makhubele M.S	LEDET	MakhubeleM@ledet.gov.za	082 419 7482	M.M
Noah Mathhebele	Independent Development Trust	noahm@idt.org.za	082 321 0997	Noah
Alex Manyavere	UL - RAVSC	Alex.manyavere@ul.ac.za	079 0980 486	
Mavundza S.M	Greater Ganyu Municipality	Mavundzasita@greaterganyu.gov.za	082 644 8276	Mavundza
Mashakpi Petrus	Mohlantsi RDP	mashakpi@gmail.com	083 627474	Mashakpi
Phetola Mologadi	IDEP	Mokgobede@gmail.com		

## Annex V: Discussion Document



*South African Adaptation Fund project*

### **Taking Adaptation to the Ground: A Small Grants Facility for Enabling Local Level Responses to Climate Change**

### ***Project Discussion Document***

---

*Prepared by the SANBI NIE, SouthSouthNorth and Conservation South Africa*

*25 July 2014*

## Table of Contents

1.	Introduction and high level overview of project .....
2.	Small Grants Facility Investment Windows .....
2.1	Climate change analysis based on observed data and climate change projections .....
2.2	Vulnerability Assessments .....
2.3	Investment Windows .....
3.	Selection criteria: Small grant recipients and adaptation projects .....
4.	Roles and Responsibilities .....
5.	Oversight, Governance and Coordination.....
6.	Project identification, approval and contracting processes.....

## Acronyms

ACDI	African Climate and Development Initiative
AF	Adaptation Fund
AFB	Adaptation Fund Board
CBO	Community Based Organisation
CSA	Conservation South Africa
Letaba	Greater Letaba Local Municipality
EE	Executing Entity
FA	Facilitating Agency
Giyani	Greater Giyani Local Municipality
LTAS	Long Term Adaptation Scenarios
NGO	Non-Governmental Organisation
NIE	National Implementing Entity
SANBI	South African National Biodiversity Institute
SGF	Small Grants Facility
SSN	SouthSouthNorth
UNFCCC	United Nations Framework Convention on Climate Change

## Glossary

<b>Adaptation</b>	The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate harm or exploit beneficial opportunities. In natural systems, human intervention may facilitate adjustment to expected climate and its effects (IPCC, 2014 <sup>12</sup> ).
<b>Adaptive capacity</b>	The ability of a system to adjust to climate change, including climate variability and extremes to moderate potential damages, to take advantage of opportunities, or to cope with the consequences (IPCC, 2007 <sup>13</sup> ).
<b>Climate Change</b>	Climate change refers to the long-term shift in weather patterns. Climate change can be caused by natural causes, such as volcanic eruptions, or human causes, such as greenhouse gas emissions from the burning of petrol. Global warming, which is the general increase in temperature caused by human-related greenhouse gas emissions, is one type of climate change (Lets Respond Toolkit).
<b>Climate variability</b>	Climate variability refers to the way climate variables such as rainfall and temperature, depart from the average state, either above or below average in an area without changing the long term average. For example, a certain area might have an average summer temperature of 21 degrees Celsius but the daily temperature can range between 15-30 degrees ( Lets Respond Toolkit).
<b>Climate change Impacts</b>	The consequences of climate change on a human or natural system. For example, climate change impacts would result in less rain in an area but this could result in drought, crop failure, famine, etc. (Lets Respond Toolkit).
<b>Ecological Infrastructure</b>	Ecological infrastructure refers to strategically planned and managed networks of natural lands, working landscapes and other open spaces that conserve ecosystem values and functions and provide associated benefits to society.
<b>Exposure</b>	The presence of people, livelihoods, species or ecosystems, environmental services and resources, infrastructure, or economic, social, or cultural assets in places that could be adversely affected (IPCC, 2014).
<b>Mitigation</b>	In the context of climate change, a human intervention to reduce the sources or enhance the sinks of greenhouse gases. Examples include using fossil fuels more efficiently for industrial processes or electricity generation, switching to solar energy or wind power, and expanding forests and other "sinks" to remove greater amounts of carbon dioxide from the atmosphere (IPCC, 2007).
<b>Resilience</b>	The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to adapt to stress and change. A resilient system is one that is better able to cope with change and can recover quickly (Lets Respond toolkit).
<b>Vulnerability</b>	The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts including sensitivity or susceptibility to harm and lack of capacity to cope and adapt (IPCC, 2014).

<sup>12</sup> Van Aalst et al, 2014. IPCC working group II, AR 5, Technical Summary Report: *Climate Change 2014: Impacts, Adaptation, and Vulnerability*

<sup>13</sup> Bernstein et al, 2007. IPCC working group II AR 4, Summary Report: *Climate Change 2007: Impacts, Adaptation and Vulnerability*

# 1. INTRODUCTION AND HIGH LEVEL OVERVIEW OF PROJECT

The Adaptation Fund (AF) was established to finance concrete adaptation projects and programmes in developing countries that are parties to the Kyoto Protocol and are particularly vulnerable to the adverse effects of climate change. Funds are accessed via implementing entities that are responsible for endorsing project and programme proposals. As part of its intention to promote direct access, the AF strongly promotes direct country access via National Implementing Entities. The South African National Biodiversity Institute (SANBI) was accredited as South Africa's National Implementing Entity (NIE) to the AF in September 2011.

After establishing a high level NIE Steering Committee and a NIE Investment Framework including a set of policies and procedures to guide its work, the NIE issued a call for concept proposals in November 2012. The response to this call, which closed at the end of January 2013, was overwhelming. Over 70 diverse proposals were received. With the support of the NIE Steering Committee and an associated task team, these were subjected to a process of careful review and evaluation. This review was based on key criteria drawn from the Investment Framework and based on guidelines provided by the Adaptation Fund Board (AFB).

Through this process, two Project Concepts were selected for further development and submission to the AFB for support. These Project Concepts were approved by the AFB in June 2013. The second of these will be a Small Grants Facility (SGF) project that will contract interface agencies to work with vulnerable communities and support them to develop small projects (~USD 100,000 each) in two diverse target areas, i.e. Mopani District Municipality in Limpopo Province and Namakwa District Municipality in the Northern Cape. SouthSouthNorth Trust (SSN) has been identified as the Executing Entity (EE) for the SGF project and the Facilitating Agency (FA) in Namakwa will be Conservation South Africa (CSA). The FA for Mopani is still to be selected. The amount requested for the SGF project is USD 2,442,682.

The overall goal of the project is to ensure that local communities in the project target areas have reduced vulnerability and increased resilience to the anticipated impacts of climate variability and change. The objective is to incorporate climate change adaptation response strategies into local practices so that assets, livelihoods and ecosystem services are protected from climate induced risks associated with expected droughts, seasonal shifts and storm-related disaster events. To do so, the project will seek to increase climate resilience in productive landscapes and socio-economic systems in communities in two district municipalities in South Africa, by working directly with local stakeholders and anticipated beneficiaries through a SGF.

In addition to delivering direct and tangible benefits through the implementation of the small grants themselves, the project will seek to pilot and develop an understanding of small grant development and implementation in the context of climate finance, with a view to scaling up and replicating this model as appropriate. This approach responds directly to calls from civil society to bring the principle of 'direct access' closer to vulnerable communities, thus empowering them to determine how climate finance will be used, and to build the institutional capacity for the implementation of adaptation efforts at the local level.

It is believed that one of the most important success factors for the SGF project will be its processes of project identification, development, review and learning along with the processes that are to be put in place to build local capacity and support project implementation. With this in mind, the SGF project will comprise three components as follows:

- Component 1: Small grants – Small grants to vulnerable communities deliver tangible and sustainable benefits.
- Component 2: Institutional capacity – Local institutions empowered to identify and implement adaptation response measures.
- Component 3: Lessons learnt – Lessons learnt facilitate future up-scaling and replication of small grant-financing approaches.

### Component 1: Small grants – Small grants to vulnerable communities deliver tangible and sustainable benefits

This component will support planning and implementation of adaptation responses by vulnerable communities in the Mopani and Namakwa District Municipalities. This will be achieved through a suite of interventions that are supported through at least 12 small grants to local level civil society organisations. Each small grant will be approximately USD 100,000. The small grants may be phased and will be disbursed in tranches to ensure sound implementation processes and effective integration of project-level monitoring and evaluation. All small grants will deliver tangible and measurable benefits that reduce the vulnerabilities of local communities to existing and anticipated impacts of climate change through strengthened livelihood strategies, increased adaptive capacity and ecosystem resilience. The SGF project will encourage and facilitate the sharing of knowledge on best practices from the local to the national level.

### Component 2: Institutional capacity – Local institutions empowered to identify and implement adaptation response measures

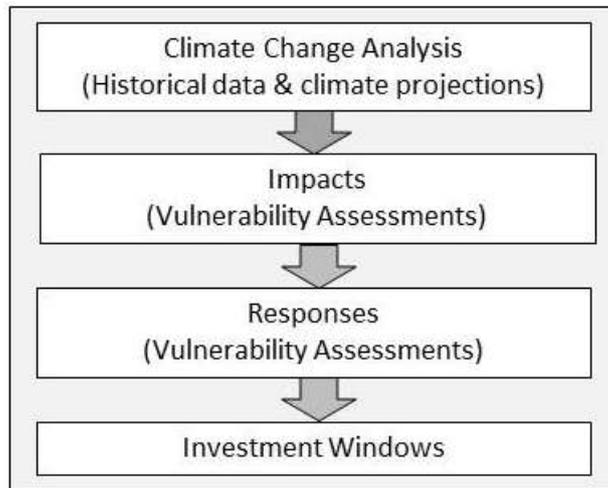
This component will focus on supporting local institutions to identify, develop and implement small grants projects in the context of climate change adaptation at all stages of the project cycle. Under this component, the FAs will work with small grant recipients to facilitate sound project identification, development and implementation support processes including local level project administration, reporting and financial management. These processes will be guided by a set of principles that ensure that projects clearly respond to experienced or anticipated climate induced stresses, and meet the criteria of the SGF, NIE and AF.

### Component 3: Lessons learnt – Lessons learnt facilitate future up-scaling and replication of small grant-financing approaches

To facilitate the proposed learning and reflection approach successfully, the SGF project will ensure that local organisations play an effective role in supporting project development and implementation. Additionally, it will be imperative to document the process to ensure that the lessons learnt inform the compilation of a methodology that identifies effective strategies and policy recommendations for scaling up and replication. In support of this, the SGF project will support innovative participatory approaches, including a practitioners' forum to discuss effective approaches of community empowerment and challenges, and a community forum, to discuss climate change adaptation challenges and possible integrated adaptation strategies. It will also seek to build local knowledge sharing mechanisms that create opportunities for reflection and learning within Districts and between Districts. These mechanisms will link into the relevant national adaptation processes with a view to developing insights that are relevant beyond the project intervention sites themselves. Independent learning processes will be conducted to reflect on implementation successes and challenges, and to develop insights. Learning outputs from the small grants projects will align with and support national and local government climate change response strategies, and will look to inform Provincial adaptation plans where possible. Where relevant, policy recommendations will be developed to inform the development of local level climate finance instruments in South Africa, with a view to creating a long term small grant facility for supporting climate change adaptation in vulnerable communities.

## **2. SMALL GRANTS FACILITY INVESTMENT WINDOWS**

The SGF project will invest in climate change adaptation interventions that fall within prioritised Investment Windows that were derived from local level climate projections (Section 2.1) and the findings of Vulnerability Assessments (Section 2.2) that were undertaken in each of the project target areas. This process supported the identification of impacts and risks to sectors, based on stakeholder input and contextualisation of climate-driven changes. Possible adaptation responses to the identified risks, proposed by local level stakeholders, were suggested over the course of the Vulnerability Assessment development and are noted in Section 4. The risks to the highlighted sectors and adaptation responses were then collated and informed the identification of the SGF Project Investment Windows (Section 2.3). The process of Investment Window identification is shown in Figure 1.



**Figure 1:** The identification of the Investment Windows was based on climate projections and Vulnerability Assessment findings.

## 2.1 Climate change analysis based on observed data and climate change projections

The climate analysis is based on the latest climate change projections, prepared under South Africa's Long Term Adaptation Scenarios (LTAS) Flagship Research Programme<sup>14</sup> Phase 1 process<sup>15</sup>. The LTAS data analysis includes historical trends, as well as statistically and dynamically downscaled projections for South Africa. In order to get a good understanding of the local scale projections for the two project target areas, a study was commissioned for a spatially specific analysis of data from the downscaled projections produced under the LTAS<sup>16</sup>. A full analysis report, currently being developed by the African Climate and Development Initiative (ACDI) at the University of Cape Town, and will be included in the appendix of the final SGF project proposal.

Results from a South African trend analysis, conducted under South Africa's LTAS Phase 1 process<sup>17</sup>, provide up to date insight into historical temperature and rainfall trends for the two target areas (Mopani and Namakwa) extending to the year 2010. These analyses confirm and extend several previous published analyses summarised in South Africa's 2<sup>nd</sup> National Communication to the United Nations Framework Convention on Climate Change (UNFCCC) that extended to the year 2000. Based on zonal analysis for the country, both the zone within which Mopani is based and the zone within which Namakwa is based show a steady increase in annual maximum temperatures for the historical period 1960 to 2010. Additionally, the analysis shows a steady increase in the number of extremely warm days, particularly in Mopani. In terms of rainfall, the zonal analysis shows that while there has only been a slight decrease in the annual average rainfall for the Mopani area there has been a steady decrease in the number of rain days. This indicates that while the overall precipitation is more or less the same, rainfall events have become less frequent and more intense, and with longer dry spell duration in-between, exacerbated by higher air temperatures. In the Namakwa area on the other hand, the trend analysis shows no significant trends in either the number of rain days or in annual average rainfall, thus indicating that overall precipitation has remained unchanged, though water availability would have been reduced through increased temperature effects.

According to the local scale analysis for the Mopani District, both annual average maximum and minimum temperatures are projected to increase into the future, thus continuing the warming trend

<sup>14</sup> The Long-Term Adaptation Scenarios (LTAS) Flagship Research Programme (2012-2014) is a multi-sectoral research programme, mandated by the South African National Climate Change Response White Paper. The LTAS aims to develop national and sub-national adaptation scenarios for South Africa under plausible climate conditions and development pathways. During its first Phase (completed in June 2013), fundamental climate modelling and related sector-based impacts and adaptation scoping were conducted and synthesised.

<sup>15</sup> Department of Environmental Affairs, 2013. Long-Term Adaptation Scenarios (LTAS) Research Programme for South Africa. Climate Trends and Scenarios for South Africa. Pretoria, South Africa.

<sup>16</sup> Same as above

<sup>17</sup> Same as above

that is currently reflected in historical records. Projected increases in minimum and maximum temperatures are in the range of one to two degrees in the near future (2020s), and in the range of two to five degrees in the distant future (2080s), relative to the period 1971-2005. Again, the projections for rainfall are less clear. In the near future (2020s) a weak annual wetting trend, relative to the period 1971-2005, is detected in the projections, particularly so in autumn. In summer and winter, however, projections display weak drying trends. For the 2050s there is no appreciable annual trend for precipitation. In autumn, a moderate wetting trend is projected, whereas in spring, there is a weak drying trend. A weak annual drying trend is indicated for the distant future (2080s), with winter set to dry moderately, with low variability between the datasets.

For the Namakwa District the temperature projections are similar to those of Mopani, and thus also indicate a continuation of the warming trend that is currently reflected in historical records. Projected increases are in the range of one to two degrees in the near future (2020s), and in the range of two to five degrees in the distant future (2080s), relative to the period 1971-2005. In terms of precipitation, the projections are more variable within and between the different datasets. In the near future (2020s) a weak wetting trend is projected on an annual basis, and in autumn in particular. In summer, rainfall is set to decrease moderately. For the 2050s, a very weak wetting annual trend is projected, particularly in autumn. In spring and summer, however, it is set to dry weakly and moderately, respectively, with low variability between the datasets. In the distant future (2080s) there is no appreciable trend in annual precipitation, but in autumn and spring, however, weak wetting is projected, relative to the period 1971-2005.

## 2.2 Vulnerability Assessments

Vulnerability Assessments were undertaken in the two project target areas, the Mopani and Namakwa Districts, to provide the foundation for selecting priority sectors for climate change adaptation responses with concrete, tangible benefits for the most vulnerable groups. The findings will be used to ensure that the adaptation responses selected for funding through the SGF are based on a sound understanding of the local dynamics and needs, as identified by local stakeholders.

The two Vulnerability Assessments used different methodologies. The Namakwa assessment built on earlier studies focused on identifying priority areas in the Namakwa District for ecosystem-based adaptation to climate change. Consultations for the SGF project were thus able to build on the relationships and capacity developed through previous engagements, and focus discussions on prioritising sectors and interventions that deliver concrete, tangible benefits for vulnerable communities. In Mopani, the engagements were not able to build on a previous base and stakeholders' understanding of climate change, and this necessitated the use of different methods to Namakwa. The Mopani approach was specifically developed to engage local stakeholders in the process, and thereby develop local capacity and to collectively identify climate change vulnerabilities. The Mopani assessment focused on two of their five local municipalities, Greater Letaba Local Municipality (Letaba) and Greater Giyani Local Municipality (Giyani), as per the request from the Mopani District to specifically focus the SGF project on these areas, as supported by a national assessment of the South African local municipalities most vulnerable to climate change<sup>18</sup>.

The stakeholder engagement processes in both target areas highlighted the need for capacity building to develop a thorough understanding of climate change and related adaptation interventions. The design of the project has been cognisant of this need, and capacity building activities have been included to support the development of project ideas and the implementation of project interventions.

### Mopani Vulnerability Assessment

The description of the methods and findings below is drawn from the detailed Letaba and Giyani Vulnerability Assessment, which can be accessed on request.

---

<sup>18</sup> Turpie, J and Visser, M, 2012. *Chapter 4: The impact of climate change on South Africa's rural areas*. Technical Report: Submission for the 2013/14 Division of Revenue. Published by the Financial and Fiscal Commission. Accessed at <http://www.ffc.co.za/index.php/reports/technical-reports> [ 20 March 2014].

## Methods:

The aim of the Letaba and Giyani Vulnerability Assessment was to create an understanding of the local dynamics shaping livelihoods and sectors in Letaba and Giyani, and how climate change might impact these livelihoods and sectors. A participatory approach was followed, through which six workshops were held in April and May 2014 with Letaba and Giyani stakeholders. A seventh workshop was held in June 2014 where the findings of the Vulnerability Assessment were presented to the relevant stakeholders. The approach was informed by earlier consultations with various departmental heads of the Mopani District Municipality who also assisted with stakeholder identification and logistics.

Two different methodological approaches were adopted for these workshops i.e. a livelihoods and a sectoral approach. The livelihoods approach was used to identify the main livelihood activities of the communities within Letaba and Giyani, the challenges facing those activities, the underlying causes and possible solutions to those challenges. The sectoral approach made use of a step-by step method to identify sector-specific stressors (climatic and non-climatic), impacts, sensitivities, adaptive capacity and possible adaptation responses.

### *Livelihoods approach*

A workshop in each of the local municipalities, Letaba and Giyanina, was held with Community Development Workers from each target area. Each workshop had three principal objectives:

- to outline the key activities from which people in Letaba and Giyani currently make a living, and rate them in terms of importance (number of people making a living from that activity);
- to create an understanding of the key stressors and challenges that people currently face in conducting the outlined key activities, the underlying causes of / possible solutions to these key stressors and challenges; and
- to explore how climate change might impact the key activities through which people make a living.

### *Sectoral approach*

Four workshops were held, one with each of the following sets of participants from Letaba and Giyani: i) agricultural extension officers; ii) water supply and waste management practitioners; iii) environmental health practitioners; and iv) municipal officials working in disaster management. Each workshop had three principal objectives:

- to assess sector vulnerability to current climate and non-climate driven stressors;
- to assess sector vulnerability to future climate driven stressors, based on an understanding of climate change projections for the Mopani area; and
- to identify possible climate change adaptation responses, based on the identified current and future vulnerabilities.

## Findings:

With historical climate trends and climate change projections indicating increasing average temperatures and increase in the number of extremely warm days, as well as increase in the intensity of heavy rainfall events, the participatory vulnerability assessment highlighted expected challenges with the availability of clean water and with general agricultural production. The potential challenges to the viability of a range of small businesses, from which a large number of people make a living, was also emphasised. This was particularly relevant to the challenges faced by traders (locally known as "hawkers"), whose foods would spoil more rapidly due to higher temperatures. With malaria already featuring in parts of the municipality, further spread of malaria with increasing temperatures, as well as other heat related health impacts and the subsequent impacts on people's ability to work, were highlighted. Infrastructure damage from heavy rainfall, is another concern emphasised both in the context of local livelihoods and by municipal officials working in disaster management.

Whilst the need for awareness raising and education was consistently noted, priority risks to be addressed through investments in climate change adaptation interventions through the SGF, as informed by local stakeholders, are seen to be:

- **Insufficient access to clean water:** This is a climate change related concern in Mopani. Increase in average temperatures and increase in extreme temperatures will lead to increase in water demand, with people, plants and animals all requiring more water. Yet a subsequent

increase in evaporation due to higher temperatures will decrease water supply. Water supply may be put under further pressure due to an increase in the intensity of heavy rainfall events, as infrastructure is unable to deal with the increase in volumes and turbidity, leading to mixing of water and sewage and foreign materials entering the water supply system.

- **Reduced food security:** Mopani's agricultural productivity and quality, in terms of both livestock and crops, is at risk in the face of projected climate change. Increase in average temperatures and the number of days with extreme temperatures, coupled with a shift towards rainfall falling in shorter and more intense events, can lead to heat stress, water scarcity as well as flooding and erosion. This may result in decreased grazing capacity and subsequent livestock mortality, as well as wilting and death of crops. At the same time, high intensity rainfall events can lead to soil erosion, as well as water logging of crops and grazing areas. Increasing temperatures may also lead to the introduction of or increased spread of pests, such as chilo, a moth that causes damage to fruits.
- **Additional health challenges:** Climate change may put people's health under stress, due to both direct and indirect impacts of increasing average temperatures and increase in days with extreme temperatures. Direct exposure to heat can lead to high blood pressure and diarrhoea associated with dehydration and fatigue. Increasing temperatures can also lead to the spread of disease, through for example the spread of mosquitos carrying malaria into areas that were previously too cold for transmission.
- **Economic losses for small businesses & traders:** The running of small businesses and traders might become increasingly challenging in the face of climate change, as increasing temperatures impacts products for which there is insufficient cooling storage. Sales of food that has gone off due to lack of access to appropriate cooling storage is already a problem in the present, and increasing temperatures will compound this problem. The health of traders without proper stalls or outlets may also be impacted by the heat.
- **Damage to infrastructure:** Communities in Mopani are set to be put under further stress as infrastructure damage from high intensity rainfall events wash away roads and bridges, cutting communities off from economic hubs and service delivery. There is also the potential for damage to housing and in the worst cases drowning.

Over the course of the stakeholder engagement conducted in developing the Vulnerability Assessment, a number of possible adaptation interventions per target risk were identified by the stakeholders. These are listed below in Box 1. (It is noted, and was noted throughout the process, that these are indicative and that the projects that will be supported through the SGF will be determined through the SGF project application process).

### **Box 1: Adaptation interventions suggested by stakeholders for the Mopani District.**

#### **Insufficient access to clean water:**

- Water harvesting, such as water tanks.
- Water storage facilities, such as reservoirs.
- Increase water use efficiency through, for example, drip irrigation.

#### **Reduced food security:**

- Introduce agroforestry, which among other things stabilises the soil and reduces nutrient and soil runoff.
- Plant pastures for supplementary feeding for livestock.
- Shift towards an increased use of Nguni breeds, a resilient breed of cattle.
- Construction of more drinking troughs for livestock.
- Encourage stock owners to keep livestock at minimal numbers to ensure sufficient grazing.
- Soil conservation structures, such as gabion baskets, to prevent erosion.
- Contour ploughing to prevent erosion.

#### **Additional health challenges:**

- Shifting working hours to avoid the warmest times of the day.
- Provision of sufficient water, clothing and shelter for workers.
- In the case of disease, ensure timely access to treatment.
- Provision of mosquito nets to prevent malaria infections.

#### **Economic losses for small businesses & traders:**

- Development of modernised stalls/ shops that protect customers and sales people from the direct sun and the heat.
- Provision of proper storage facilities for perishable foods.
- Enabling traders and other sales people to sell products that correspond with temperatures and seasons, i.e. gem tomatoes in winter and cold drinks in summer.

#### **Damage to infrastructure:**

- Construction of climate resilient roads and bridges.
- Construction of gabions on the side of the road to prevent landslides across the roads.
- Grow grass to avoid erosion.

## **Namakwa Vulnerability Assessment**

The description of the methods and findings below is drawn from the detailed Namakwa Vulnerability Assessment, which can be accessed on request.

### Methods:

As mentioned above, the Vulnerability Assessment for the Namakwa District built on the findings of a 2012 Climate Change Vulnerability Assessment undertaken by CSA, with the support of the Namakwa District Municipality, for the same area<sup>19</sup>. The focus of the 2012 assessment was to identify priority areas for ecosystem-based adaptation and develop an index of vulnerability for the Namakwa District. The 2012 assessment used socio-economic data from a disaster management survey conducted with all 52 settlements in the District to identify climate disaster prone areas and prioritise activities related to ecosystem-based adaptation.

To broaden the scope of the 2012 assessment beyond ecosystem-based adaptation, CSA began an intensive stakeholder engagement process in 2013. This began with nine workshops with local government – two at the District Municipality level and seven at the Local Municipality level – based

<sup>19</sup> Bourne A, Donatti C, Holness S, and Midgley G. 2012. Climate Change Vulnerability Assessment for the Namakwa District Municipality. Cape Town: Conservation South Africa.

on the Let's Respond Toolkit<sup>20</sup>. These sessions were focused on integrating climate change risks and opportunities into municipal planning through strategic integration of the topic into the Integrated Development Plans for each municipality.

Later in 2013 and in early 2014, in direct response to the requirements of SGF project development phase, CSA and SANBI began to engage directly with affected community groups, local NGOs and CBOs, relevant government departments and research and development institutions active in the Namakwa District. This stakeholder engagement has included two sessions: one in Cape Town at the Annual General Meeting of the Northern Cape Regional Network, a network of NGOs and CBOs working in the Northern Cape including the Namakwa District; and one in Springbok and attended by 61 representatives of 38 locally active institutions. The goal of these engagements was to develop an understanding of climate change impacts at the local level, and priority sectors for and examples of possible community-based adaptation responses. A stakeholder mapping exercise was also undertaken, to identify relevant organisations involved in climate change adaptation and related human development projects.

In addition to the two meetings held in late 2013 and early 2014, many more organisations, institutions, research / implementation partners and community groups were contacted over the telephone and via email. Their inputs are captured in this summary document.

#### Findings:

Stakeholder input confirmed that drought and extreme heat in the summer months are current climate-related challenges. These challenges, as indicated by the local level climate projections developed for this project, are likely to be exacerbated by climate variability and change. An increase in overall aridity in an area where surface and groundwater supplies are limited and increasingly over-utilised can contribute to unemployment, severe water scarcity and reduced agricultural productivity due to heat and water stress. In addition, climate change induced sea level rise and associated storm surges threaten coastal infrastructure, aquifers and sensitive ecological environments that deliver ecosystem services to sustain rural livelihoods.

At the 2013 meetings with local government stakeholders, some strategic priority areas for climate change responses emerged. The need for environmentally friendly approaches and awareness raising/capacity building on climate change were noted as over-arching concerns. The strategic priorities were seen to be the following sectors: i) water; ii) infrastructure; iii) disaster risk reduction; and iv) livelihoods. These priority sectors have been refined over the course of the subsequent stakeholder engagement sessions, culminating in those identified specifically for the purposes of the SGF project. Whilst the need for awareness raising and education was consistently noted, priority risks to be addressed through investments in climate change adaptation interventions through the SGF, as informed by local stakeholders, are seen to be:

- **Reduced viability of agricultural livelihoods (including fisheries):** Most (95%) land in the Namakwa District is actively utilised for agriculture, mostly small livestock farming (sheep and goats). A large percentage of the population is engaged in farming and directly dependent on related activities for their livelihoods. Agriculture is likely to be affected by drought, heat stress in plants and animals, and a reduction in water availability and water quality for livestock and crops. Increases in evaporation and evapotranspiration will decrease fodder production and grazing production for livestock, potentially resulting in reduced conception, birthing, and weaning rates, poor livestock condition, livestock mortality, and, ultimately, reduced viability of current farming practices. This could result in unemployment and reduced household income, ultimately reducing food security and the sustainability of current livelihood practices.
- **Damage to infrastructure/human settlements:** There are 52 rural human settlements in the Namakwa District. Typically human settlements are clustered around a water source, but are isolated. Human settlements are likely to be affected by heat stress in people (particularly the very young, elderly, and ill, as well as farm and mine labourers) and water stress both in terms of drinking water quality and availability. Additionally, human settlements, access roads, and

---

<sup>20</sup> (Department of Environmental Affairs, Department of Cooperative Governance, and the South African Local Government Association). 2012. *Let's Respond: A toolkit to integrating climate change risk and opportunities into municipal planning*. Pretoria, South Africa.

irrigation infrastructure are vulnerable to flash-flooding after periods of droughts. Coastal settlements and infrastructure (notably fishing and diamond dredging facilities) may be increasingly at risk from storm surge, while inundation of coastal aquifers threatens fresh water supplies.

- **Increased reliance on Disaster Risk Reduction services:** The low density of people and isolation of settlements in the Namakwa District places a strain on municipal disaster risk reduction services. However, an increase in frequency and intensity of climate extremes, particularly drought, will necessitate an increase in the provision of these services, focused on the agriculture sector and human settlements. Community-led disaster risk reduction interventions can safe-guard livelihoods and infrastructure, thus reducing the stress on municipal services and increasing resilience to the impacts of climate variability and change.
- **Degradation of Ecological Infrastructure:** Functioning ecosystems in the Namakwa District currently deliver valuable ecosystem services to rural, vulnerable communities, such as grazing areas for livestock and the provision of clean water for drinking and household use. However, this provision of ecosystem services is threatened by increasing aridity, coupled with over-utilisation of natural resources because of reduced food security and loss of household income. Investing in ecological infrastructure will facilitate community-based management, maintenance and potentially restoration of ecosystems functions and services that support climate resilient livelihoods.

A number of possible adaptation interventions per target area for the Namakwa District were identified by the stakeholders during consultations. These are listed below in Box 2. (As in the case of Mopani, it is noted, and was noted throughout the process, that these are indicative and that the projects that will be supported through the SGF will be determined through the SGF project application process).

***Box 2: Adaptation interventions suggested by stakeholders for the Namakwa District.***

**Reduced viability of agricultural livelihoods:**

- Introduction/increased use of heat-tolerant livestock.
- Construction of shade structures for livestock.
- Use of drought-resilient crops.
- Use of micro/drip-irrigation systems.
- Support to currently practiced, alternative livelihoods such as temperature controlled abalone farming.

**Damage to infrastructure/human settlements:**

- Rainwater harvesting at the household level.
- Grey water recycling systems.
- Insulation of houses to reduce impacts of extreme temperatures.
- Planting of drought-resilient trees around human settlements.
- Small-scale coastal protection infrastructure, such as gabions infrastructure.

**Increased reliance on Disaster Risk Reduction services:**

- Support to community-based fire management strategies.
- Small-scale early warning systems, particularly for drought.

**Degradation of Ecological Infrastructure:**

- Clearing of alien vegetation, particularly along waterways, to improve surface water flow for agricultural and household use.
- Wetland rehabilitation.
- Improved land/livestock management.

## 2.3 Investment Windows

The SGF project will invest in climate change adaptation interventions that fall into prioritised Investment Windows, as shown in Figure 2 and described below. The Investment Windows are informed by local level climate change projections and the Vulnerability Assessments that were undertaken in the two project target areas. All small grants projects will deliver concrete, tangible benefits to local communities, and may deliver cross-cutting benefits in more than one Investment Window.

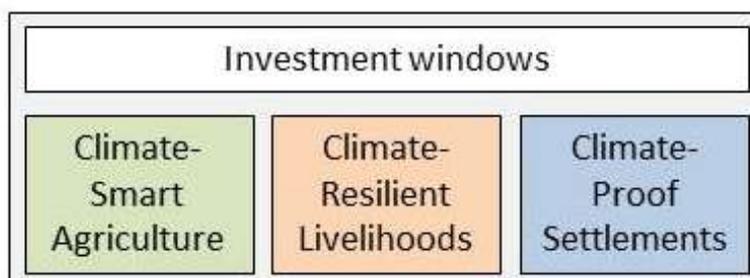


Figure 2: SGF project Investment Windows.

### Climate-Smart Agriculture<sup>21</sup>

Based on the climate change risks determined by the two Vulnerability Assessments, as outlined above, **climate-smart agriculture** has been identified as one of the three Investment Windows for the SGF project. Projects that fall within in the climate-smart agriculture Investment Window will address the direct or indirect impacts of climate change on agricultural production, and could target livestock and/or crop production. Climate-smart agriculture projects will focus on responses that feature shifts towards new resilient farming techniques, as well as technological improvements. This could include the use of drought-resilient crops in the face of projected drying, tree planting or the construction of shade structures and more drinking troughs for livestock in the face of increasing temperatures. The implementation of ‘no-regrets farming techniques’ (practices that address climate projections yet that have general benefits whatever the extent of future climate change) is preferential. This could for example be the introduction of mulching to retain soil moisture in the face of warming and drying, which at the same time works to improve the general fertility and health of the soil.

Development of climate-smart agriculture projects can entail the incorporation of cross-sectoral aspects such as ecological infrastructure, as healthy, functioning ecosystems that play an important role in preventing erosion, attenuating floods and ensuring that there is sufficient water and grazing. The issue of water-security can also be addressed in the agricultural projects, as ensuring sufficient yet sustainable water availability in the face of increasing temperatures and shifting rainfall patterns is key in order to create resilient farming systems. Climate-smart agriculture projects can also incorporate disaster risk reduction components, through precautionary measures and plans that reduce the impacts of projected shifts in both slow (i.e. drought) and rapid (i.e. thunderstorms) onset extreme events on agriculture.

As for all the small grants projects, climate-smart agriculture projects need to focus on ensuring tangible benefits for the most vulnerable communities.

### Climate-Resilient Livelihoods

Based on the climate change risks determined by the two Vulnerability Assessments, as outlined above, **climate-resilient livelihoods** has been identified as one of the three Investment Windows for the SGF project. In this context “livelihoods” is defined as the capabilities, assets and activities required to make a living<sup>22</sup>. Assets comprise a wide array of aspects that people require for their livelihoods, including: human assets (skills, knowledge, health, ability to work, etc.); natural assets

<sup>21</sup> Note that while the FAO definition of Climate-smart agriculture comprises sustainably increasing agricultural productivity and incomes, adaptation to climate change and climate change mitigation, small grants projects that fall within this Investment Window will focus on climate change adaptation. If small grants projects also speak to sustainability and mitigation these will be co-benefits, yet not prerequisites.

<sup>22</sup> Chambers, R. and Conway, G.R. (1992) ‘Sustainable Rural Livelihoods: Practical Concepts for the 21st Century’, Discussion Paper 296. Brighton, UK: Institute of Development Studies.

(land, water, wildlife, etc.); financial assets (financial resources that people use, i.e. savings, credit, pensions); physical assets (transport, energy, etc.); and social assets (networks, groups, access to institutions).

Climate-resilient livelihoods projects will work to increase the resilience of income generating activities and associated assets in the face of a changing climate. This could include aspects that affect people directly, such as heat stress experienced by traders without access to proper stalls, or aspects that affect an activity, for example, increasing water requirements for brick making as increasing temperatures leading to drying of the mud used for brick making.

The climate-resilient livelihoods Investment Window provides an opportunity to reflect on climate change impacts on locally specific livelihoods, and aims to foster innovative approaches for responding to these. Importantly, projects must be able to show how the interventions directly address aspects of an income generating activity or associated livelihoods asset that is set to be impacted by projected climate change.

As for all the small grants projects, climate-resilient livelihoods projects need to benefit a wider group of people. Therefore the number of businesses included in the scope of a project will depend on the number of people employed in each of the businesses.

### **Climate-Proof Settlements**

Based on the climate change risks that came out of the two Vulnerability Assessments, as outlined above, **climate-proof settlements** has been identified as one of the three Investment Windows for the SGF project. This Investment Window incorporates projects that address the climate change vulnerability of settlements, the people living in those settlements and the infrastructure on which they depend. This could include ensuring that infrastructure can deliver access to sufficient clean drinking water in the face of increased risk of storm surge and subsequent inundation of coastal aquifers. It could also including ensuring that community members are able to commute to school, to work or to the economic hub as normal if projections indicate an increase in the intensity of heavy rainfall events with which local infrastructure cannot cope.

Development of climate-proof settlements also addresses the need for disaster risk reduction, as climate change in some areas might mean an increase in the frequency and intensity of climate extremes. Disaster risk reduction projects, preferably community-led, that can safe-guard lives, livelihoods and infrastructure, will thus be included. Depending on the climate change projections for the area, such projects could prepare for extremes ranging from droughts to thunderstorms. Ecological infrastructure can in some cases play a role in buffering extremes, and as such be incorporated as part of climate-proof settlement projects. Such interventions need to be linked to projected climate change related impacts on settlements being reduced or prevented as a result of healthy and functioning ecosystems. This could include the restoration or rehabilitation of a wetland that can be shown to provide flood attenuation for a community at risk from flooding due to an increase in the intensity of heavy rainfall events.

### **Box 3: Aspects to note for project development.**

#### *Capacity development & awareness*

It should be noted that the SGF will not fund projects that are only focused on awareness and education, only planning, or only research without feeding into an implementation activity, as set out in the criteria in section 3 below.

#### *Locally appropriate and locally driven responses*

It should also be noted that it will be important for adaptation responses to be grounded in the local context. Responses should ideally be driven by the beneficiaries themselves, and in the least have the full support of the beneficiaries. It is therefore important to consider the full scope of the local context. For example, considering whether a drought resistant crop is likely to be accepted and used by the local community, or whether the improved housing structures that are developed are aligned with local cultural traditions.

#### *Avoiding maladaptation*

Maladaptation refers to when an adaptation action in the end becomes more harmful than helpful. In developing adaptation responses it is important to think of possible negative spin-off effects resulting from the actions, as well as whether the action is robust in the context of the uncertainties related to climate change projections.

## **3. SELECTION CRITERIA: SMALL GRANT RECIPIENTS AND ADAPTATION PROJECTS**

The SGF project will support projects that increase the resilience of vulnerable groups and long-term sustainable livelihoods, with an emphasis on projects that generate tangible adaptation responses in rural areas. Prospective grantees must be able to show that their projects respond to climate risks and in this regard, the integration of scientific and local knowledge is an area of particular interest. Reduced vulnerability of local communities to existing and anticipated impacts of climate change may be achieved through strengthened livelihood strategies, increased adaptive capacity, and building ecosystem resilience, amongst other approaches. Listed below are criteria for the selection of small grant recipients and for the assessment of the climate change adaptation projects they will submit for funding:

#### **Criteria for small grant recipients:**

- Grant recipients must be South African institutions with proven relevant implementation experience.
- Preference will be given to grant recipients that are legal entities and have the capacity to receive, manage and audit project funds.
- Preference will be given to projects led by civil society organisations and civil society organisations must be represented on project management structures.
- Organisations will need to show how women are included in their project management structures.
- Grant recipients must have a sound track record of good governance, delivery of grant commitments and financial management.
- Preference will be given to grant recipients with a clean audit record.
- Grant recipients must have previous positive experience receiving a combination of funds in the order of USD 25,000 (R 250,000) per year over a period of at least two years.
- Grant recipients are encouraged to develop implementation partnerships that augment or share their current capacity.
- Preference will be given to grant recipients that have established long-standing relationships with communities in the Namakwa or Mopani District Municipality.
- Grant recipients must have proof of land or asset ownership, and/or land tenure or permission to carry out proposed activity, as relevant.
- Grant recipients must have a clear mandate from project beneficiaries to work in the project target areas on the identified project activities.

- Grant recipients must demonstrate willingness to participate in learning and knowledge development and dissemination processes.
- Grant recipients must not be receiving funds from other sources for the proposed project activities.

**Note:** Organisations may wish to collaborate in order to meet organisational eligibility requirements. Organisations will be required to furnish documentation to verify recipient eligibility criteria during the application process.

**Criteria for project selection:**

- The SGF project is looking to fund small grant projects that address a clear climate change related threat and have a clear and demonstrable link to tangible, measurable, visible adaptation for people.
- Projects must clearly demonstrate that they respond to a particular climate change risk that is relevant for the project area, as identified in the project Investment Strategy.
- Projects must support adaptive interventions that clearly respond to current or anticipated local vulnerabilities that deliver concrete, tangible and measurable climate change adaptation benefits.
- Projects must support concrete actions and deliver tangible results that increase resilience to climate variability and change.
- Projects must align with the Community Adaptation SGF Investment Windows, as described above in Section 2.3.
- Projects must be located within the broader development context (provide economic, social, and/or environmental co-benefits) of the area.
- Projects must be supported by anticipated beneficiaries and local stakeholders.
- Where relevant, projects are required to demonstrate sustainable land tenure arrangements.
- Projects must support vulnerable local communities and especially women.
- Projects will beneficiate groups rather than single individuals – i.e. at least 50 direct beneficiaries per project
- Projects must include learning outcomes and inform ways to scale up and replicate approaches in other communities.
- Projects must clearly demonstrate how success will be measured and must have clear indicators.
- Projects must be replicable and/or scalable and sustainable after the SGF funding ends.
- Projects must be cost-effective.
- Projects must be located in rural/ semi-rural areas.
- Projects must be implemented in the Namakwa District Municipality, or Greater Giyani or Greater Letaba in the Mopani District Municipality.

**Note:** The SGF will not fund:

- Projects that do not align with all of the above criteria.
- Projects that do not result in tangible, measurable adaptation benefits for people – this includes any project that is only awareness and education, only planning, or only research without feeding into an implemented activity.
- Projects that do not show additionality (see Box 4).

#### **Box 4: Additionality: Why development projects are not always adaptation projects.**

There is a global recognition that poverty alleviation and development issues of education, health, access to water, gender equity, and economic diversification are challenges for all. Governments, including South Africa, have signed commitments to international agreements to address these poverty and development issues and have set national targets to deliver tangible change in the lives of people. South Africa in particular has a robust political commitment and financial resources dedicated to provide its citizens with access to water, proper sanitation, good infrastructure, and health and education services. In the context of international agreements, and funding sources for this project, these targets are the responsibility of the national government and they will not fund projects that would be seen to be simply filling a delay or failure in delivery of a basic service.

As such, projects submitted for consideration by the SGF **MUST** demonstrate that they are directly responding to a new risk that has emerged as a result of a globally changing climate - this is known globally as "**additionality**". Additionality is showing that the activity is a new input to "business as usual". In the case of agriculture for example, there are the business as usual outcomes associated with agricultural development – e.g. production increases, improved agricultural markets, enhanced food security, empowered farmer organisations, etc. There are policies and industry bodies seeking to do these activities. Then, there are areas where agricultural productivity or food security is anticipated to be directly impacted by climate change and where inputs are required to address this. For example, a drip irrigation scheme to conserve water put in an area where climate vulnerability models are showing a low risk of change in rainfall or even an increase in rainfall and water availability, then this is not "additional". However, if a drip irrigation technique is being put in place because climate change is going to impact water security and the area is already water scarce, then this drip irrigation system is additional and could be potentially funded by the SGF.

*Additionality is a key word applied to climate change adaptation interventions and the indicators for your projects will need to show how this climate finance has improved adaptive capacity.*

## **4. ROLES AND RESPONSIBILITIES**

### **National Implementing Entity**

SANBI will be the **National Implementing Entity (NIE)** for this project. SANBI will support project implementation by assisting in monitoring project budgets and expenditures and supporting the recruitment and contracting of project personnel and consultant services, including subcontracting. SANBI will also monitor project implementation and the achievement of the project outcomes/outputs and ensure the efficient use of donor funds.

### **Executing Entity**

The project will be administered through SSN, the project's **Executing Entity (EE)**. SSN was identified following a thorough review of potentially suitable existing entities in South Africa and a subsequent process that called for expressions of interest.

SSN will be responsible for receiving and disbursing funds, for contracting the project's FAs, for contracting arrangements with all small grant recipients and for leading the Learning Component of the project, with support from the FAs and other service providers. They will also be responsible for overall project monitoring, evaluation and reporting and will work directly with the NIE to ensure that AF reporting requirements are met.

SSN (the **Executing Entity**) will appoint and designate a **project manager** for the duration of the project. The project manager's primary responsibility will be to ensure that the project produces the results specified in the project document to the required standard of quality and within the specified constraints of time and cost.

### **Facilitating Agencies**

The project's **Facilitating Agencies** (FAs) will provide site based support in each of the project target areas. They will appoint Project Coordination Staff including a **local coordinator** in each region. These local coordinators will support small grant recipients to execute the project activities, including project identification, design and implementation, day-to-day operations of the project, and operational and financial management and reporting.

CSA will act as FA for Namakwa. They have a long history working in this area, and have an excellent track record in community engagement and grant making, including project identification, development, training and management support. The FA for Mopani will be identified through a transparent procurement process that will commence once it is certain that the project will proceed.

### **Service providers**

Service providers will be contracted to provide specialist support as required over the duration of the project. These services will include technical input to proposal development and review, specialist training, writing of case studies and independent project evaluations.

## **5. OVERSIGHT, GOVERNANCE AND COORDINATION**

The proposed governance and implementation arrangements for the project are illustrated in Figure 3 and the envisaged roles and responsibilities that will be assigned to each of these structures is described below.

### **Project Management Team**

The day to day management of the project will be supported by a **Project Management Team** that will comprise the EE (SSN) and the two FAs. As and when required, the Project Management Team may co-opt others such as the NIE or other members of the NIE Steering Committee to join the Project Management Team. Project Management Team meetings will be coordinated by the SSN SGF Project Manager, and will happen at least monthly.

### **Project Steering Committee**

A **Project Steering Committee** will be set up to provide project oversight and to consider recommendations regarding the approval of the small grants that are the subject of this project.

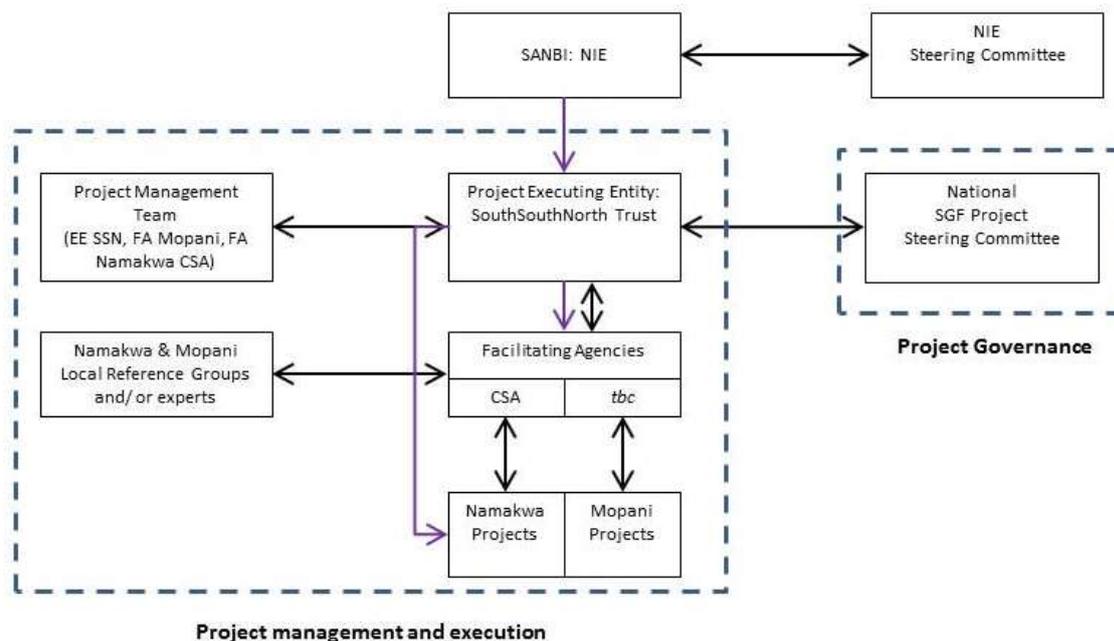
The Project Steering Committee will comprise two members of the NIE Steering Committee, one of which will be the Department of Environment Affairs, the NIE and technical climate change adaptation experts who are drawn from National Academic Institutions and target area sector departments. The EE will act as Secretariat for this committee, and both the EE and the FAs will take guidance from the Project Steering Committee processes. The Project Steering Committee will meet quarterly.

### **Local Reference Groups**

**Local reference groups** will be set up at project inception. They will support the FAs to ensure that projects are locally contextualised, consider local and indigenous knowledge, integrated and coordinated into ongoing local programmes of work, technically robust and sustainable. In some cases they may also be able to attest to the credibility of the prospective small grant recipients.

It is envisaged that members of these groups will include amongst others the District Municipality, relevant provincial and national sector departments, and experts from tertiary institutions. Prospective small grant recipients will not be able to be members of these groups.

These local reference groups will play an important role in concept screening during the first stage of the project development process, in detailed application development and in project implementation, learning, monitoring and reporting processes.



**Figure 3:** Institutional Arrangements for the SGF project. The black arrows indicate the relationships between the different project partners and committees. The purple arrows indicate the flow of funds. Abbreviations: Executing Entity (EE); SouthSouthNorth (SSN); Facilitating Agency (FA); and Conservation South Africa (CSA).

## 6. PROJECT IDENTIFICATION, APPROVAL AND CONTRACTING PROCESSES

The process to support prospective small grant recipients to identify project concepts, and to develop these ideas into applications that could be approved and ultimately contracted by the SGF, are set out in Figure 4.

Five stages are envisaged and these are described below. It is acknowledged that there is a great need to develop local capacity in order to empower local stakeholders who are anticipated grant recipients to apply for project support. In support of this, capacity building and learning opportunities will be created throughout the lifetime of the project. These will be based on the outcomes of training of grants recipients and capacity building needs analysis that will be conducted by the FAs, with support of the EE, on an ongoing basis.



**Figure 4:** The five "Taking Adaptation to the Ground" project stages.

### Stage 1: From an idea to a concept proposal

In this first stage, prospective small grant recipients will be required to submit short project concepts to the FAs.

In support of this stage, the FAs will issue a call for concept proposals. This call will use appropriate local communication channels such as local radio stations and community newspapers. The call will be supported by briefing sessions that will be convened in each of the project target areas. These

sessions will provide an opportunity for potential small grant recipients to meet the FAs, learn more about the granting opportunity and to obtain some initial input around their project ideas.

Project concepts will be screened by the FAs with the support of Local Reference Groups, against a basic set of criteria that will be made known to applicants before they apply. These criteria are set out in Section 3 of this proposal. The recommendations of this screening process will be submitted to the EE, who will table them at a Project Steering Committee meeting for a final decision. Projects that meet the specified criteria and are approved by the Project Steering Committee will be entered into Stage Two.

Project development assistance will be offered to project proponents whose concepts are believed to have merit, but do not quite meet the SGF criteria. Such proponents will be afforded another opportunity to submit their revised concepts, possibly at the time of the next call for concept proposals.

The call for proposals will be issued on a six-monthly basis until such time as all project funds are allocated and all small grant recipients contracted. It is envisaged that two to three calls will be needed.

**Detailed steps for Stage 1:**

- Issue call for proposals (EE, FAs)
- Convene briefing sessions (FA)
- Submit project concepts (Prospective small grant recipients)
- Review and Screen Concepts (FAs, Local Reference Groups)
- Make recommendations regarding next steps (FAs)
- Table recommendations at Project Steering Committee meeting (EE)
- Notify FAs of outcomes (EE)
- Notify prospective small grant recipients of outcomes (FAs) (concept approved; concept requires additional work; concept not approved)

**Stage 2: From an approved concept to a detailed proposal**

For all approved concepts, the FAs will support prospective small grant recipients to further develop and refine the project concepts into application that meet the criteria and requirements of the SGF. As part of this process, the FAs will invite input from local experts who will work alongside prospective small grant recipients to refine their proposals. This will include the incorporation of relevant material such as the Vulnerability Assessments for each area and a review of the environmental and social safeguards to make sure that they align with Adaptation Fund checklist.

Prospective small grant recipients will submit fully developed applications to the EE via the FAs with a letter of endorsement from the FAs. The EE will note the submission of the documentation, review it for completeness, and acknowledge receipt.

Applications will then be reviewed by three external reviewers, one of which will be the EE. The other two will be selected on the basis of their technical expertise in the project content area. Reviewers will evaluate applications against the agreed project and institutional criteria. The EE will then compile the reviewers' comments into an integrated review, and make recommendations to the Project Steering Committee as to whether to approve, not to approve or call for additional work on the application. All reviews – possibly with the reviewer names removed – will be made available to proponents.

The Project Steering Committee will then decide whether to approve the application, reject the application, or refer it back to the prospective small grant recipients for further modifications. The record of the Project Steering Committee meeting will capture the Project Steering Committee's recommendations and the reasoning behind the decision. In the cases of conditional approval, the meeting record would detail the conditions that need to be met for approval.

The EE will notify prospective small grant recipients and the FAs of the recommendations of the Project Steering Committee. Applications that are approved will enter the contracting stage. Projects

that are referred back to proponents for further modification will have an opportunity to resubmit during the next call for proposals.

**Detailed steps for Stage 2:**

- Convene application development sessions with prospective small grant recipients (FAs, experts)
- Work with prospective small grant recipients to improve application (FAs, experts)
- Complete applications (Prospective small grant recipients)
- Submit completed applications to FAs to check for completeness (Prospective small grant recipients)
- Submit to the EE with endorsement (FAs)
- Acknowledge receipt (EE)
- Review completed proposals – technical and due diligence (Experts, EE)
- Table recommendations at Project Steering Committee meeting (EE)
- Notify FAs of outcomes (EE)
- Notify prospective Small grant recipients of outcomes (FAs) (application approved; application requires additional work; application not approved)

**Stage 3: Contracting**

Once approved by the Project Steering Committee, the EE will prepare and enter into contracts with small grant recipients.

The legal agreements between the EE and the prospective small grant recipients will be negotiated and finalized based on the nature of the activity and of the anticipated funding flows. This process will include internal processing as well as compliance and due diligence screening. The agreements will contain all relevant details regarding the terms and conditions of the Fund's financing and may include terms and conditions applicable to the relationship between the EE, FAs and small grant recipients.

Contracts will specify the annual project work plan and associated budgets, deliverables and disbursement schedules. They will also specify monitoring, evaluation and reporting requirements. Baselines will need to be established within the first 3 months of project inception. When required, the FAs will assist with this process.

This stage will conclude with the signing of legal agreements between the EE and the new small grant recipient and the payment of the first instalment into the small grant recipient's bank account.

**Detailed steps for Stage 3:**

- Preparation of draft terms and conditions (EE)
- Negotiation and finalization of draft legal documents (EE, FAs, small grant recipient)
- Signature of legal documents
- Award grant

**Stage 4: Implementation, monitoring and reporting**

Small grant recipients will be expected to implement their projects according to the schedules and deliverables that are set out in their contracts. All small grant recipients will be expected to participate in and contribute to the project's knowledge management and capacity building processes.

The FAs will support small grant recipients in this process by visiting each project at least once each quarter, and supporting reporting and monitoring processes. The FAs will be responsible for advising the EE on small grant recipient project progress and making recommendations to the EE for the disbursement of funds. The EE will undertake the necessary internal procedures to validate and complete the contracted payments. Any requests to deviate from the disbursement schedule agreed in small grant recipient contracts will need to be approved by the SGF Project Steering Committee and provided in writing.

In addition to the quarterly site visits, small grant recipients will be engaged in the SGF Project mid-term and terminal evaluations conducted by external reviewers. The FAs will support processes for small grant recipients to be meaningfully engaged by the external monitoring and evaluation consultants during these evaluations.

Throughout the SGF project, opportunities will be created from small grant recipients to meet and share lessons and experiences with each other, and with other local and national stakeholders. Should the opportunity arise, small grant recipients may also be requested to share their experience with the international community. In support of this, annual small grant recipients meetings will be organised in each focal area. At least two of these will bring small grant recipients from the two areas together.

**Detailed steps for Stage 4:**

- Project becomes effective
- Transfer of first installment to small grant recipient according to contract disbursement schedule (EE)
- Quarterly reporting (Small grant recipient)
- Quarterly site visits to each project by FAs (FAs)
- Annual visits to project areas by EE (EE)
- Ongoing participation in knowledge and learning activities (Small grant recipient)
- Mid-term review – led by external independent consultants, includes local ref groups and Project Steering Committee (EE, FAs, small grant recipients)
- Terminal review – led by external independent consultants, includes local ref groups and Project Steering Committee (EE, FAs, small grant recipients)

**Stage 5: Closure**

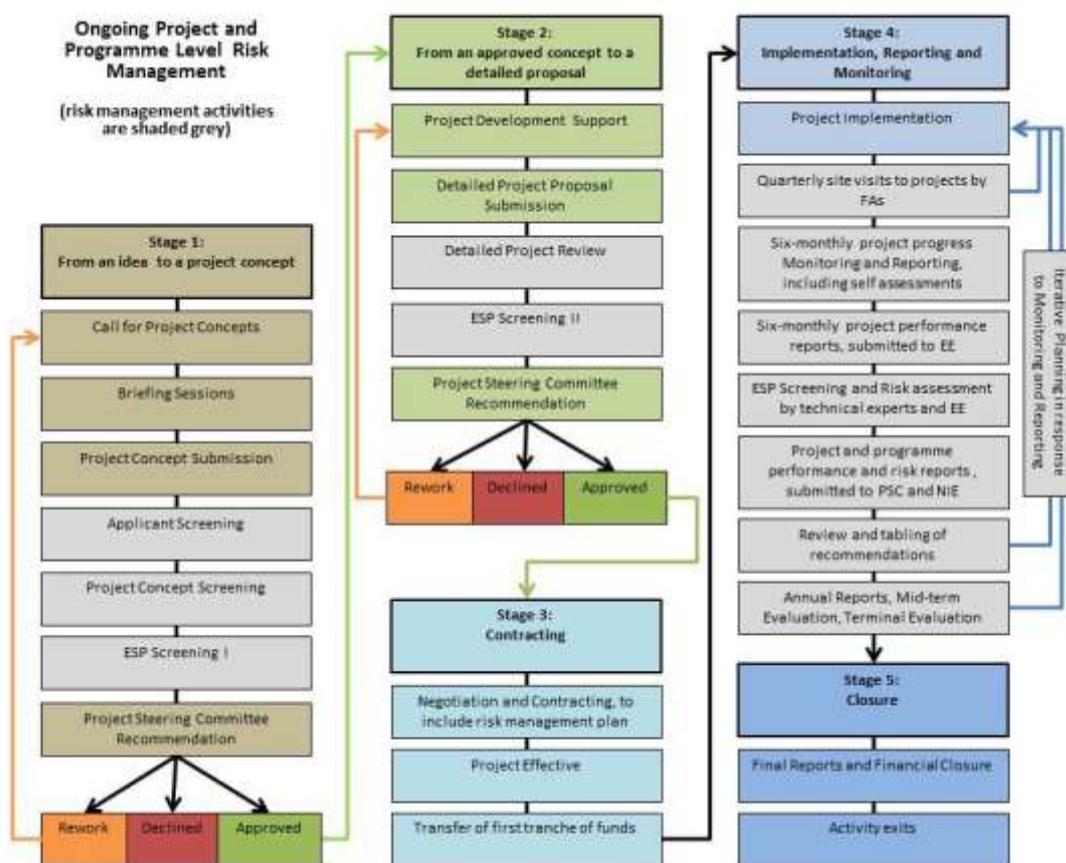
At project closure, all small grant recipients will be expected to submit final financial and performance reports which will need to include a project sustainability plan.

# Annex VI: Community Adaptation Small Grants Facility Project Review, Oversight and Environmental and Social Risk Management Plan

## 1. The Small Grant Making Process

The process to support prospective Small Grant Recipients to identify project concepts, and to develop these ideas into applications that could be approved and ultimately contracted by the Community Adaptation SGF, has five stages (see Figure 1). These are summarized in Table 1 and described below. The roles and responsibilities that have been assigned to the various project partners throughout the small grant making process are set out in the Institutional Arrangements section below. Draft project concept and detailed project proposal application forms have been developed by the EE, and will be finalized in a consultative process leading up to the Inception Workshop.

It is acknowledged that there is a great need to develop local capacity in order to empower local community members and stakeholders who are anticipated Small Grant Recipients to apply for Community Adaptation SGF assistance. In support of this, capacity building and learning opportunities will be created throughout the lifetime of the project. These will be informed by the outcomes of capacity building needs analyses that will be conducted by the Facilitating Agencies, with the support of the EE, on an on-going basis.



**Figure 1:** The five Community Adaptation SGF project stages, illustrating where small grant projects and overall programmatic activities will be screened and monitored for potential environmental and social risks in accordance with the Adaptation Fund Environmental and Social Policy (ESP).

**Table 1:** Indicative Steps Associated with the five stages of the Community Adaptation SGF Small Grant Making Process. The responsible agent(s) is indicated in brackets after each indicative step.

Stage	Indicative Steps
<b>Stage 1: From an idea to a project concept</b>	<ul style="list-style-type: none"> <li>• Issue call for project concepts (EE, Facilitating Agencies)</li> <li>• Convene briefing sessions (Facilitating Agencies)</li> <li>• Submit project concepts (prospective Small Grant Recipients)</li> <li>• Review and screen project concepts against three sets of criteria (Facilitating Agencies, Local Reference Groups)</li> <li>• Submit to the EE (Facilitating Agencies)</li> <li>• Make recommendations regarding next stages (Facilitating Agencies)</li> <li>• Table recommendations at Project Steering Committee (PSC) meeting (EE)</li> <li>• Notify Facilitating Agencies of outcomes (EE)</li> <li>• Notify prospective Small Grant Recipients of outcomes (Facilitating Agencies) (project concept approved; project concept requires additional work; project concept not approved)</li> </ul>
<b>Stage 2: From an approved project concept to a detailed project proposal</b>	<ul style="list-style-type: none"> <li>• Convene detailed project proposal development sessions with prospective Small Grant Recipients (Facilitating Agencies, Experts)</li> <li>• Work with prospective Small Grant Recipients to improve detailed project proposal (Facilitating Agencies, Experts)</li> <li>• Complete detailed project proposal (prospective Small Grant Recipients)</li> <li>• Submit completed detailed project proposals to Facilitating Agencies to check for completeness (prospective Small Grant Recipients)</li> <li>• Submit to the EE with endorsement letters (Facilitating Agencies on behalf of Local Reference Groups)</li> <li>• Acknowledge receipt (EE)</li> <li>• Review completed detailed project proposals – technical and due diligence (Experts, EE)</li> <li>• Screen detailed project proposal against AF ESP (Facilitating Agency, EE, NIE)</li> <li>• Table recommendations at PSC meeting (EE)</li> <li>• Notify Facilitating Agencies of outcomes (EE)</li> <li>• Notify prospective Small Grant Recipients of outcomes (Facilitating Agencies) (detailed project proposal approved; detailed project proposal requires additional work; detailed project proposal not approved)</li> </ul>
<b>Stage 3: Contracting</b>	<ul style="list-style-type: none"> <li>• Preparation of draft terms and conditions (EE)</li> <li>• Development of a risk management plan (Facilitating Agencies, Small Grant Recipients)</li> <li>• Negotiation and finalization of draft legal documents (EE, Facilitating Agencies, Small Grant Recipients)</li> <li>• Signature of legal documents</li> <li>• Award small grant</li> </ul>
<b>Stage 4: Implementation, Monitoring and Reporting</b>	<ul style="list-style-type: none"> <li>• Small grant project becomes effective</li> <li>• Transfer of first installment to Small Grant Recipient according to contract disbursement schedule (EE)</li> <li>• Quarterly site visits to each project (Facilitating Agencies)</li> <li>• Six-monthly project progress monitoring and reporting, including self-assessment, submitted to Facilitating Agencies (Small Grant Recipient, with support from Facilitating Agencies)</li> <li>• Six-monthly project performance reports submitted to EE (Facilitating Agencies)</li> <li>• ESP screening and risk assessment: Identification of environmental and/ or social risks and development of proposed recommendations for how these are to be addressed in the project risk management plan (Environmental and Social Safeguard Expert, EE)</li> <li>• Six-monthly project and programme performance risk reports submitted to PSC and NIE for review (EE)</li> <li>• Review and tabling of recommendations for implementation, in response to monitoring reporting outcomes (EE, PSC, NIE)</li> <li>• Iterative planning and activity design based on monitoring, reporting and risk assessment (Facilitating Agencies and Small Grant Recipients)</li> <li>• Annual visits to small grant project areas by EE (EE)</li> <li>• Periodic training and capacity building (Facilitating Agencies, consultants)</li> <li>• Ongoing participation in knowledge and learning activities (Small Grant Recipient)</li> <li>• Participation in Mid-term review – led by external independent consultants, includes Local Reference Groups and PSC (EE, Facilitating Agencies, Small Grant Recipients)</li> <li>• Participation in Terminal review – led by external independent consultants, includes Local Reference Groups and PSC (EE, Facilitating Agencies, Small Grant Recipients)</li> </ul>

<b>Stage 5: Closure</b>	<ul style="list-style-type: none"> <li>• Submit final financial and performance reports</li> <li>• Submit small grant project sustainability plan</li> <li>• Participation in close out event</li> </ul>
-------------------------	--

**Stage 1: From an idea to a project concept**

In this first stage, prospective Small Grant Recipients will be required to submit short project concepts outlining their proposed adaptation activities to the Facilitating Agencies.

Central to the approach will be processes to empower communities to identify best practice adaptation responses themselves, and in so doing to locate these in local socio-economic and institutional contexts that will see that these are integrated in on-going livelihood and development practices. Related to this will be the intention to identify responses that are synergistic and multi-sectoral so that, for example, agriculture and ecological infrastructure benefits, or built environment and health benefits, are derived simultaneously.

In support of this stage, the Facilitating Agencies will issue a call for project concepts. This call will use appropriate local communication channels such as local radio stations and community newspapers. The call will be supported by briefing sessions that will be convened in each of the project target areas. These sessions will provide an opportunity for potential Small Grant Recipients, including members of local communities, to meet the Facilitating Agencies, be exposed to the VAs and response strategies for their regions, learn more about the small granting opportunity and to obtain some initial support to develop appropriate local level responses within these frameworks and input around their project ideas. These sessions will form a unique opportunity to integrate scientific and local knowledge, and to develop a base of proposed responses from which small grant projects can be identified and developed.

The capacity building and project development process has been designed to support local level adaptation responses that are identified by local community members themselves. Small Grant Recipients will be local institutions who are from or who represent these local communities and several screening criteria have been specifically designed to ensure local level empowerment and beneficitation.

Project concepts will be screened by the Facilitating Agencies, with the support of Local Reference Groups, against the three sets of review criteria, as follows:

- Screening of the Small Grant Recipients against a set of predetermined criteria;
- Screening of the small grant projects, to ensure they align with the objectives of the Community Adaptation SGF; and,
- Screening of the small grant projects against the criteria of the AF ESP to ensure that there are no significant project risks or that any minor risks that can be mitigated.

These criteria will be made known to applicants before they apply. This will empower stakeholders and give the process the transparency and local grounding that will be important for project success and sustainability.

During the Community Adaptation SGF inception phase, the NIE will engage directly with the EE and Facilitating Agencies on operating procedures that will apply to the management of the SGF, and that will be necessary to ensure compliance with SANBI and AF policies and procedures. Particular focus will be placed on the AF ESP, and a dedicated capacity building session will help to ensure that both the EE and Facilitating Agencies are able to competently screen small grant project ideas, concepts and proposals for environmental and social risks, and to detect these in future project monitoring, evaluation and reporting processes.

The recommendations of this screening process will be submitted to the EE, who will table them at a PSC meeting for a final decision. Project concepts that meet the specified criteria and are approved by the PSC will be entered into Stage 2. This conditional approval will allow the small grant projects to enter Stage 2, and to qualify for capacity building and project development support. This conditional approval will not entail the disbursement of funds to Small Grant Recipients. Where such a need arises, and as determined by the Facilitating Agencies and EE, direct travel costs associated with potential Small Grant Recipients attending capacity building events may be covered.

Project development assistance will be offered to potential Small Grant Recipients whose project concepts are believed to have merit, but do not quite meet the Community Adaptation SGF criteria. Such potential Small Grant Recipients will be afforded another opportunity to submit their revised project concepts, possibly at the time of the next call for project concepts.

The call for proposals will be issued on a six-monthly basis until such time as all project funds are allocated and all Small Grant Recipients contracted. It is envisaged that two to three calls will be needed.

### **Stage 2: From an approved project concept to a detailed project proposal**

For all approved project concepts, the Facilitating Agencies will support prospective Small Grant Recipients to further develop and refine the project concepts into detailed project proposals that meet the criteria and requirements of the Community Adaptation SGF. As part of this process, the Facilitating Agencies will invite input from local experts who will work alongside prospective Small Grant Recipients to refine their detailed project proposals. This will include the incorporation of relevant material such as the VAs for each area and a review of the environmental and social safeguards to make sure that detailed project proposals meet the requirements for a project with no significant risks in terms of the AF ESP, or a project with minor risks that can be mitigated. Specialist safeguard expertise has been provided for in the budget and will be available if necessary.

Prospective Small Grant Recipients will submit detailed project proposals to the EE via the Facilitating Agencies with a letter of endorsement from the Local Reference Groups. The EE will note the submission of the documentation, review it for completeness, and acknowledge receipt.

Detailed project proposals will then be reviewed by three reviewers, one of which will be the EE. The other two will be selected on the basis of their technical expertise in the project content area. Reviewers will evaluate detailed project proposals against the agreed project and institutional criteria.

The Facilitation Agency will also undertake a comprehensive screening of the detailed project proposals against the AF ESP for a second time, to ensure that no additional issues that could pose risks have emerged during the detailed design process. If any such minor risks have emerged, the potential Small Grant Recipients will need to include a mitigation plan in the detailed project proposals. The EE will review this assessment, and the NIE will provide oversight over this aspect of the process to ensure overall compliance with the AF ESP.

The EE will then compile the reviewers' comments into an integrated review, and make recommendations to the PSC as to whether to approve, not to approve or call for additional work on the detailed project proposal. All reviews – possibly with the reviewer names removed – will be made available to proponents<sup>23</sup>.

The PSC will then decide whether to approve the detailed project proposal, reject it, or refer it back to the prospective Small Grant Recipients for further modifications. The record of the PSC meeting will capture the PSC's recommendations and the reasoning behind the decision. In the cases of conditional approval, the meeting record would detail the conditions that need to be met for approval.

The EE will notify prospective Small Grant Recipients and the Facilitating Agencies of the recommendations of the PSC. Applications that are approved will enter the contracting stage. Projects that are referred back to proponents for further modification will have an opportunity to resubmit during the next call for proposals.

### **Stage 3: Contracting**

Once approved by the PSC, the EE will prepare and enter into contracts with Small Grant Recipients.

The legal agreements between the EE and the Small Grant Recipients will be negotiated and finalized based on the nature of the activity and of the anticipated funding flows. This process will include internal processing as well as compliance and due diligence screening. The agreements will contain all relevant details regarding the terms and conditions of the Community Adaptation SGF financing

---

<sup>23</sup> This review process is based on a previous review process that was successfully implemented for the Critical Ecosystem Partnership Fund's investment in the Cape Floristic Region and Succulent Karoo hotspots between 2004 and 2009.

and may include terms and conditions applicable to the relationship between the EE, Facilitating Agencies and the Small Grant Recipient.

Contracts will specify the annual project work plan and associated budgets, deliverables and disbursement schedules. They will also specify monitoring, evaluation and reporting requirements. Baselines will need to be established within the first three months of small grant project inception. When required, the Facilitating Agencies will assist with this process.

This stage will conclude with the signing of legal agreements between the EE and the Small Grant Recipient and the payment of the first installment into the Small Grant Recipient's bank account.

#### **Stage 4: Implementation, monitoring and reporting**

Small Grant Recipients will be expected to implement their small grant projects according to the schedules and deliverables that are set out in their contracts. The Facilitating Agencies will support Small Grant Recipients in this process by visiting each project at least once each quarter, and supporting reporting and monitoring processes. The Facilitating Agencies will be responsible for advising the EE on Small Grant Recipient project progress, making recommendations to the EE for the disbursement of funds and in the event of any requests for deviations from the agreed project plan.

Particular attention will be given to the monitoring and mitigation of any minor risks identified through Stages 1-3, and of any unanticipated environmental and social risks that may arise during implementation through the:

- Facilitating Agency quarterly site visits to all project sites, in which the capacity of Small Grant Recipients will be developed to allow the detection and mitigation of environmental and social risks;
- Six-monthly project progress reports submitted by Small Grant Recipients to the Facilitating Agencies, including self-assessments;
- Six-monthly project performance reports submitted by the Facilitating Agencies to the EE, that summarise project progress and risk management related activities;
- Six-monthly ESP screening and risk assessment by an Environmental and Social Safeguard Expert (budgeted for in Component 1), based on the reports received from the Facilitating Agencies and the annual site visits of the EE. Through this process, environmental and/ or social risks will be identified and a set of recommendations for how these should be addressed in the project's risk management plan will be developed;
- Six-monthly project and programme performance and risk reports submitted by the EE to the PSC and NIE, in which the risks and recommendations that arise from the ESP screening and risk assessment process are presented;
- PSC and NIE feedback to the EE in response to monitoring reporting outcomes, including recommendations for corrective action (EE, PSC, NIE). The Facilitating Agencies will be responsible for working with Small Grant Recipients to ensure that these recommendations are integrated into the relevant project risk management plan, and into future implementation activities; and,
- Monitoring of the iterative management actions that arise from the recommendations of the PSC and NIE (EE, PSC, NIE).

Where risks are detected, the PSC 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. In this regard it is noted that every effort will be made to support Small Grant Recipients to positively respond to and manage unanticipated risks.

The EE will undertake the necessary internal procedures to validate and complete the contracted payments. Any requests to deviate from the disbursement schedule agreed in Small Grant Recipient contracts will need to be approved by the PSC and provided in writing.

In addition to the quarterly site visits and learning opportunities, Small Grant Recipients will be engaged in the Community Adaptation SGF Mid-term and Terminal evaluations conducted by external reviewers. The Facilitating Agencies will support processes for Small Grant Recipients to be meaningfully engaged by the external M&E consultants during these evaluations.

Throughout the Community Adaptation SGF, opportunities will be created for Small Grant Recipients to meet and share lessons and experiences with each other, and with other local and national stakeholders. Should the opportunity arise, Small Grant Recipients may also be requested to share their experience with the international community. In support of this, annual Small Grant Recipients meetings will be organised in each project target area. At least two of these will bring Small Grant Recipients from the two project target areas together. Stakeholders from neighbouring and other districts and municipalities will be invited to these fora, with a view to extending the project benefits beyond the project target sites, to stimulate the scaling up of the Community Adaptation SGF.

#### **Stage 5: Closure**

At project closure, all Small Grant Recipients will be expected to submit final financial and performance reports which will need to include a project sustainability plan.

As part of the Terminal review, a close out event will also be convened for the project team and Small Grant Recipients to reflect on the outcomes of the Community Adaptation SGF.

## **2. Project Screening and Review**

The project development and review mechanisms of the Community Adaptation SGF will be guided by criteria that ensure that small grant projects clearly respond to experienced or anticipated climate induced stresses, and meet the objectives of the Community Adaptation SGF, the NIE and the Adaptation Fund (AF). As part of this, the screening processes will also ensure that all small grant projects meet the requirements for a project with no significant risks in terms of the AF ESP, or a project with minor risks that can be mitigated.

This Community Adaptation SGF has been designed to pilot an enhanced direct access mechanism, and in order to be able to retain a focus on this, it has been agreed that small grant projects with significant AF ESP risks, or risks that cannot be mitigated, will be excluded. This position is further informed by the relatively small size of the grants, which would make detailed specialist investigations into the identification and mitigation of significant risks unaffordable.

It should be noted that the Community Adaptation SGF will not fund:

- Small grant projects that do not align with all of the prescribed criteria;
- Small grant projects that do not result in tangible, measurable adaptation benefits for vulnerable communities – this includes any project that is only awareness- and/or education-based, only relevant to planning or research, without feeding into an implemented activity;
- Small grant projects that require a Basic Assessment or full Environmental Impact Assessment (EIA) as per the national EIA regulations (see Section II.E), due to administrative costs and potential delays;
- Small grant projects that do not show additionality; and,
- Small grant projects that pose significant or unmitigatable risks in terms of the AF ESP.

Institutions (Small Grant Recipients) and small grant projects will be carefully screened against a set of criteria that were developed as part of the process to conceptualise the Community Adaptation SGF.

The Screening Process will have three steps, as follows:

- Screening of the Small Grant Recipients against a set of predetermined criteria;
- Screening of the small grant projects, to ensure they align with the objectives of the Community Adaptation SGF; and
- Screening of the small grant projects against the criteria of the AF ESP to ensure that they are no significant project risks, or that any minor risks that can be mitigated.

Small Grant Project proposals that do not meet the requirement for a project with no significant risks in terms of the AF ESP, or a project with minor risks that can be mitigated, will be excluded.

These criteria were designed to ensure consistency with the aspirations of project target communities, alignment with the NIE Investment Framework and compliance with the standards and criteria of the

AF, including the Environmental and Social Policy. They were designed in consultation with project stakeholders as part of the Community Adaptation SGF detailed design phase.

A participatory and inclusive approach is essential to sustainability. It creates a sense of ownership and buy-in, involves all sectors of the community, enables integration with on-going activities, provides access to local knowledge and ideas, facilitates consensus and increases the credibility of the project. Although participatory processes are not uncommon in South Africa, there is sometimes a tendency for project management to become expert-driven and top-down in its approach. The Community Adaptation SGF will actively promote a participatory, gender-sensitive approach. To foster the participation of women in project activities, gender concerns have been factored into project criteria, indicators and targets. These will ensure that there is equitable representation of women as project beneficiaries, in training and capacity-building programmes, and in project decision-making structures at all levels.

## 2.1 Criteria for Small Grant Recipients

- Small Grant Recipients must be South African institutions with proven relevant implementation experience.
- Preference will be given to Small Grant Recipients that are legal entities and have the capacity to receive, manage and audit project funds.
- Preference will be given to small grant projects led by civil society organisations, and civil society organisations must be represented on management structures of all small grant projects.
- Organisations will need to show how women are included in their project management structures.
- Small Grant Recipients must have a sound track record of good governance, delivery of grant commitments and financial management.
- Preference will be given to grant recipients with a clean audit record.
- Small Grant Recipients must have previous positive experience receiving a combination of funds in the order of USD 25,000 (R 250,000) per year over a period of at least two years.
- Small Grant Recipients are encouraged to develop implementation partnerships that augment or share their current capacity.
- Preference will be given to Small Grant Recipients that have established long-standing relationships with communities in the Namakwa or Mopani District Municipality.
- Small Grant Recipients must have proof of land or asset ownership, and/or land tenure or permission to carry out proposed activity, as relevant.
- Small Grant Recipients must have a clear mandate from project community beneficiaries to work in the project target areas on the identified project activities.
- Small Grant Recipients must demonstrate willingness to participate in learning and knowledge development and dissemination processes.
- Small Grant Recipients must not be receiving funds from other sources for the proposed small grant project activities.
- Small Grant Recipients may only receive one small grant from the Community Adaptation SGF.

**Note:** Organisations may wish to collaborate in order to meet organisational eligibility requirements. Organisations will be required to furnish documentation to verify recipient eligibility criteria during the application process.

## 2.2 Criteria for Small Grant Projects

- The Community Adaptation SGF will fund small grant projects that address a clear climate change related threat and have a clear and demonstrable link to tangible, measurable and visible adaptation benefits for vulnerable communities.
- Small grant projects must clearly demonstrate that they respond to a particular climate change risk that is relevant for the project area, as identified in the project VAs (see Annex II).
- Small grant projects must support adaptive interventions that clearly respond to current or anticipated local vulnerabilities that deliver concrete, tangible and measurable climate change adaptation benefits.
- Small grant projects must support concrete actions and deliver tangible results that increase resilience to climate variability and change.

- Small grant projects must be able to show no significant risks in terms of the AF ESP, or minor risks that can be mitigated.
- Small grant projects must align with the Community Adaptation SGF Investment Windows, as described above in Box 3.
- Small grant projects must be located within the broader development context (provide economic, social, and/or environmental co-benefits) of the area.
- Small grant projects must be supported by anticipated beneficiaries and local community stakeholders.
- Where relevant, small grant projects are required to demonstrate sustainable land tenure arrangements.
- Small grant projects must support vulnerable, local communities and especially women.
- Small grant projects will benefit community groups rather than single individuals i.e. at least 50 direct community beneficiaries per project.
- Small grant projects must include learning outcomes and inform ways to scale up and replicate approaches in other communities.
- Small grant projects must clearly demonstrate how success will be measured and must have clear indicators.
- Small grant projects must be replicable and/or scalable.
- Small grant projects must be sustainable after the Community Adaptation SGF funding ends.
- Small grant projects must be cost-effective.
- Small grant projects must be located in rural/semi-rural areas.
- Small grant projects must be implemented in the Namakwa District Municipality, or Greater Giyani or Greater Letaba in the Mopani District Municipality.

## **2.3 Environmental and Social Risk Screening**

All small grant projects will be screened against the AF ESP, and potential Small Grant Recipients will be required to complete Table 2. Any small grant project that does not meet the requirements for a project with no significant risks in terms of the AF ESP, or minor risks that can be mitigated, will be excluded.

Particular attention will be given to ensuring that small grant 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.

As mentioned above, small grant projects 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. Activities that are listed in the EIA regulations will only be approved where provincial authorisations can be obtained as part of South Africa's Working for Wetlands Programme. These provincial authorisations apply to riparian zone activities (such as rehabilitation or restoration of wetlands, rehabilitation and restoration of river banks including erosion control and the construction of low river crossings) and littoral zone activities (such as small-scale coastal storm protection structures). Such provincial authorisations will need to be provided in writing before any grants that entail these proposed activities are awarded.

## **2.4 Environmental and Social Risk Monitoring**

Implementation monitoring and reporting processes will be designed to have explicit focus on the monitoring of the identified minor risks, as well as any unintended environmental and social risks. These processes are broadly outlined in Stage 4 (Implementation, monitoring and reporting) in Section 1. These will apply to the individual small grant projects, as outlined in Figure 1, as well as to the programme as a whole via the six-monthly reports that are compiled by the EE and the Environmental and Social Safeguard Expert, for submission to the PSC and NIE.

Mid-term and Final Evaluations will also have a specific focus on compliance with the AF ESP and national Environmental Impact Assessment standards and regulations.

**Table 2:** Checklist of environmental and social principles.

<b>Checklist of environmental and social principles</b>	<b>No further assessment required for compliance</b>	<b>Potential impacts and risks – further assessment and management required for compliance</b>
<i>Compliance with the Law</i>		
<i>Access and Equity</i>		
<i>Marginalised and Vulnerable Groups</i>		
<i>Human Rights</i>		
<i>Gender Equity and Women's Empowerment</i>		
<i>Core Labour Rights</i>		
<i>Indigenous Peoples</i>		
<i>Involuntary Resettlement</i>		
<i>Protection of Natural Habitats</i>		
<i>Conservation of Biological Diversity</i>		
<i>Climate Change</i>		
<i>Pollution Prevention and Resource Efficiency</i>		
<i>Public Health</i>		
<i>Physical and Cultural Heritage</i>		
<i>Lands and Soil Conservation</i>		

### **3. Institutional Arrangements**

#### **National Implementing Entity**

SANBI will be the **National Implementing Entity** for the Community Adaptation SGF. SANBI will support project implementation by assisting in monitoring project budgets and expenditures and supporting the recruitment and contracting of project personnel and consultant services, including subcontracting. SANBI will also monitor project implementation and the achievement of the project outcomes/outputs and ensure the efficient use of donor funds.

#### **Executing Entity**

The Community Adaptation SGF will be administered through SouthSouthNorth (SSN) Trust, the project's **Executing Entity**. The SSN Trust was identified following a thorough review of potentially suitable existing entities in South Africa and a subsequent process that called for expressions of interest. See Box 7 for further details.

SSN Trust will be responsible for receiving and disbursing funds, for contracting the project's Facilitating Agencies and other service providers, and for contracting arrangements with all Small Grant Recipients. They will also be responsible for overall project monitoring, evaluation and reporting and will work directly with the NIE to ensure that AF reporting requirements are met.

SSN Trust will appoint and designate a **Project Manager (PM)** for the duration of the project. The PM's primary responsibility will be to ensure that the project produces the results specified in the project document to the required standard of quality and within the specified constraints of time and cost.

### **Facilitating Agencies**

The project's **Facilitating Agencies** will provide site-based support in each of the project target areas. They will appoint Project Coordination Staff including a **local coordinator** in each region. These local coordinators will support Small Grant Recipients to execute the project activities, including project identification, design and implementation, day-to-day operations of the project, and operational and financial management and reporting.

The Facilitating Agencies will invite two officials from each of the District Municipalities to work alongside them in the project development process so as to build local capacity in this area, and to ensure optimal alignment between the project development process and related municipal activities such as Local Economic Development and Integrated Development Planning.

CSA will act as Facilitating Agency for Namakwa. They have a long history working in this area, and have an excellent track record in community engagement and grant making, including project identification, development, training and management support. They also have an established long-standing relationship with the District Municipality. The Facilitating Agency for Mopani will be identified through a transparent procurement process that will commence once it is certain that the project will proceed.

During the Community Adaptation SGF inception phase, the NIE will engage directly with the EE and Facilitating Agencies on operating procedures that will apply to the management of the SGF, and that will be necessary to ensure compliance with SANBI and AF policies and procedures. Particular focus will be placed on the AF ESP, and a dedicated capacity building session will help to ensure that both the EE and Facilitating Agencies are able to competently screen small grant project ideas, concepts and proposals for environmental and social risks, and to detect these in future project monitoring, evaluation and reporting processes.

### **Service providers**

Service providers will be contracted to provide specialist support as required over the duration of the project. These services will include technical input to proposal development and review, specialist training, writing of case studies and independent project evaluations.

### **Oversight, Governance and Coordination**

The proposed governance and implementation arrangements for the project are illustrated in Figure 2 and the envisaged roles and responsibilities that will be assigned to each of these structures is described below.

Strategic and operational oversight, and in particular oversight over compliance with the AF ESP, will be ensured by the NIE.

The NIE is governed by the NIE Steering Committee, which includes SANBI as the accredited National Implementing Entity for South Africa, DEA as the Designated Authority, National Treasury, the NPC and the Adaptation Network. The Steering Committee is chaired by SANBI with DEA as Deputy Chair.

The Steering Committee has the following functions:

- Providing overall project governance
- Supporting SANBI to ensure overall compliance with the spirit, policies and procedures of the Adaptation Fund.
- Monitoring AF ESP risks, and oversight of corrective action that may need to be taken.
- Supporting the NIE to build a coordinated adaptation response that delivers tangible outcomes.
- Guiding the development of and endorse the NIE investment strategy, ensuring optimal linkages with the policy environment and that projects are driven by country needs
- Setting up and oversee the project review process, including guiding the development of terms of reference for reviewers, setting up the review panel, and considering the recommendations of reviewers.
- Endorsing projects for submission to the Adaptation Fund, ensuring appropriate linkages with Adaptation Fund criteria and facilitating appropriate consultation with and, where necessary, endorsement from relevant spheres of government. From time to time this may involve promoting

agreement on the roles of relevant institutions in implementing AF projects and facilitate the resolution of disputes among project partners.

- Promoting cooperation between relevant South African Institutions and funding agencies to enhance synergy and avoid duplication between adaptation efforts, to leverage additional resources where appropriate, and to support information management and flows between and feedback between the NIE and the NCCC and IGCCC and contribute towards climate finance and climate change adaptation policy development.

One of the main objectives of the NIE is to draw lessons and experiences from the NIE project development and implementation processes. This will support climate change adaptation planning, decision making and monitoring and evaluation with a view to enhancing the benefits of adaptation responses both nationally and internationally. This process will be supported by both DEA and SANBI.

### **Project Management Team**

The day to day management of the project will be supported by a **Project Management Team** that will comprise SSN Trust and the two Facilitating Agencies. As and when required, the Project Management Team may co-opt others such as the NIE or other members of the NIE Steering Committee to join the Project Management Team. Project Management Team meetings will be coordinated by the EE's Community Adaptation SGF Project Manager, and will happen at least monthly.

### **Project Steering Committee**

A **PSC** will be set up to provide overall governance and project oversight and to consider recommendations regarding the approval of the small grants that are the subject of this project.

The PSC will comprise:

- The National Department of Environmental Affairs;
- The Adaptation Network, which is a network whose membership includes a broad spectrum of NGOs, academia, government and business organisations with a shared interest in adaptation strategies for the negative impacts of climate change. The Adaptation Network represents Civil Society on the NIE Steering Committee and is well placed to do the same on the Community Adaptation SGF PSC;
- Representatives of the Mopani and Namakwa District Municipalities;
- The NIE; and
- Technical climate change adaptation experts who are drawn from National Academic Institutions and target area government departments.

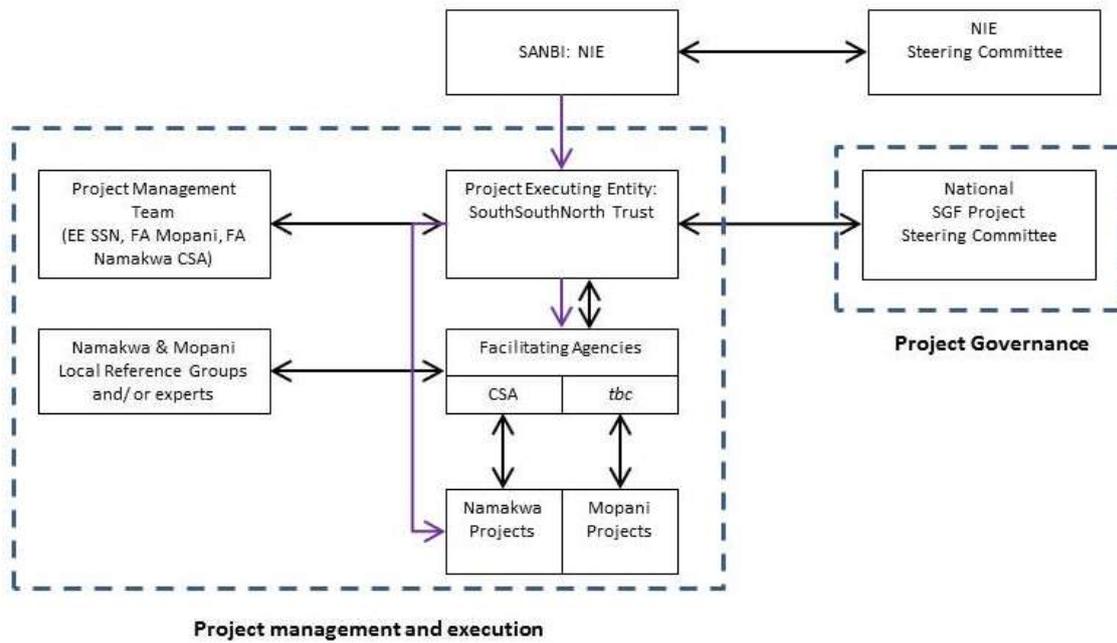
The EE will convene and act as Secretariat for this committee, and both the EE and the Facilitating Agencies will take guidance from the PSC processes. The PSC will meet quarterly.

### **Local Reference Groups**

**Local Reference Groups** will be set up at project inception. They will support the Facilitating Agencies to ensure that projects are locally contextualised, consider local and indigenous knowledge, integrated and coordinated into on-going local programmes of work, technically robust and sustainable. In some cases they may also be able to attest to the credibility of the prospective Small Grant Recipients.

It is envisaged that members of these groups will include the officials from the democratically elected Mopani and Namakwa local government District Municipalities, relevant Local Municipalities and relevant provincial departments, including the Limpopo Department of Agriculture, LEDET and the Northern Cape Department of Environment and Nature Conservation. The members will also include relevant national sector departments and experts from tertiary institutions and research institutions, including the University of Limpopo, the Risk and Vulnerability Science Centre at the University of Limpopo and the Agricultural Research Council. Amongst others, prospective Small Grant Recipients will not be able to be members of these groups.

These Local Reference Groups will play an important role in concept screening during the first stage of the project development process, in detailed application development and in project implementation, learning, monitoring and reporting processes.



**Figure 2:** Institutional Arrangements for the Community Adaptation SGF project. The black arrows indicate the relationships between the different project partners and committees. The purple arrows indicate the flow of funds. Abbreviations: Executing Entity (EE); SouthSouthNorth (SSN) Trust; Facilitating Agency (FA); and Conservation South Africa (CSA).

## **Annex VII: Other supporting documents**

### **Annex VII.1 Technical Note**

#### **TECHNICAL NOTE: DRAFT PROPOSAL FOR THE IDENTIFICATION OF THE EXECUTING ENTITY FOR THE SMALL GRANT FACILITY (SGF)**

##### **PURPOSE**

To inform the process for the identification of the Executing Entity of the Small Grants Facility developed under the National Implementing Entity for the Adaptation Fund.

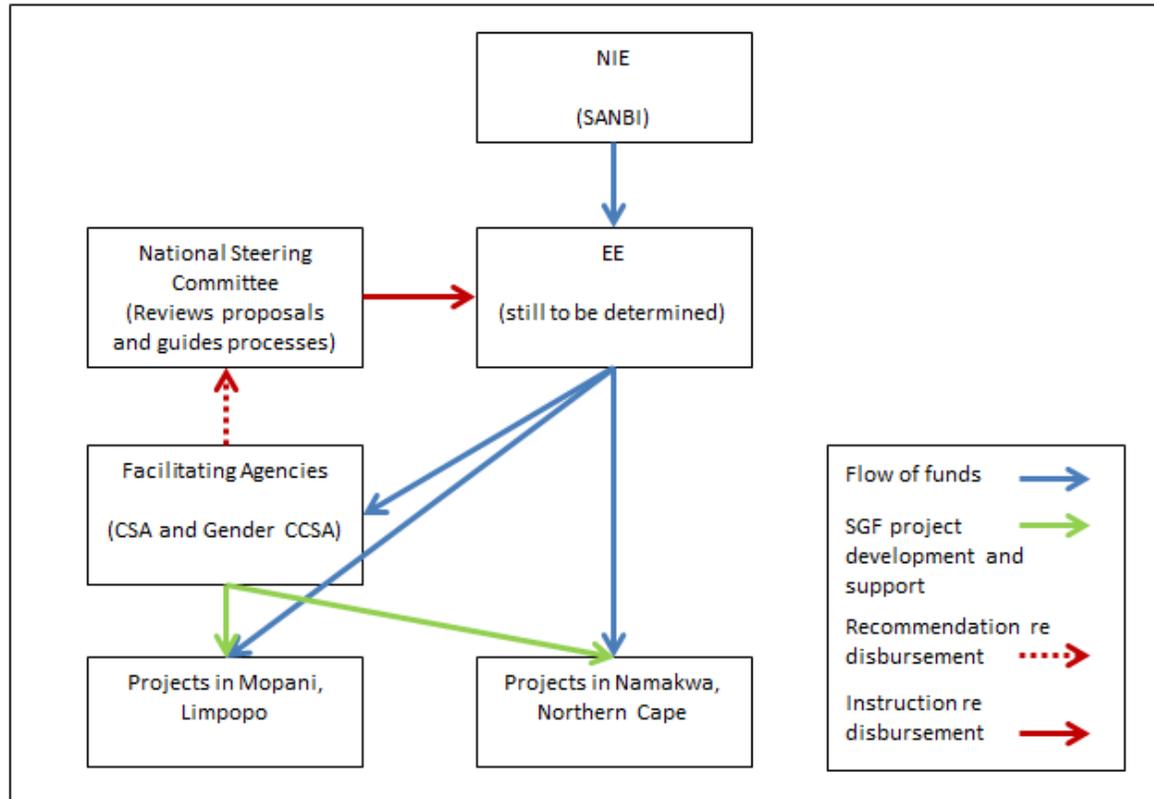
##### **INTRODUCTION**

The need for a SGF for Climate Change Adaptation was identified during the NIE's early engagement processes with stakeholders. During these engagements, stakeholders commented that, in order for vulnerable groups to be empowered to take local action, they needed to have direct access to Climate Change Adaptation resources. The SGF concept was presented to the Adaptation Board in July 2013. It was received with much enthusiasm. The Board is expecting SANBI to submit a fully developed proposal by July 2014 that, among other things, elucidates how the SGF will function.

SANBI will need to demonstrate that the mechanism that supports the SGF meets the following objectives:

- Cost effective – Need to demonstrate that the overall return on investment in Climate Change Adaptation at least matches that of other financing instruments
- Transparent and well governed – Processes for the identification, review and approval of projects need to be transparent and fair
- Technically sound – The SGF must be able to mobilise capacity and project development support for the communities that are envisaged to be beneficiaries of the SGF
- Accountable - Sound financial, monitoring, evaluation, reporting and auditing capabilities
- Sustainable – The SGF must be set up in such a way that it is possible to recapitalise the fund with additional resources once the AF investment is exhausted

In order to support the above, and recognising that it would be difficult to identify an Executing Entity with both financial management and project development capabilities and that it may in fact be desirable to separate these in order to support good governance, a governance and oversight process was conceptualised. This is presented in Figure 1 below. The process and supporting proposal to the Adaptation Fund Board proposed that Gender cc and CSA would function as facilitating agencies for the project, bringing much needed project development and technical support into the local beneficiary communities. It was noted that the institution that would function as the Executing agency would still be determined.



**Figure 1:** Proposed Governance and Oversight processes for the SGF

## **BACKGROUND**

As discussed, the work under the National Implementing Entity has culminated in the approval of the Small Grants Facility by the Adaptation Fund Board. The principles of direct access and enhanced direct access which aims to ensure linkages between the available funding and potential beneficiaries of the fund are entrenched in the SGF concept. This would also generate very clear and tangible outcomes with respect to climate adaptation on the ground and help to inform key lessons and strategies going forward.

To facilitate the implementation of the SGF special financing mechanism, it is vitally important that a capable Executing Entity (ies) is identified and appointed as the primary executing entity for the mechanism.

In this regard, it is recognised that the SGF could:

- Piggyback on the administration, governance and institutional structures of one of these entities; OR
- Based on the review and evaluation of the different financing mechanisms, a new governance and institutional structure could be proposed for the SGF

Based on discussions between the National Treasury and the NIE team, several existing small grant and climate adaptation related mechanisms were identified for further consideration by the NIE Steering Committee. These are:

- National LandCare Programme: Small Community Grants Component
- Expanded Public Works Programme: Environmental and Culture Sector
- Global Environment Facility: Small Grants Programme (SGP)
- Drylands Fund
- Green Fund
- NGO Small Grant Facilities.

It is also evident that climate finance efforts in South Africa are currently quite fragmented and the potential for double dipping is very high. Therefore, there is a need for developing a national vision or strategic context for micro finance focusing on the SGF to support small scale adaptation efforts and to consider the role of the SGF in addressing some of the financial gaps associated with adaptation.

Accordingly, this note seeks to review the current financing mechanisms based on the scope, objectives, governance structure and institutional arrangements of the respective instruments. This assessment will form the basis for recommendations to inform the appointment of the executing entity for the SGF.

## OVERVIEW OF CURRENT DEDICATED CLIMATE ADAPTATION RELATED FINANCING INSTRUMENTS

Table 1 below provides a preliminary discussion and comparison of the different environmental financing instruments that are connected to DEA, drawing on desktop research and information that was readily available.

Information about NGO-managed small grant facilities was not accessed at this time.

**Table 1: Summary of Current Dedicated Climate Adaptation Related Financing Instruments**

	<b>National Land Care Programme: Small Community Grants</b>	<b>Expanded Public Work Programme</b>	<b>Global Environmental Facility: Small Grants Programme</b>	<b>Drylands Fund</b>	<b>Green Fund</b>
Objective	<p>To develop and implement integrated approaches to natural resource management in South Africa that are efficient, sustainable, equitable and consistent with the principles of ecologically sustainable development. Facilitate the implementation of the National LandCare Programme. Grants available for projects, amongst others, that:</p> <ul style="list-style-type: none"> <li>• Improve the ability of land-users to manage land, water and related vegetation in a sustainable and self-reliant manner;</li> <li>• Promote integrated approaches to local catchment areas and regional planning</li> <li>• Demonstrate innovative approaches to natural resource management</li> </ul>	<p>The EPWP Environmental and Culture Sector Programme aims to:</p> <ul style="list-style-type: none"> <li>• Integrate sustainable rural development and urban renewal</li> <li>• Create land-based livelihoods</li> <li>• Promote community based natural resource management (sustainable management and efficient use of natural agricultural resources and production inputs)</li> <li>• Rehabilitate natural resources and protect biodiversity</li> <li>• Promote tourism</li> </ul>	<p>Programme aims to support the overall objectives and focal areas of the GEF.</p> <p>Grants are provided by the GEF to developing countries for projects related to biodiversity, climate change, international waters, land degradation, ozone layer and persistent organic pollutants.</p>	<p>Aims to scale up efforts to address environmental degradation, climate change and rural poverty in South Africa. Support pro-poor initiatives that restore and sustain healthy ecosystems, building partnerships around regenerative processes, and adapting and mitigate climate change.</p>	<p>Provide an evidence base for the transition to a low carbon, green economy.</p>
Scope	<p>Focus on small, catalytic projects that bring community expertise together in the following areas:</p> <ul style="list-style-type: none"> <li>• Funding provided for works which are cost-effective and an integral part of a widely based natural resource management strategy.</li> <li>• Planning and implementation of plans for sustainable agricultural natural resources management and agriculture, especially at local catchment and regional level.</li> <li>• Investigations, trials and demonstration activities that encompass approaches to the sustainable management, rehabilitation, and conservation of</li> </ul>	<p>The programme is focused on job creation and poverty alleviation. The incentive for the environment and culture sector is designed to channel additional resources to performing sector programmes. Sector departments that create jobs are rewarded by reimbursing the relevant department a portion of the wage costs.</p>	<p>Programme responds to the demand from local communities and NGOs for grants in GEF focal areas. Supports the community-based approach for addressing local and global environmental challenges.</p> <p>The programme empowers communities to act and participate in their own development and supports a direct connection between sustainable and local and global livelihoods.</p>	<p>Fund is primarily a pro-poor rural development fund supporting the United Nations Convention to Combat Desertification.</p> <p>Serves as a financial vehicle that could seek to address financial gaps in environmental finance. Create financial mechanisms and develop markets to support biodiversity conservation and management; water; carbon emissions reductions and other environmental financial mechanisms.</p> <p>The Drylands funding mechanism could have a role in administering these mechanisms and serving as mechanism</p>	<p>Provide financial support in the form of grants and / or loan financing for projects in three priority windows:</p> <ul style="list-style-type: none"> <li>• Natural Resource Management</li> <li>• Green Cities and Windows</li> <li>• Low Carbon Economy</li> </ul>

	<b>National Land Care Programme: Small Community Grants</b>	<b>Expanded Public Work Programme</b>	<b>Global Environmental Facility: Small Grants Programme</b>	<b>Drylands Fund</b>	<b>Green Fund</b>
	<p>natural resources.</p> <ul style="list-style-type: none"> <li>Funding to encourage the development and adoption of enhanced sustainable practices, which address causes rather than symptoms of resource degradation.</li> </ul>			for channeling environmental finance.	
Responsible institution government department department / other	Department of Agriculture, Forestry and Fisheries and provincial departments of agriculture in collaboration with the Department of Environmental Affairs.	National Department of Public Works, Department of Environmental Affairs and other sector departments.	Global Environmental Facility	Department of Environmental Affairs	Department of Environmental Affairs
Links with other initiatives	<p>Projects should be aligned with national objectives as outlined in various strategies and policies.</p> <p>Applicants should seek funding from other sources as deemed appropriate. For example, the Working for Water, Farmers Support Initiatives and programmes implemented by the NGO sector. Such funding and projects should complement the small grant initiatives.</p>	N/A	SGP projects need to meet the GEF criteria and the needs of communities. The SGP will need to mobilise additional resources to assist with, among others, providing co-financing, technical assistance and capacity building.	N/A	As part of the project selection criteria, applicants need to disclose information on other sources of funding.
Organisational Structure	<p>Structure establishes linkages between national and provincial departments of agriculture, NGOs, and civil society.</p> <p>DEA is responsible for coordinating the implementation of international conventions. The organisational structure comprises the following:</p> <ul style="list-style-type: none"> <li>MINMEC Agriculture:</li> <li>Intergovernmental Technical Committee on Agriculture</li> <li>Interprovincial LandCare Working Group</li> <li>Provincial LandCare Working Group</li> <li>Provincial LandCare Advisory Forum</li> </ul>	<p>The EPWP E&amp;C sector programme is coordinated by the Public Works Department. The organisational structure includes:</p> <ul style="list-style-type: none"> <li>Environment and Culture Sector Programme Management Team (comprising National Treasury, Department of Tourism, Department of Agriculture, Forestry and Fisheries, Water Affairs, Environmental Affairs and Arts and Culture).</li> <li>Secretariat: Public Works</li> <li>National EPWP Coordinating Committee: Technical Committee and representation by the sectoral coordinating national departments, 9 provincial</li> </ul>	<p>The Small programme structure includes representation of a global team for the GEF and country level representation.</p> <p>The Central Global Management Team are responsible for regional coordination and support country programmes on technical matters related to focal areas and thematic directions, capacity and partnership development, knowledge management and monitoring and evaluation.</p> <p>The Small Grants Programme operates through country programme teams comprising the following at a national level:</p>	<p>The main elements of the mechanism are:</p> <ul style="list-style-type: none"> <li>Development of an Agency Programme: DEA and the Development Bank of South Africa</li> <li>Steering Committee: oversight function comprising government, NGOs and business</li> <li>Project implementation unit (management and operations of the fund): DBSA</li> <li>Partnership forums: Donor community and investors</li> <li>Project development</li> </ul>	<p>The Green Fund is established as an on budget programme of the Department of Environmental Affairs. The structure of the financing mechanism can be summarised as follows:</p> <ul style="list-style-type: none"> <li>Management Committee of the Green Fund comprising DEA, National Treasury, and the DBSA)</li> <li>Government Advisory Panel: Usually led by DEA Implementing Agency: DBSA</li> <li>Project Management and Technical Advisory Project Support: DBSA and Management Committee</li> </ul>

	<b>National Land Care Programme: Small Community Grants</b>	<b>Expanded Public Work Programme</b>	<b>Global Environmental Facility: Small Grants Programme</b>	<b>Drylands Fund</b>	<b>Green Fund</b>
	<ul style="list-style-type: none"> <li>LandCare Secretariat: Department of Agriculture, Forestry and Fisheries</li> </ul>	coordinators and permanent nominated representatives from the key implementing national and provincial departments.	<ul style="list-style-type: none"> <li>National coordinator</li> <li>Programme assistant</li> <li>National Steering Committee in participating country</li> <li>Hosted mostly by UNDP country offices in South Africa</li> </ul>		
Eligible applicants	<p>Local community or combination of groups seeking to manage or conserve specific areas of land, water, vegetation or biodiversity. Community groups should be registered. Two or more community groups working on a shared project can make a joint application.</p> <p>Local government working with one or more community groups. Project should demonstrate high community involvement and leadership of the project.</p>	Implementing agents that serve as the intermediary for potential beneficiaries.	<p>Provides grants to civil society organisations especially NGOs, community based organisations and indigenous peoples organisations.</p> <p>Community based groups that are not formally registered can work with the United Nations Office for Project Services (UNOPs) and develop memorandum of agreements which allows grants to be awarded to them. These groups do not need to go through an intermediary NGO.</p>	Possibly private sector, NGOs, and academia.	Government, private sector, NGOs, and academia.
Project application and Assessment process	<p>Assessment panels are formed in regions or catchments and are responsible for assessing the applications in line with the selection criteria.</p> <p>The assessment panel submits project recommendations to the Provincial Endorsement Panel comprising Provincial Forum members to ensure that projects meet provincial priorities.</p> <p>Recommended projects from the region are submitted to the National Department of Agriculture and a national panel is convened to fully assess all projects based on national priorities and merits.</p>	N/A	<p>The Small Grant Programme country programme prepares and issues an SGP programme announcement on completion of the Country Programme Strategy and any revisions to the strategy.</p> <p>Projects concepts are screened by the National Coordinator or jointly with the National Steering Committee. The project concept selection is conducted on the basis of established eligibility and selection criteria.</p> <p>Once project concepts have been selected and approved, qualifying organisations are notified and requested to develop complete project proposals.</p>	Predefined project selection criteria.	Predefined project selection criteria.

	National Land Care Programme: Small Community Grants	Expanded Public Work Programme	Global Environmental Facility: Small Grants Programme	Drylands Fund	Green Fund
			<p>Additional assistance may be provided for proposal development to the CSO / CBO by the NC. A local consultant may be hired to help the CSO/CBO and the SGP planning grant may be used.</p> <p>At project level, project proposal guidelines have been developed for the SGP. This requires information on:</p> <ul style="list-style-type: none"> <li>• project rationale and approach</li> <li>• description of project activities</li> <li>• implementation plan and timeframe</li> <li>• plan to ensure community participation</li> <li>• knowledge management</li> <li>• project monitoring, evaluation plan and indicators</li> <li>• project budgetary requirements</li> </ul> <p>project funding summary including sources of funding</p>		
Administrative arrangements	<p>Successful applicants are expected to sign a project management agreement.</p> <p>This sets out the conditions for funding including the recipient's responsibility to maintain accounting records for spending of grant funds, and reporting requirements on the progress and results from the project.</p>	<p>Clear contracting arrangements with the Project Implementing Agents to ensure implementation of the incentive.</p> <p>Sector departments need to ensure that new targets, key performance indicators, reporting times and audit requirements are incorporated into the project agreements. They also have to ensure that the implementing agents have the necessary administration and financial systems to maintain the information / records required for the incentive.</p>	N/A	N/A	N/A
Financial arrangements					

	<b>National Land Care Programme: Small Community Grants</b>	<b>Expanded Public Work Programme</b>	<b>Global Environmental Facility: Small Grants Programme</b>	<b>Drylands Fund</b>	<b>Green Fund</b>
Funding	<p>Funding is allocated to projects on an annual basis. On-going projects are subject to progress review and report.</p> <p>R 100 000 (maximum)</p> <p>Project funding is provided for a maximum of three years to allow funds to be directed to new emerging priorities.</p>	As per the quantified incentive.	<p>US \$ 50 000 maximum grant amount per project. This complements the medium and large sized GEF project funding.</p> <p>In special cases funding will be provided at a maximum of US\$ 150 000 for strategic projects that involve several communities and CSOs.</p> <p>Grants are disbursed directly to CBOs and NGOs.</p> <p>SGP projects are funded for a period of between one and three years. The first disbursement should not exceed 50 per cent of the total project grant amount.</p>	N/A	Funding of R1.1 billion has been made available from the fiscus. There does not seem to be a cap on the maximum grant that can be awarded. However, requirements for co-financing are built into the project assessment process.
Reporting, monitoring and evaluation requirements					
Reporting requirements	<p>Project performance information needs to be submitted as part of the annual review and to comply with audit requirements.</p> <p>Quarterly progress reports and financial reports also need to be completed for the Department of Agriculture, Forestry and Fisheries.</p> <p>A final report needs to be compiled by project managers on completion of the project evaluating the successes and failures (learning's) of the project in achieving its objectives.</p>	<p>Specific agreed reporting processes and information requirements aim to ensure and record progress on projects. The implementing agent at project level needs to record certain data and information including:</p> <ul style="list-style-type: none"> <li>• Site information</li> <li>• Payment information</li> <li>• Beneficiary / worker information</li> </ul> <p>This data enables proper project reporting. Sector departments are responsible for ensuring that the implementing agents are aware of the information requirements.</p> <p>Monthly reporting is also required and the implementing agent must provide this information to the sector department's project manager. The sector department will report their</p>	<p>The National Coordinator reports on:</p> <ul style="list-style-type: none"> <li>• Technical and substantive matters to the Central Programme Management Team and to the UNOPs portfolio manager on administrative and financial issues.</li> </ul> <p>The NC keeps the UNDP Country Office informed of progress in programme implementation</p>	N/A	N/A

	<b>National Land Care Programme: Small Community Grants</b>	<b>Expanded Public Work Programme</b>	<b>Global Environmental Facility: Small Grants Programme</b>	<b>Drylands Fund</b>	<b>Green Fund</b>
		<p>programme data to the National treasury on a monthly basis.</p> <p>Reporting of project information on a monthly basis by the sector department to the National Department of Public Works including performance and basic financial information.</p> <p>The monthly report from the sector department will be used as the basis to calculate the incentive amounts earned at the end of the quarter.</p>			
Monitoring and evaluation, and audit requirements	The Department of Agriculture, Forestry and Fisheries may undertake periodic, ad hoc inspections of projects to ensure that programme objectives and financial accountability requirements are adequately met.	<p>Programme auditing will be undertaken by the NDPW on an annual basis. The required information must be provided internal audit units of the sector departments.</p> <p>Programme evaluation will be undertaken by the EPWP programme unit to assess the impact and effectiveness of the programme.</p>	<p>Depending on the success of the project, additional funding can be applied for on a case by case basis.</p> <p>The National Coordinator should report on technical and substantive project and programme progress through the annual country programme report.</p> <p>Audits of SGP country programmes will be conducted in line with internationally accepted auditing standards, and applicable financial rules and regulations. Audits cover management; financial and administrative issues as they related to the country programme as a whole, and do not include requirements for project-level inspection.</p>	<p>Monitoring and evaluation framework is in terms of the overall national framework for monitoring and implementation of the United National Convention to Combat Desertification and the national Action Plan to Combat Desertification and Poverty.</p> <p>Impacts of the fund will be reviewed periodically by independent monitoring and evaluation teams.</p> <p>Fund is independently audited on an annual basis.</p>	N/A
Continuing projects	<p>Project managers will need to provide progress reports when applying for continued, additional funding. This should take into account resources to measure the impacts of the project relatives to its stated aims, benefits to the environment and possible social, economic and educational benefits to the community.</p> <p>As a guide, it is recommended that 2 to 4 per cent of the total budget for the project is allocated for monitoring and</p>				

	<b>National Land Care Programme: Small Community Grants</b>	<b>Expanded Public Work Programme</b>	<b>Global Environmental Facility: Small Grants Programme</b>	<b>Drylands Fund</b>	<b>Green Fund</b>
	evaluation.				
Ineligible activities	<p>Funding will not be provided for activities that are not aligned with national priorities and strategies, and will not duplicate funding from other sources (double dipping).</p> <p>Funding for treating symptoms inappropriate past management (eg. reclamation of degraded land or removal of invasive weeds and plants).</p> <p>Also, funding does not cover basic operating expenses, projects generating private benefits, and agricultural production which is not linked to sustainable agricultural and natural resource management.</p>	N/A	N/A	N/A	N/A

## REVIEW AND DISCUSSION

The above summary was undertaken primarily to help inform the governance structure and institutional arrangements for the SGF and specifically, to inform the identification of an Executing Entity for the SGF and to identify synergies between the different programmes. Below are some of the high level conclusions of the different programmes in relation to the SGF.

*The National LandCare Programme: Small Community Grants component and the Global Environment Facility Small Grants Programme (SGP).* Both these programmes are designed and targeted towards the provision of grants to non-governmental and community based organisations at grassroots level. The Landcare programme focuses on natural resource management in the agriculture and land-use sectors whilst the GEF SGP channels funding towards key environmental focal areas including climate change and biodiversity. The LandCare programme represents a domestic initiative whilst the GEF SGP forms part of a global initiative of the United Nations. Furthermore, both these initiatives have developed quite comprehensive governance structures, institutional, monitoring and evaluation arrangements and reporting requirements and could offer useful lessons for the implementation of the SGF.

However, in contrast with these programmes, the SGF is designed to focus exclusively on climate change adaptation activities and should perhaps be viewed as a complementary initiative rather than as part of mainstreaming efforts to include adaptation related criteria into these existing programmes. In addition, important lessons can be learnt from the implementation of the SGF focused solely on adaptation that could also help to inform a medium to longer term strategy on microfinance for climate adaptation.

*Expanded Public Works Programme.* The EPWP programme is implemented as an incentive programme to promote natural resource management under the Environmental and Culture Sector component which includes the Working for Water Programme. Conceptually, the incentive is performance based and takes the form of a reimbursement to government line departments of a portion of the wage costs for jobs that are created per programme. The incentive is driven mainly by job creation as opposed to environmental criteria. This differs from the SGF which is an upfront grant allocation for projects focused mainly on adapting to the impacts of climate change and the design of the administrative structures and financial arrangements for the EPWP may be unsuitable for the SGF. Thus integrating the SGF into the EPWP programme may not be appropriate and could introduce further complexities into both systems.

*Drylands Fund and Green Fund.* The Department of Environmental Affairs is the responsible department for both these mechanisms. The Drylands fund seeks to scale up efforts to address environmental degradation, climate change and rural poverty in South Africa while the Green Fund provides financial support in the form of grants and / or loan financing for projects in three priority windows: Natural Resource Management, Green Cities and Windows and Low Carbon Economy. The scope of both these funds seems to have strong climate change adaptation elements;

however, they do not focus exclusively on adaptation and the extent to which micro-finance for community based organisations is prioritised is unclear. The SGF can therefore be viewed as complementary to these initiatives. One of the main features of these mechanisms that may be relevant for the SGF is the appointment of the Development Bank of South Africa as the implementing agency for both these mechanisms. However, consideration should be given to the on-going restructuring of the DBSA and possibly limited technical expertise and capacity of the institution to implement the SGF mechanism.

*Overall, there is strong case to establish the SGF as a dedicated micro-finance facility for climate change adaptation initiatives and as complementary to the existing dedicated financing instruments discussed above. Taking cognisance of the existing mechanisms and the complexities of implementing the SGF as part of these programmes, there is a need to identify the executing entity of the SGF independent of these initiatives. The case for SANBI to be appointed as both the NIE and the executing entity therefore requires further consideration.*

## **CONCLUSIONS**

Based on the summary and comparison of the different instruments in Table 1, and having considered the proposed model for the SGF (set out in Figure 1), it is concluded that it would be of value to consider SANBI playing the role of EE, much like the UNDP acts as EE for the GEF SGF.

In this regard it is recommended that the NIE Steering Committee:

- Endorses a process whereby the NIE secretariat explores the feasibility and viability of SANBI acting as EE for the NIE SGF, including discussing this approach with the AF Secretariat.
- Agree to continue a strategic discussion on the sustainability of the SGF, and how it relates to other related financing instruments, over the SGF implementation period.

Such a process should examine the operating mechanisms of the above instruments, with a view to adopting appropriate best practice approaches, and compare the administration costs of utilising SANBI vs another agency for this function. Disbursement and procurement implications should also be considered.

## Annex VII.2 Call for expression of interest and NIE SC TT recommendation



### SOUTH AFRICAN NATIONAL IMPLEMENTING ENTITY OF THE GLOBAL ADAPTATION FUND

#### Call for Expressions of Interest: Partner to lead the Climate Change Adaptation Small Grants Project

---

*The South African National Biodiversity Institute (SANBI) wishes to identify an EXECUTING ENTITY to partner with it and lead South Africa's Small Grant Facility pilot project for Climate Change Adaptation.*

#### 1. Introduction

SANBI is seeking the services of an appropriately qualified and experienced organisation to partner with it in the development and implementation of a Small Grants Facility (SGF) for Climate Change Adaptation. This project will provide valuable insights into direct access climate finance processes, with both local and international relevance. This is an exciting opportunity for an organisation that wishes to continue to establish itself as an innovator in Climate Change Adaptation financing.

The ideal organisation will already be working both nationally and internationally on climate adaptation finance issues, will have practical first-hand experience of small granting processes and will have a good track record in financial management, project monitoring and reporting. The ideal organisation will also be able to integrate this project into ongoing activities and, in so doing, will be able to cofinance some of the strategic elements of the work.

#### 2. Background

The Adaptation Fund was established by the Parties to the Kyoto Protocol of the UNFCCC, as a mechanism to finance concrete adaptation projects and programmes in developing country parties. The fund is capitalised mainly from a percentage of proceeds of the Clean Development Mechanism (CDM). Projects that are designed to implement adaptation responses may be eligible to access project funds via Multilateral Implementing Entities (MIEs) and National Implementing Entities (NIEs). In South Africa, SANBI has been accredited to serve the role of National Implementing Entity (NIE), with the Department of Environmental Affairs (DEA) serving as the Designated Authority.

In late 2012, SANBI issued a call for Climate Change Adaptation concept proposals, and as part of this call, we mentioned that one of the projects might be a Small Grants Facility project, whereby vulnerable communities could directly access projects funds. Since this call, two project concepts were successfully submitted to the Adaptation Fund. Together with its partner institutions, the NIE is currently developing these into fully developed project proposals. These will need to be submitted to the Adaptation Fund for further consideration in June 2014.

One of these projects is for a Small Grants Facility (SGF) for Climate Change Adaptation. Entitled "Taking adaptation to the ground: a small grants facility for enabling local level responses to climate change in South Africa", this will be a SGF that builds resilience in vulnerable communities by supporting the development and implementation of projects that respond to local climate risks. The SGF project will pilot its approach in the Namakwa and Mopani Districts in Northern Cape and Limpopo Provinces respectively. It is envisaged that approximately 6 grants of \$100 000 each will be supported in each of these focal Districts.

The SGF project will be led and managed by an Executing Entity that will be responsible for overall project execution, management and coordination. Two Facilitating Agencies will provide direct support to grant recipients in each of the two project focal Districts.

It is envisaged that, if successful, the SGF project could be scaled up to receive funds from sources other than the Adaptation Fund, and be broadened to other areas in South Africa. It is envisaged that, in addition to leading the project, the Executing Entity will partner with the NIE to support this process. This could include sharing lessons learned with the international climate change community, and developing policy positions and practical innovative suggestions that support the scaling up of this work. Ideally, the latter will be aligned with ongoing activities of the preferred Executing Entity, and the Executing Entity will be able to cofinance elements of this accordingly.

### **3. Objectives of assignment**

The Executing Entity will partner with SANBI and the project's Facilitating Agencies to develop the full project proposal for submission to the Adaptation Fund in June 2014. Once the project is approved, the Executing Entity will lead the SGF project for South Africa. In this regard, the Executing Entity will be responsible for overall project delivery.

This will include:

- Receiving all project funds from the NIE and being responsible for all further contracting and disbursement of these funds in accordance with agreed procurement and disbursement procedures
- Managing stringent financial and reporting processes, responding fully to the frameworks and guidelines provided by Adaptation Fund Board requirements
- Developing excellent working relationships with the Facilitating Agencies
- In collaboration with the Facilitating Agencies:

- Developing project proposal application and reporting forms
- Establishing project review mechanisms at both national and local levels
- Coordinating project review processes and compiling and presenting the necessary documentation to support these processes
- Designing and coordinating the learning component of the project, including ensuring that it is coherent and supportive of learning and capacity building processes within and between the project focal areas, and that learning is appropriately objective.
- Supporting processes to communicate and share insights from the project nationally and with the international community
- Providing leadership to activities to grow and sustain the SGF beyond the Adaptation Fund investment if this eventuates

#### **4. Main requirements during the design phase**

From April 2014, the Executing Entity will work with SANBI and the project's Facilitating Agencies to develop the full project proposal for submission to the Adaptation Fund in June 2014. This will include developing the detailed project concept, supporting project identification processes, and designing project review, reporting and learning mechanisms that will be applied once the project commences.

During this design phase, with the exception of pre-agreed hard costs, the Executing Entity will not be reimbursed for time spent on project preparation activities.

As indicated above, several activities will be undertaken in collaboration with the Facilitating Agencies and the Executing Entity will need to establish a careful balance so as to ensure overall project delivery, effectiveness and efficiencies while empowering local level responses and decision making.

#### **5. Deliverables and timeframes**

Processes to support detailed proposal development will commence immediately, with the full project proposal ready for submission at the end of June 2014. The period over which the service provider will act at project Executing Entity will be dependent on the Adaptation Fund approving the SGF project, and the contracting processes that will follow. At this stage, this is envisaged to be January 2015 – January 2019/2020 (depending on the final project design). As per all Adaptation Fund projects, the budget that is available for the core Executing Entity function is set at a cap of 9.5% of the total project value. The project value is currently just under \$ 2 million, but this could be subject to change.

## 6. Skills and competencies required

In order to fulfill this role, the service provider will require the following skills and competencies:

- Good track record managing and reporting on large donor projects, at least in the order of magnitude of the SGF project (\$2 million)
- Adequate internal financial management capabilities
- National footprint, and ability to play a meaningful role linking local level adaptation implementation experience with national, regional and international processes
- Good understanding of Climate Change Adaptation and development issues and an understanding of global climate finance issues
- Ability to align the programme of work with ongoing activities, and to cofinance the project accordingly
- Track record in grant management, including disbursement, monitoring and reporting
- Willingness to capture the insights and lessons of the NIE, and to share these nationally and internationally
- An interest in working with the NIE to grow the SGF from an Adaptation Fund project that focuses on two areas to a facility that can support local level adaptation across South Africa

## 7. Requirements for proposals and evaluation criteria

Service providers interested in this project should submit a concise proposal setting out their relevant competencies, and motivating why they would be ideally placed to partner with SANBI on this SGF project.

Evidence of excellent fiduciary competency and an understanding of the use of international fiduciary standards as adopted by the Adaptation Fund Board will be essential.

The proposal must include:

- Company profile
- Proposed approach and methodology
- Examples of relevant previous and ongoing work, with an explanation of how this relates to the required skills and competencies that are set out above
- An abbreviated CV for each project team member indicating their relevance to the project, skills profile and experience in carrying out a comparable assignment
- A description of current complementary activities in which the service provider is engaged and that could be aligned with and support the assignment, and that could leverage additional support for the project
- Track record in financial management of large project, and detailed description of the financial and procurement systems and procedures used by the implementer

Proposals will be evaluated by a sub-committee of the NIE Steering Committee as follows:

Criteria for measuring functionality	Weight
Qualifications, competencies and relevant experience of the service provider (skills profile of the organisation and project team, including relevant expertise and project management experience with small grant processes and in Climate Change Adaptation and climate finance both locally and internationally)	35
Current involvement in Climate Change Adaptation research, policy and/ or implementation, including ability to cofinance the programme of work and likely potential to leverage future benefits	30
Approach and methodology including innovation (how the project team will set up and manage the project, how it proposes to interface with stakeholders and beneficiaries, how learning will be captured and shared, and how project outputs will be used to leverage future benefits)	35
<b>TOTAL</b>	<b>100</b>

#### 8. Relevant documents

A copy of the NIE Investment Framework and the approved SGF project concept is available on request from [info.NIE@sanbi.org.za](mailto:info.NIE@sanbi.org.za). It should be noted that this project concept is indicative, and that the detailed design process could entail adjusting and amending many aspects of it in consultation with the anticipated Executing Entity and other partners.

#### 9. Contractual arrangements

A Memorandum of Understanding will be drawn up between SANBI and the service provider, setting out mutual commitments for the project development stage. Contractual arrangements that will apply should the full project be approved by the Adaptation Fund will not be the subject of this assignment, and will be agreed once the project is approved, in line with the requirements of the Adaptation Fund.

#### 10. Submission of expressions of interest

Expressions of interest must be submitted no later than 11:00 on 3 April 2014.

For further information, please contact Gigi Laidler by email ([g.laidler@sanbi.org.za](mailto:g.laidler@sanbi.org.za)) or by telephone (021 799 8766).