



LET'S RESPOND

A GUIDE TO INTEGRATING CLIMATE CHANGE RISKS
AND OPPORTUNITIES INTO MUNICIPAL PLANNING



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA



cooperative governance

Department:
Cooperative Governance
REPUBLIC OF SOUTH AFRICA

LET'S RESPOND

Guide to integrating climate change risks and opportunities into municipal planning

Published by

Department of Environmental Affairs, Department of Cooperative Governance, the South African Local Government Association in partnership with Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, on behalf of the German Federal Ministry of Environment, Nature Conservation and Nuclear Safety (BMU).

Developed by

Sustainable Energy Africa and Palmer Development Group.

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Department of Environmental Affairs
Department of Cooperative Government
Emfuleni Local Government
South African National Botanical Institute
Sustainable Energy Africa

South Africa, April 2012



On behalf of the German Government

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glossary of terms used

AQMP	Air Quality Management Plan
BRT	Bus Rapid Transit
CC	Climate Change
CCAP	Climate Change Adaptation Plan
CCP	Cities for Climate Protection
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CFL	compact fluorescent light bulb
CIP	Climate Information Portal
CSAG	Climate Science Analysis Group
CSIR	Centre for Scientific and Industrial Research
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
COP 17	17 th Conference of the Parties
CSAG	Climate Systems Analysis Group (at the University of Cape Town)
DANIDA	Danish International Development Assistance
DCOG	National department of Cooperative Governance
DEA	National Department of Environmental Affairs
DSM	Demand Side Management
EE	Energy efficiency
EPWP	Expanded Public Works Programme
GCM	Global Climate Models
GDP	Gross Domestic Product
GHG	Greenhouse gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit - GmbH
Gj	Gigajoule (10 ⁹ joules)
GWh	Gigawatt hours
HVAC	Heating, Ventilating and Air Conditioning
ICLEI	International Council for Local Environment Initiatives in 2003 became 'ICLEI – Local Governments for Sustainability' with a broadened mandate to address sustainability issues

IDP	Integrated Development Plan
IPCC	Intergovernmental Panel on Climate Change
ITP	Integrated Transport Plan
IWMP	Integrated Waste Management Plan
LPG	Liquefied petroleum gas
KPI	Key Performance Indicator
kWh	Kilowatt hour
LED	Light emitting diode
LED	Local Economic Development
MTEF	Medium Term Expenditure Framework
MW	Megawatt
NAMA	Nationally Appropriate Mitigation Action
NGO	Non-governmental organisation
RDP	Reconstruction and Development Programme
RRT	Rustenburg Rapid Transit
SALGA	South African Local Government Association
SANRAL	South African National Roads Agency Limited
SAPIA	South African Petroleum Industry Association
SARVA	South African Risk and Vulnerability Atlas
SDBIP	Service Delivery and Budget Implementation Plan
SDF	Spatial Development Framework
SFA	Strategic Focus Area
SMME	Small Medium & Micro Enterprise
SMT	Strategic Management Team
SWH	Solar water heater
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
WSDP	Water Services Development Plan
WWF	Worldwide fund for nature

preface

Water related infrastructure typically has a design life of 50 – 100 years: well into the era of severe climate change. Water shortage, flooding and water quality deterioration, with related deaths, disasters (and occasional opportunities) are all anticipated in different areas as climate change picks up pace. Today's development planning decisions will significantly affect the vulnerabilities experienced tomorrow.

Climate change plays itself out very differently at the local level, and within localities, requiring locally specific responses. National governments must increasingly look to their local spheres for response action. Science also emphasises the enormous uncertainty around how the changes in greenhouse gas (GHG) concentrations in the atmosphere will impact our weather and climate systems. While our knowledge base is growing all the time, planning conditions will be far more uncertain than in the past. We must learn along the way, making it extremely important to choose 'no regret' response options in order to avoid locking ourselves into systems that may end up increasing rather than reducing climate risk and vulnerability.

All scenarios show that reducing GHG emissions to curb potentially catastrophic climate change will cost us less than having to adapt to such a future. But this will require that every possible mitigation effort, in every corner of the globe, is undertaken: this is everybody's responsibility. Closely engaging with citizens and their built and living environment, local government is a cornerstone in climate response action.

Section 10.2.6 of the cabinet endorsed National Climate Change Response White Paper recognises the important role of provincial and local government in meeting the challenge of climate change. For local government it particularly identifies the areas of planning and urban development, municipal infrastructure and services, notably water, energy, waste demand management and local disaster response.

This intergovernmental initiative, involving the Department of Environmental Affairs, Cooperative Governance and the South African Local Government Association, with support from GIZ, aims to support local government to integrate climate response directly into the planning headquarters of municipalities – the Integrated Development Plan (IDP). This Guide is designed to take municipal leaders (elected and corporate) through the necessary steps towards climate responsive planning and provides a set of practical tools to support the process.

The **Let's Respond Guide comprises six sections**. The introduction outlines the phenomenon of climate change and climate variability and emphasises, from both a regulatory and developmental perspective, why it is critical that local government responds. Following this comes five 'phases' that align closely with the phases of IDP planning: **Preparation** allocates responsibility to drive the integration process; **Analysis facilitates** the collation of climate change information (relating to climate and emissions); **Strategy** supports a participatory stakeholder planning exercise to develop a climate responsive municipal vision and objectives relating to the Strategic Focus Areas of the IDP; this is followed by more detailed, sector based **Projects** development and the process concludes with **Integration, Approval and Implementation**, which concludes with the approval of a climate responsive IDP, and a plan for implementation and community awareness. The toolkit provides a set of corresponding support tools which will assist municipal staff through the process.

This toolkit addresses municipal leaders and staff across the municipal development planning sector. South Africa has a wealth of experience in climate change response both within local government and in our national research institutions and organisations. This guide, and toolkit, was developed in consultation with these institutions and all spheres of government, and piloted in five municipalities across the country. A strong emphasis has been placed on the guide being dynamic and evidence based – that it should grow and change and improve through ongoing contributions from all who engage with it and as further information and data become available.

It also needs to be used. It is hoped that the emphasis on climate change responses that talk directly to sustainable development enhances its practicality. While the process requires some new focus, and effort, it aims to bring a new dimension into regular planning processes. Further, it is intended that the undertaking of the activities outlined should deepen awareness and understanding. The partners in this initiative would welcome any input that would enhance the use of the toolkit and will be looking to develop processes that support and sustain its rollout and the implementation of climate response action.



reference

The Mexico City Pact and Durban Adaptation Charter

Many cities and local governments, globally and locally, have taken the initiative on climate action and voiced their commitments through the signing of pacts or charters.

Local governments that sign the **Mexico City Pact** (launched during the World Mayors Summit on Climate in 2010) commit to the development of adaptation strategies and voluntary emissions reductions, according to their own resources and capacity to do so. They also commit to recording their progress against targets on the online Carbon Cities Climate Registry. This transparency facilitates access to international funding. 147¹ cities worldwide have signed this pact to date. Local signatories include the Cape Winelands District Municipality (Western Cape), City of Cape Town, City of Johannesburg, Dr. J.S. Moroka Local Municipality (Mpumalanga), eThekweni Municipality and Matlosana Local Municipality (North West).

More locally, the **Durban Adaptation Charter for Local Governments** was developed as an outcome of discussions led by SALGA (South African Local Governments Association) at The Local Government Convention on Climate Change at COP17. Signatories of this charter commit to mainstreaming adaptation in their development planning, through the production of vulnerability assessments and adaptation strategies that are aligned with mitigation measures, recognise local vulnerable communities and promotes sustainable economic development. A registry will be created, where municipal and city progress will be recorded.

1. <http://www.wmsc2010.org/list-of-cities/>

Climate change and municipal service delivery

South Africa's 278 municipalities play a vital role in addressing the country's social, economic and environmental needs. Local government is tasked with the provision of services in a sustainable and equitable manner; the facilitation of social and economic development and the promotion of a safe and healthy environment for all.

Climate change and variability* already have a direct impact on the ability of municipalities to meet these objectives. Extended dry seasons, increasing temperatures, extreme storms and sea level rise result in drought, crop failure, livestock death, damage to infrastructure, runaway fires and will further entrench poverty with the increase of vector-borne disease, disabling of existing livelihoods and damage to household assets.

Municipalities need to plan and respond appropriately. The challenge is our inability to predict with certainty the future conditions to which adaptation is needed. In addition, skills and capacity are limited at the local level and there are pressing short-term needs drawing on limited municipal funds. **This guide works with these difficulties and presents an approach that will support appropriate development and long-term adaptive capacity. Many municipalities are already responding to climate variability, such as coping with storm events, or droughts, and the approach of this guide is to draw on and further develop this experience.**

This guide will assist local government to identify communities and sectors most at risk from the impacts of **climate variability*** and changing climate and explore opportunities. The information provided aims to assist in the prioritisation of local government response actions. The process supports integrating these priorities into the IDP and related municipal plans (Sector Plans and the Spatial Development Framework).

Local Government Responding: The Let's Respond Guide and Toolkit approach

Integration of **climate change*** response into a municipal IDP is NOT a new planning or reporting requirement. It simply offers a means of identifying and prioritising actions to meet new challenges and adjusting existing planning and projects to changing **weather*** conditions and economic constraints around fossil fuels.

Climate* response requires that we try to reduce the cause of the problem, while also responding to the impacts that are already underway. These responses are known as mitigation and adaptation:

Mitigation efforts focus on systematically reducing vulnerabilities, including reducing greenhouse gas emissions, through initiatives related to energy efficiency and renewable energy use.

Adaptation efforts attempt to build **resilience*** to the impacts and effects of **climate variability*** and a changing climate within our communities.

As emphasised in South Africa's National Climate Change Response Strategy, BOTH of these responses are important. Often, actions taken to mitigate **climate change*** will also prove to have an adaptive **impact***, for example, building better housing, with ceilings and solar water heaters, will mean that residents use less electricity; it will also result in better levels of health and welfare, boosting individuals' **resilience*** to climate hazards or extreme events. While a number of short term actions may be taken to enhance coping, adaptation is going to require serious, **longer-term** planning to reduce risks to climate change.

The planning approach in the guide, in response to an uncertain future and immediate development needs, encourages municipalities to:

- Align **climate*** response with existing **climate*** and development challenges and deepen existing response capacity.

This means that municipalities should value and retain data and knowledge of climate within the organisation and ensure this is brought into new development considerations.

- Develop links with research institutions and community bodies to improve the flow of information, in particular early warning systems, such as information about potential drought.
- Incorporate climate change information into sector planning and plan for a wide range of longer term changes in average conditions (rainfall and temperature).
- Improve cross-sector integration of management and development planning. As mitigation and adaptation efforts fall under the responsibility of a range of departments, some form of institutional coordination is important.
- Move harder and faster on core development objectives, which will provide immediate benefits and long-term climate response benefits.

The guide and supporting toolkit are designed to assist development planners within the local government sphere, but may also be of use at regional or national levels. It should ideally be used during IDP development, but can also be used during the process of reviewing IDPs and alongside departmental or sector plan development.

The guide provides a simple, five phase process, aligned with the IDP planning approaches. Each phase includes steps that will ensure integration of climate response strategy into municipal systems and structures. The steps are accompanied by support tools or resources, found in the toolkit, which will facilitate each process.

* CLARIFICATION OF TERMS	
Climate vs. weather	Weather is the day-to-day change of the atmosphere, e.g. it is sunny/rainy/windy today. Climate is the average weather that an area experiences over a long time , e.g. a place has a tropical (warm and wet) climate, or a Mediterranean climate (cold, wet winters and warm, dry summers), etc.
Climate change	Climate change refers to the long-term shift in weather patterns. It may involve a change in the average weather patterns (e.g. more or less rainfall) or in the frequency and/or intensity of events (e.g. more or fewer storms). 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.
Climate variability	Climate variability refers to the way climate variables, such as temperature and rainfall, depart from the average state, either above or below average, in an area without changing the long-term average, e.g. a certain area might have an average summer temperature of 21°C, but daily temperatures could range from, say, 15-30°C.
Resilience	A resilient system is one that is better able to cope with change and can recover quickly. Building resilience looks to making systems, places and people more robust, both in being able to 'bounce back' after a stress, but also in being able to 'bounce forward' – adapting to long term changes in trends.
Climate Change Impacts	Climate change impacts are the consequences of climate change on a human or natural system. For example, climate change could cause less rain in an area, but climate change impacts in this area, as a result, would involve droughts, crop failure, famine, etc.
Vulnerability	Vulnerability is the degree to which a system is susceptible to, and unable to respond to, impacts of climate change. For example, a community living on a flood plain will be more vulnerable to flooding than a community living on a hillside. Likewise, a community with a good stormwater drainage system and disaster response unit will be less vulnerable to flooding than a community with no stormwater drainage system or disaster response plan.

Climate change is happening and is one of the major challenges facing the world



- The **average temperature of the earth's surface** has risen by 0.74 degrees Celsius (°C) since the late 1800s. It is expected to increase by another 1.8°C to 4°C by the year 2100 should the necessary action not be taken (IPCC 4th Assessment Report, 2007).
- The main reason for **the increasing temperature** is 150 years of industrialisation: the burning of ever-greater quantities of oil, petrol, and coal, the generation of larger and larger amounts of landfill waste, the cutting of forests, and the practice of certain farming methods. These activities have increased the amount of greenhouse gases in the atmosphere.
- The **current warming trend is expected to cause the extinction** of many plant and animal species in the next 100 years. Human beings are likely to face mounting difficulties. Recent severe storms, floods and droughts, for example, appear to show that computer models predicting more frequent extreme weather events are correct.
- The **changes happening to temperatures, rainfall and climate** are broadly predicted to get more and more severe, with impacts that include drought, water scarcity, extreme weather events and altered seasons.
- **Climate change is a complicated, global problem**, linked to difficult issues such as poverty, economic development and population growth. Responding to it is not easy but ignoring it will be even harder. Fortunately, there is much that can be done to limit the degree of climate change and to adapt to its impacts. In some instance climate change may even open up new economic opportunities.
- The United Nations Framework Convention on Climate Change (**UNFCCC**) is an **international environmental treaty** which aims to stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous levels of climate change. UNFCCC has 194 parties. Legally binding GHG 'limits' or reduction obligations have been set through the Kyoto Protocol (an update to the treaty).
- South Africa hosted the 17th Conference of the Parties to the UNFCCC (COP 17) in 2011. Here the South African COP Presidency was able to establish the Durban Platform which agreed that a new universally legally binding treaty to cut carbon emissions will be in place by 2015, and come into effect by 2020. This treaty would involve both the developed and developing nations. It also established a new commitment period for the Kyoto Protocol and launched the Green Climate Fund.

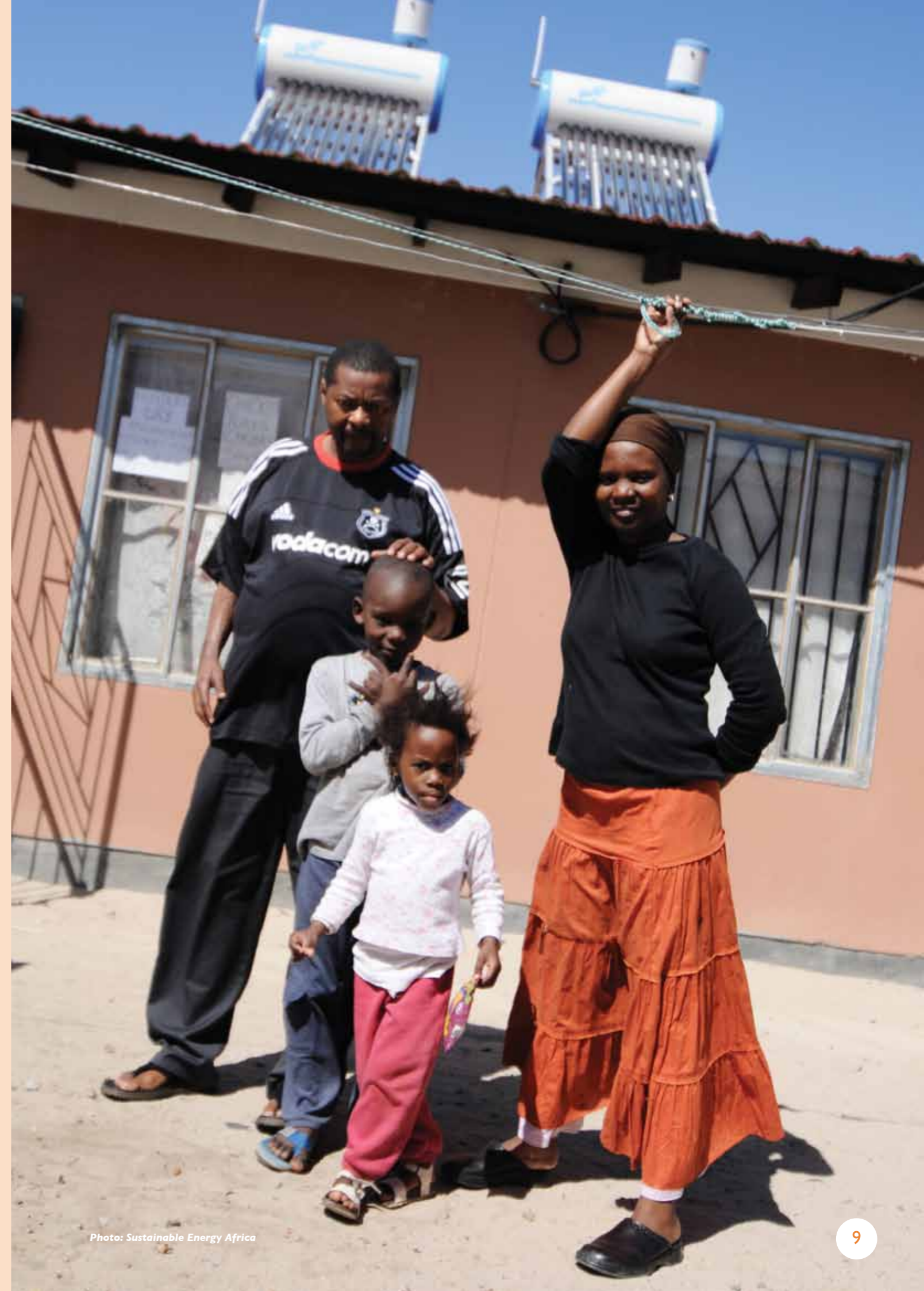
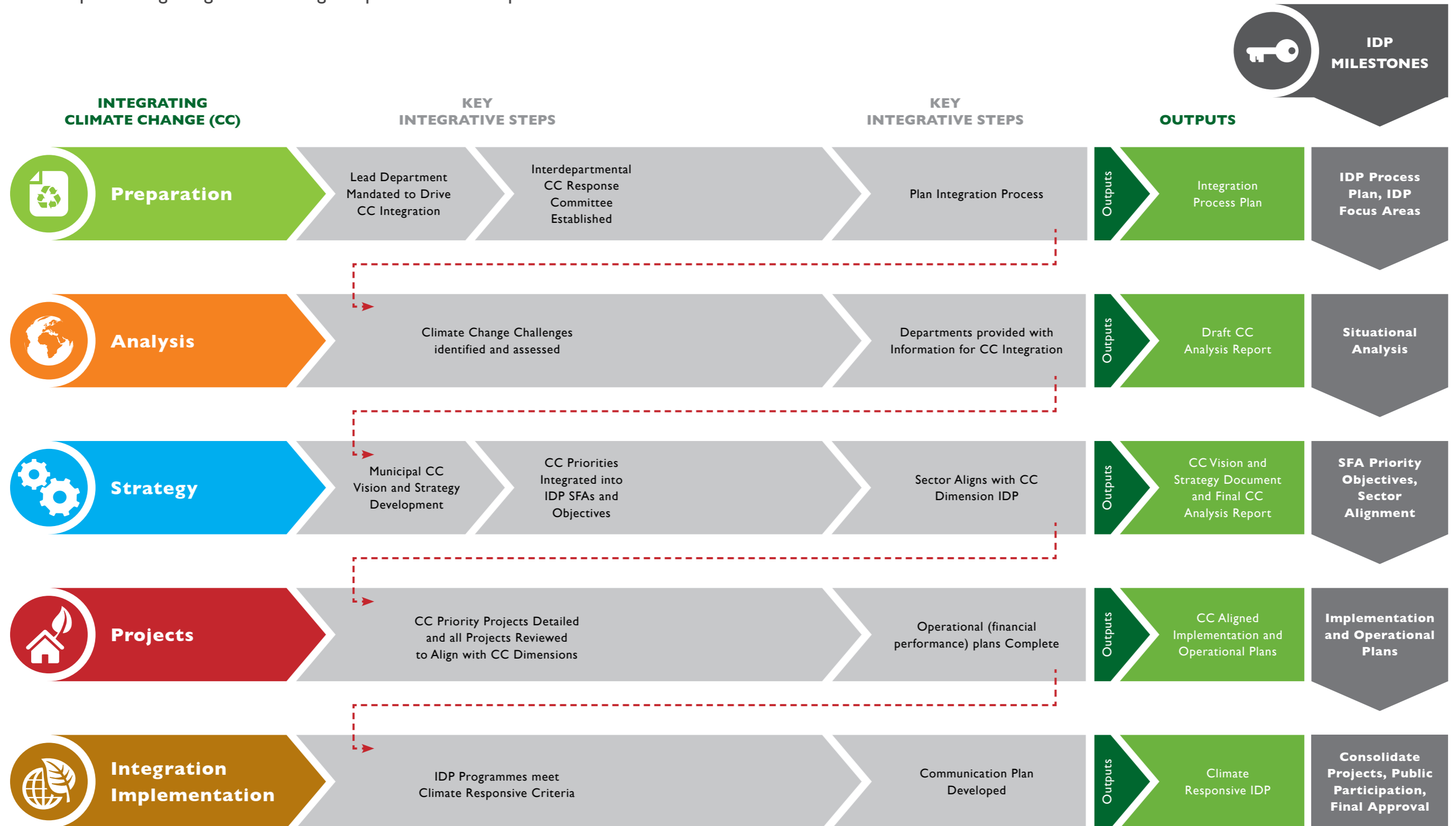


Photo: Sustainable Energy Africa

Let's Respond: Integrating climate change response into Municipal IDPs

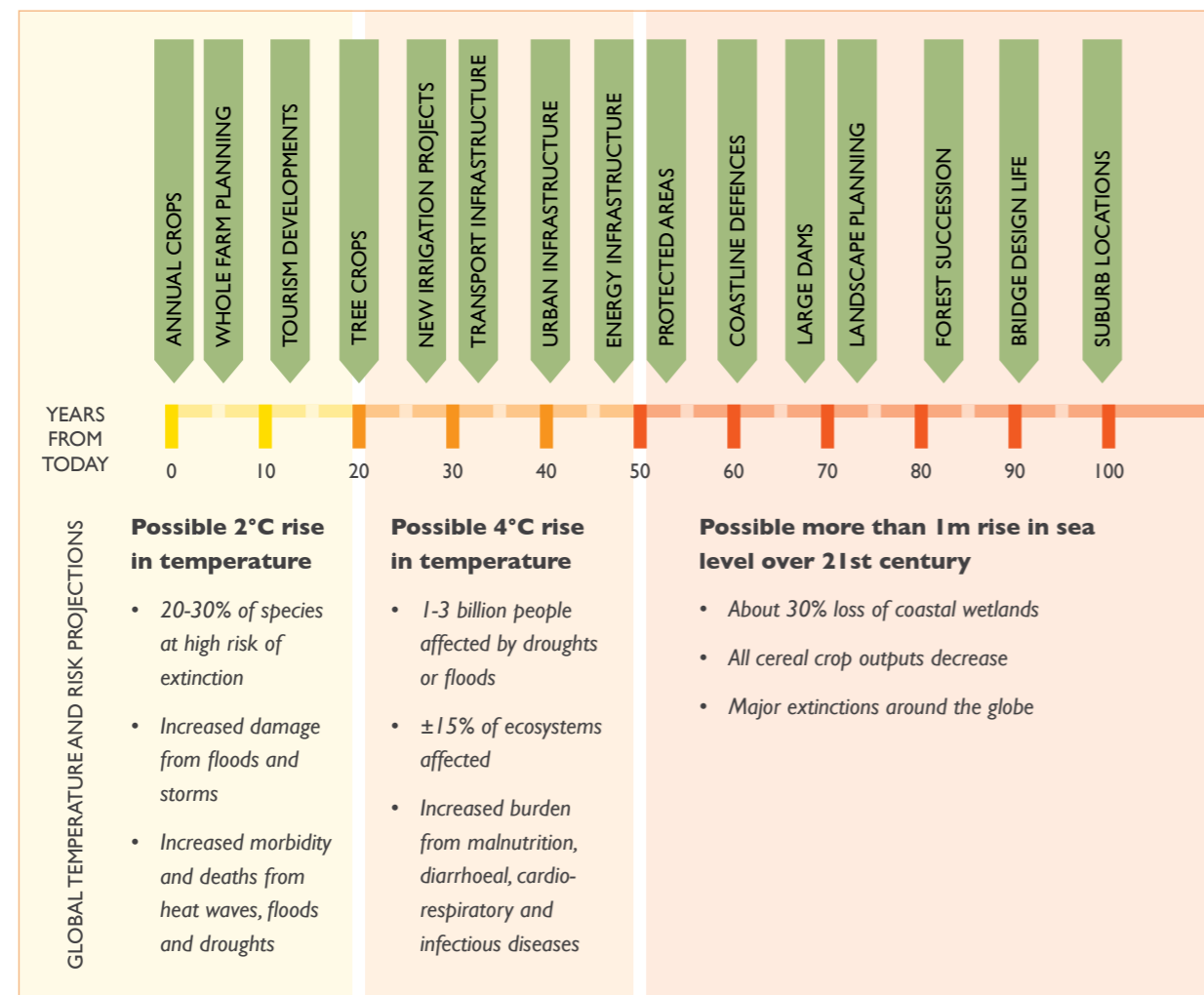


Planning horizons – today’s decisions shape the future

Planning decisions taken today, such as the design of water supply infrastructure or location of a new suburb, shape our communities into the future. Integrating climate change into existing policies and plans is considered the most effective way to respond to climate change. This approach builds increasing flexibility into planning decisions and helps to avoid ‘lock in’ to systems or infrastructure not suitable to future climate conditions.



Photo: Sustainable Energy Africa



Benefits and opportunities in responding to climate change

- Energy efficiency improves economic competitiveness
- Business opportunities may arise through new, ‘green’ industries such as renewable energy generation
- Public transport reduces pollution and congestion; improved mobility of people stimulates economic activity
- Improved building quality, particularly in low income housing, greatly improves health and quality of life
- Replenishing the natural resource base through rebuilding wetlands, planting trees, clearing alien vegetation creates jobs and enhances important environmental services such as water, flood protection, fish and plant stocks
- Urban greening absorbs carbon and provides shade and beauty.

Not responding to climate change will cost more than the response effort

- In 2007/08, floods in the Western Cape Province cost the government in excess of R1 billion each year; road repairs resulting from extreme weather events used up almost 97% of the total transport budget of the Province in 2007. Losses of R2,5 billion were incurred (damage to property and roads) through eight extreme weather events in the Eden District alone, between 2003 and 2008. The Province estimates that damages from unmitigated climate change could range between 5% and 20% of GDP annually by 2100².
- The **Stern Review on the Economics of Climate Change** for the British government (2006) concluded that the benefit of strong, early action on climate change far outweighs the costs of not acting. The Review estimates that, without action, the overall costs of climate change will be equivalent to losing at least 5% of global GDP (gross domestic product) each year, now and forever (moving up to 20% with a wider range of risks and impacts). The Review proposes that 1% of GDP per annum is required to be invested in order to avoid the worst effects of climate change.

2. Provincial presentation based on research undertaken by the DiMP (Disaster Mitigation for Sustainable Development Programme) (2007-8).

Preparation

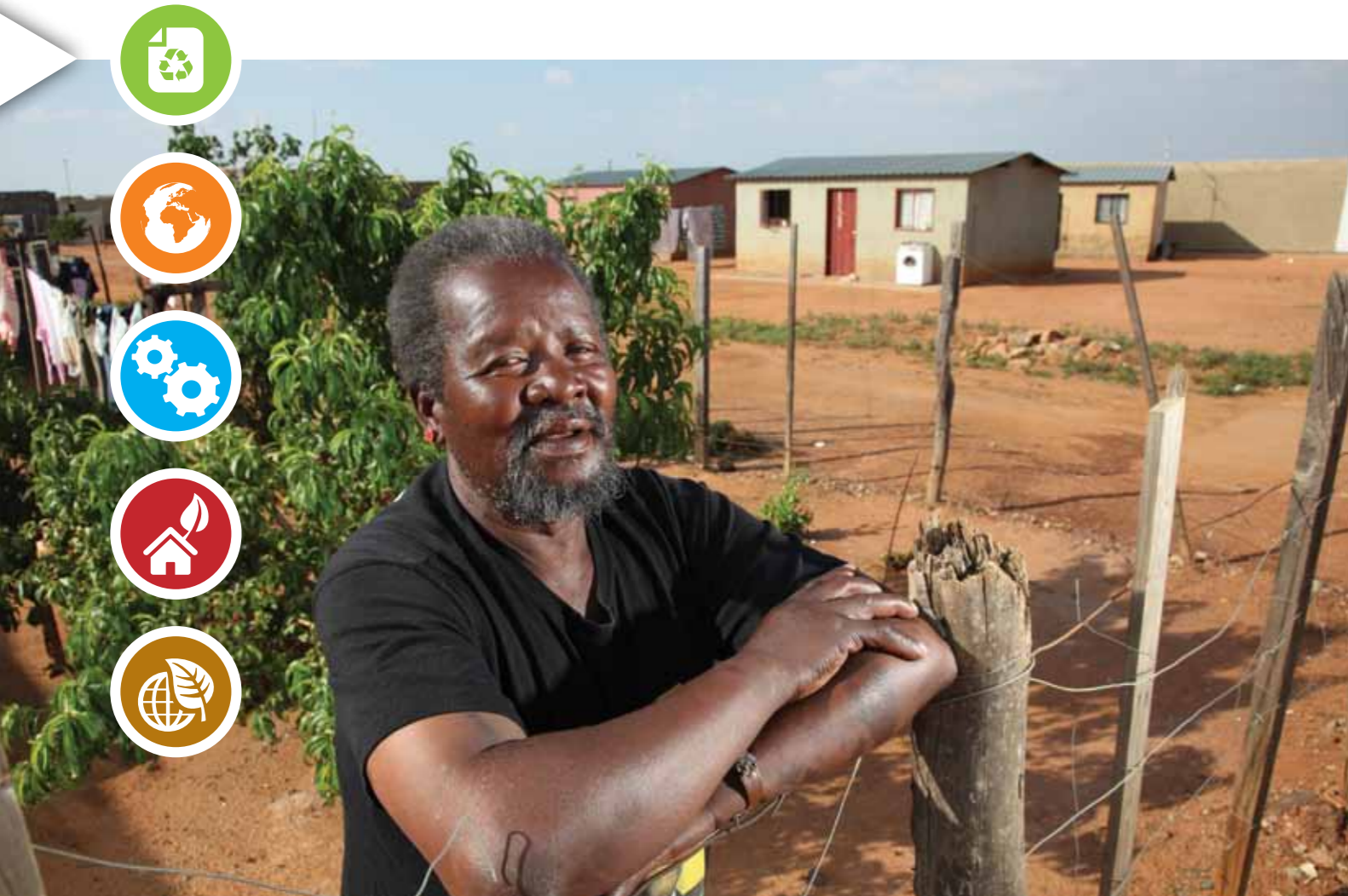


Photo: Sustainable Energy Africa

This phase lays the foundations for ensuring the process is mainstreamed into the IDP. It requires council resolution and leadership, resources and a plan to undertake the process.

Objective	Municipal commitment to integrating a climate change response into IDP planning processes.	Tool 1: Climate Response Integration Process Planning Checklist and Timeframe
Timeframe	Approximately four weeks	Tool 2: Climate Change and Municipal Planning Presentation (PPT and speaker notes)
When to use	This phase should align with the preparation phase of the IDP, usually undertaken between August and September. Where this is not possible, consider alternative entry points, such as the IDP mid-term evaluations or annual reviews.	Tool 3: Directory of Key Climate Change Resources Tool 4: Determining Local Climate Change Impacts Support Sheet Tool 5: Responding to Local Climate Change Impacts Support Sheet
Expected outcome	A council resolution, process plan and institutional arrangements in place for integrating climate change responses into IDP planning.	Tool 12: Sector Climate Change Response Options

Step 1 : Identify leadership and establish institutional structures

Municipal climate change response has been identified in national policy for inclusion into IDP planning. The IDP office must ensure that a suitable line department is tasked to drive this work and represent climate change within the IDP drafting team. A first step is to get the council to endorse the integration of climate change response into the IDP process. This should be followed by the municipal manager delegating the responsibility to drive this process to a suitable **line department**.

The mandated department, through a 'champion' official will:

- drive the climate change planning process;
- gather necessary information and liaise with other departments and institutions where necessary;
- liaise with the IDP Office on integration of the process into IDP review timeframes;
- participate on the IDP drafting team; and
- establish a steering committee from a cross sector of relevant departments to address the issues or participate in an existing committee that addresses similar issues.



Preparation



TIP:

The lead department should have key responsibilities relating to climate change response, the capacity to undertake the work and a passion for the issue. Departments to consider would include the Environment, Energy, Sustainability, and Infrastructure departments.

Step 2 : Familiarise yourself with this Guide and the tools in the Toolkit

As an official mandated to take this work forward, take time to read through the guide and related documents. Consider how the guide and tools support the objective of the process as a whole. The guide provides an introduction to climate change and its anticipated impacts for South Africa; more detail is contained within the tools:

Tool 2: Climate Change and Municipal Planning Presentation (PPT and speaker notes) for an overview of climate change and the role of local government;

Tool 3: Directory of Key Climate Change Resources will direct you to important additional reading on the subject, including national climate change policy.

The diagram at the end of this phase: 'What a climate responsive IDP might look like', will give you an idea of what the final outcome of this process may look like.

This process was piloted within five municipalities across the country; you may also wish to browse through the climate response reports coming out of this exercise for an example of how this process was undertaken in other municipalities in South Africa. These **Pilot Studies** reports are available on the **accompanying CD**.

Step 3 : Set up a Climate Change committee

Climate change response cuts across a number of line departments and requires a coordinating, or steering, committee to coordinate the work. Consider the sectors in **Tool 12: Sector Climate Change Response Options** to help you identify departments that need to be part of the committee. Get the municipal manager to endorse and mandate the participation of these departments in the climate response committee.

Step 4 : Plan the integration process

Using this guide, identify the key activities you need to undertake to integrate climate change into the IDP. In a meeting of the Climate Change committee set out what you plan to do, noting time frames, responsible persons and resources required. **Tool 1: Climate Response Integration Process Planning Checklist and Timeframe** will assist you.

Liaise with the IDP Office to ensure that the timeline for the process fits into the next IDP planning or review cycle. Use the timeline in the guide to identify key dates for completion of milestones, including the internal and external stakeholder workshops to take place in the next phase.

PREPARATION: Deliverables checklist

Line department mandated to lead climate response IDP integration and participate in the IDP drafting team

Inter-departmental climate change response committee established

Process plan with key milestones and associated timeframe prepared

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An illustrative example of Climate Change Responsive IDP outline

IDP Component

A. Executive Summary:

This overview of the document would identify climate change as a cross-cutting IDP development "dimension" and include the climate change dimensions incorporated.

B. Situational Analysis (Status Quo)

This report needs to include an assessment of the climate change challenge. This will draw on the **Climate Change Analysis Report** developed in the integration process. The information from internal and external stakeholder session must also be drawn in here.

The climate change input will cover:

- the current climate experience within the municipality
- likely local climate changes arising from global warming, climate variability and underlying situation and context, such as poor planning and infrastructure maintenance
- the resulting impacts
- key vulnerabilities and 'hotspots'
- an overview of GHG emissions within the municipal area and GHG emissions/capital (identifying degree of responsibility)
- key GHG emissions sectors
- a summary of the Priority Issues in relation to climate change

Climate change is cross cutting in nature and climate response will require the engagement of all municipal sectors. It is recommended that climate change be considered and incorporated into IDP planning as a cross-cutting development "dimension", similar to issues such as poverty or HIV/AIDS, rather than being considered a sub-category of Environment.

C. Development Strategies

The long term Municipal goals: Vision, Mission, Strategic Objectives and Strategies.

Vision and mission

This is a broad, aspirational statement, usually already set, and standing for a longish period. Common aspects, such as smart, vibrant, dignified, people-centred, sustainable, efficient resource mobilisation, are all sympathetic to climate response dimensions. An aspect of the municipal climate response vision, developed in the Climate Change Response Strategy may be included here.

Strategic Objectives (or Strategic Focus Areas – SFAs) and Strategies

Strategic Objectives flow from the Municipal Growth and Development Vision and are established by council. While these will be specific to each municipality, they generally cover the thematic areas in the table below. Climate change is a phenomenon that requires a cross-cutting response. A climate responsive IDP will build climate change response objectives, developed in the **Climate Response Vision and Strategy** stakeholder workshop, into each Strategic Objective (or SFAs/ Priority Objective) of the IDP and into all areas of the municipality's overarching development strategies.

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An outline of what climate change responsive IDP development strategies might look like:

Focus Area	'climate responsive' Municipal Strategic Focus Area (SFA)	Climate Response Priority Objectives
Economy	Diverse, efficient and 'green' economy	<ul style="list-style-type: none"> Value-add processing to local agriculture Efficient public lighting programme Renewable energy development
Infrastructure	Sustainable and resilient infrastructure and services	<ul style="list-style-type: none"> Storm water management Public transport investment to improve mobility Sustainable water supply Water demand reduction Universal electrification
Social	Resilient communities with access to livelihoods, basic services, and climate safe locations	<ul style="list-style-type: none"> Diversify livelihoods Development of quality low income housing stock Disaster risk reduction in informal, vulnerable settlements Additional capacity to health care facilities
Environment	Conserve natural resources	<ul style="list-style-type: none"> Rehabilitate wetland and river courses Biodiversity protection (including alien clearance) Pollution reduction programme
Governance	Efficient and responsive local government	<ul style="list-style-type: none"> Climate change integrated into municipal organogram Develop key databases Build relationships with climate knowledge institutions

The Organisational Performance Management System component of the IDP would then ensure that appropriate Key Performance Indicators, and associated targets and baselines, are assigned to each objective.

D. Spatial Analysis

Climate change needs to be brought into the high level Spatial Development Framework. This would detail areas, and related communities, vulnerable to the impacts of climate change and extreme weather events. It would also need to show consideration of the need to enhance natural climate buffers and improve resource efficiency, such as through healthy densification processes and spatial development supportive of public transport travel modes.

E. Implementation Plan (5-3 year; updated annually)

F: Annual Operational Plan (SDBIP) (Reviewed annually)

G: Financial Strategy (Reviewed annually)

H: Organisation Performance Management System (Reviewed annually)

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The climate response coordinating committee and IDP drafting team will have brought the climate response objective to the attention of all sectors and related departments. Sector strategies must be aligned accordingly, contributing to the Implementation Plan. Departments will provide technical detail to new or adjusted IDP projects (responsibility, cost, timeframe, baseline and performance measure) forming the Annual Operational Plan. This information all feeds into the Implementation and Annual Operational Plans with associated financial and performance management systems for the IDP.

An example of how climate responsive aspects of IDP Focus Areas are taken down into the Implementation Plans (down to project level), Financial Strategy and Organisational Performance Management System.

Sector or department	Priority SFA objective and related climate change response project	Budget Resp / dept	Measure: KPI	Target	Baseline
Water	INFR: Sustainable and resilient infrastructure and services – water demand management Rollout of efficient water devices	X	INFR: percentage reduction in water consumption	100 000 low flow showerheads by 01/07/13	-
Environment	ENV: Conserve natural resources Wetland rehabilitation programme	X	ENV: percentage compliance with xx standard	Xx wetland rehabilitation by 30/03/13	-
	ECON: Diversify, 'green economy' – promote RE ENV: Conserve natural resources- pollution reduction Solar water heater rollout programme	X	ECON: measurable increase in renewable energy business and uptake ENV: measurable decrease in local and global air pollution	50 000 SWH on mid-high income households by end 2013	-

J: Annexures

This section will bring in all applicable Sector Plans. Each sector will have been engaged through the Climate Response process and plans should have been updated to bring in the new climate response goals of the municipalities.



Photo taken by Cedric Nunn



Phase I: Analysis

Climate change information gathering – an assessment of the problem

A picture of climate and environment and related challenges is developed and documented in this phase. Available information on potential climate impacts is researched and the related problems assessed. This information will form the basis of the stakeholder engagement process in Phase 2.

Objective	Develop an understanding of the climate change challenge; ensure information on the climate change dimension of the IDP planning process is given to sectors.	Tool 2: Climate Change and Municipal Planning Presentation (PPT and speaker notes)
Timeframe	Approximately 4-6 weeks	Tool 3: Directory of Key Climate Change Resources
When to use	This work may begin as soon as you receive a mandate to drive this work. The phase aligns with Phase 2: Analysis of the IDP planning process.	Tool 4: Determining Local Climate Change Impacts Support Sheet
Expected outcome	Knowledge developed on local climate change impacts and GHG emissions responsibilities in preparation for planning exercise	Tool 5: Responding to Local Climate Change Impacts Support Sheet
		Tool 6: Introducing Climate Information Web Portals
		Tool 7: CSAG Local Climate Report Example
		Tool 8: Municipal GHG Emissions Calculator and Electricity Sector Efficiency Planning Tool
		Tool 9: GHG Emissions and Energy Development Analysis Table
		Tool 10: Climate Change Analysis Report Template

Step I : Research likely climate change projections for your area.

Scientists emphasise that it is impossible to predict future climate, particularly at a local area scale. However, some understanding of the kind of impacts that may happen will help you to develop a sense of the kind of response capacity you need to build into your municipal plans. Read the summary overview of the major climate trends projected for South Africa in the insert below: **Future climate over Southern Africa**. Note the likely impacts for your region. These broad brush-strokes are a sufficient base from which to continue the climate response integration process in this guide.

NOTE: South Africa has well developed information and a database on local climate variations and down-scaled information on climate across the country. Detailed data on past climate and future projections can be obtained from the Climate Science Analysis Group (CSAG) at the University of Cape Town. Tool 7: CSAG Local Climate Report Example shows the kind of climate report you can get here. Tool 6: Introducing Climate Information Web Portals provides an introduction to CSAG's Climate Information Portal (CIP), which houses this information and has contact details for CSAG.





NOTE - continued: *The Future Climate over Southern Africa reference box that follows is from the work of Francois Engelbrecht and Willem Landman in the South African Risk and Vulnerability Atlas. The SARVA portal aims to become a site of spatial data/information on climate projections.*

Further Additional Value Steps include:

- Check for **existing local studies**. Your province, or a city nearby, may have done a climate change study; local universities, research institutes, NGOs, or government departments may have undertaken work in this area. Key studies done to date in South Africa are included in **Tool 3: Directory of Key Climate Change Resources**.
- Check the **South African Risk and Vulnerability Atlas**, CSIR, for updates: www.rvatlas.org.za. This is the portal through which up-to-date information to support climate response strategy development will be provided by government.
- Climate Information Portals: The **Climate Information Portal (CIP)** has been developed by the Climate Science Analysis Group (CSAG) at the University of Cape Town and houses the only down scaled information on climate trends (precipitation and temperature) in South Africa, using local weather station data and drawing on a variety of scientific models. An introduction to this is found in **Tool 6: Introducing Climate Information Web Portals**, which also introduces the World Bank's **Climate Change Knowledge Portal**, useful for more regional scale information (<http://climateknowledgeportal.worldbank.org>).

Step 2 : Do a Greenhouse gas (GHG) emissions scan.

Understanding what sectors contribute to global warming in your municipality will enable you to support national efforts to meet emissions reduction targets (and international commitments) and explore green economic opportunities. Follow the method notes in **Tool 8: Municipal GHG Emissions Calculator and Electricity Sector Efficiency Planning Tool** to conduct a GHG emissions scan for your municipality. This will provide you with a figure of how much carbon dioxide equivalent is produced in your municipality and indicate which sectors are responsible for these. Document all work done and develop a readily accessible system of storing the information.

If you are unable to collect the data required to do the scan, move on to Step 3.



TIP:

Although data can be extremely hard to gather, it is increasingly important for local government to manage energy and GHG emissions (mitigation) and you are encouraged to develop this capacity. Obtaining this information should be prioritised as an action in the internal workshop coming up.

Step 3 : Hold an internal workshop to introduce the climate change IDP planning dimension

With the IDP Office, call an internal workshop, or meeting, with relevant departments to introduce the climate change IDP planning dimension. This meeting should cover:

- a. the legal and policy framework for local government to include the climate change dimension into IDP planning
- b. the process underway to integrate climate response planning and what their role will be. **Tool 4: Determining Local Climate Change Impacts Support Sheet** and **Tool 5: Responding to Local Climate Change Impacts Support Sheet**

will provide departments with an idea of what they will need to bring into their own sector and operational plans in order to support the climate change dimension of the IDP.

c. an overview of the research findings on climate change and impacts and challenges for the municipality.

This is an important opportunity to develop support for the process, as well as to get important institutional information, such as energy or rainfall data to contribute to your analysis efforts. Use **Tool 2: Climate Change and Municipal Planning Presentation (PPT and speaker notes)**, with your local information included, to guide the session.

Step 4 : Develop a Draft Climate Change Analysis Report for inclusion in IDP Situational Analysis Report

Set out the information gathered in the steps above in a short report which can be included into the Municipal Situational Analysis Review. **Tool 10: Climate Change Analysis Report Template** provides an overview of the kind of format and information that should be included. This will require:

- Reviewing the current climate and environment and related challenges facing the municipality. This will help to provide a context in which changing climate can be considered.
- Identify and assess key vulnerabilities to changes in climate and climate variability (see tip box below)
- Noting the likely changes in climate (drawing on a CSAG report or your own research)
- Analysis of the likely impacts associated with the changing climate conditions. **Tool 4: Determining Local Climate Change Impacts Support Sheet** will assist.
- Analysis of the results of your GHG emissions scan and/or read through **Tool 9: GHG Emissions and Energy Development Analysis Table**. This tool has information based on 'typical' energy and emissions profiles of cities and towns in South Africa and will provide you with the information to develop a picture of the key energy and emissions issues facing your municipality.

NOTE : this analysis MUST include a spatial dimension.

Drafting of this report will prepare you for Phase 2: Strategy, in which you will present key climate change impacts and emissions issues to internal and external stakeholders for discussion and consideration of municipal risks and vulnerabilities. This process will help to identify and confirm impacts, and also develop an understanding of municipal risks and vulnerabilities in a context of climate change. Outcomes of this discussion must be included into your final Climate Change Analysis Report.

Remember to draw on your Climate Change Analysis Report when preparing presentations for meetings or workshops (see **Tool 2: Climate Change and Municipal Planning Presentation (PPT and speaker notes)**).



TIP:

Undertaking a Vulnerability Assessment and detailed Adaptation Strategy

A vulnerability assessment is the foundation for the construction of any adaptation strategy. Vulnerability varies across communities, sectors and spatial areas and **MUST** be taken into consideration within each IDP Priority of Focus Area.

An assessment will aim to find out who is vulnerable to what. It is important to draw on the experience within the affected sectors or communities and a workshop session is the best way to do this. Such a session would look to identify and establish:

- a. the existing stressors (economic, social, environmental) and climate conditions (climate variables and extreme weather events) affecting the sector or community
- b. are there any measures already in place to address these? Are these working?
- c. consider trends and changes likely to have an impact in the future: for example, changes in local economy, population size, political environment.
- d. given this context, how might projected changes in climate conditions affect the sector/ community; are there components of the sector more vulnerable than others?
- e. who are the most vulnerable groups within the municipality? Where are they located?
- f. What are the major climate hazards they are subjected to?
- g. What aspects of livelihoods might be threatened because of changing climate conditions?

For further detail and guidance on developing a full Adaptation Strategy in your municipality explore the existing strategies listed in the Resources Tool and the guide **Adapting South African Cities and Towns: a local government guide to climate change adaptation planning** by Dr Gina Ziervogel and Nadine Methner for Sustainable Energy Africa: www.cityenergy.org.za

PHASE I: ANALYSIS: Deliverables checklist

- Likely climate change researched and related impacts understood
- GHG emissions and energy issues researched and understood
- Draft local Climate Change Analysis Report completed
- Internal workshop with relevant departments

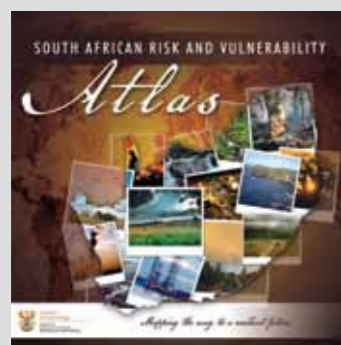
PHASE I: ANALYSIS: Additional value:

- Key local and national studies read
- GHG scan undertaken





reference



Future climate over Southern Africa

This climate projection summary is derived from the **South African Risk and Vulnerability Atlas and South Africa's Second National Communications under the United Nations Framework Convention on Climate Change**. The Atlas project is a flagship science-into-policy initiative of the Department of Science and Technology's Global Change Grand Challenge. It aims to support improved planning and decision making through up to date information for key sectors in the areas of risk and vulnerability. A full copy of the Atlas is available for download on: www.rvatlas.org. South Africa's Second National Communications in accordance with Article 12 of the United Nations Framework Convention on Climate Change

reports on the substantial advances in the national understanding of climate change issues, trends and projections (since the first National Communications) aiming to better inform climate related policy development across all 3 spheres of government. A full copy of the 2nd National Communications is available for download on: www.environment.gov.za

The science of climate projection

Observed trends in the global climate reveal that shifts in climate regimes have occurred, along with an increase in the frequency of severe weather events. Exactly what will happen to climate in the future is filled with uncertainty. This can be confusing and challenging for decision-makers and planners. Models (known as global circulation models), that can support detailed projections, or scenario assemblages, about future climate can be prohibitively costly to run. Scientists also feel that not enough is known about the role of natural variability in the global climate and the implications of downscaling global projections over Africa are not fully understood.

Another important variable making uncertainty worse is that nobody knows what the future rate of increase in GHG concentrations will be: will a global climate deal succeed and emissions come down to what is 'required by science' for stabilising climate change, or will the current trend of rising carbon emission continue unabated? This is a political, not a scientific issue. However, it will impact severely on the science.

South Africa has leading scientists working in the field of climate projection. A large body of climate change projections is available, obtained from both statistical and dynamic downscaling procedures – via the **Weather and Climate portal of the South African Risk and Vulnerability Atlas (SARVA)**, and other electronic portals, one of which is the **Climate Information Portal (CIP)** of the Climate Science Analysis Group (CSAG) of the University of Cape Town.

The regional climate projection

The SARVA and 2nd National Communication, presenting only a single model outcome (50th percentile in terms of risk and degree of likelihood), suggest the following:

Temperature projections: All of Africa is projected to warm during the 21st century, with the warming very likely to be greater than the global annual mean warming – throughout the continent and in all seasons. Drier, subtropical regions are projected to warm more than the moister tropics. Observed temperature trends indicate that change along these lines is already occurring.

The projected changes for the period 2070-2100:

- more than 3° Celsius median increase over the central and northern interior of South Africa.
- Over coastal regions, about 2° Celsius increase.
- Median increase in excess of 4° Celsius over central South Africa during autumn and winter.

Note: 75 percentile temperatures show somewhat larger; the 25th somewhat smaller; but trends remain the same.

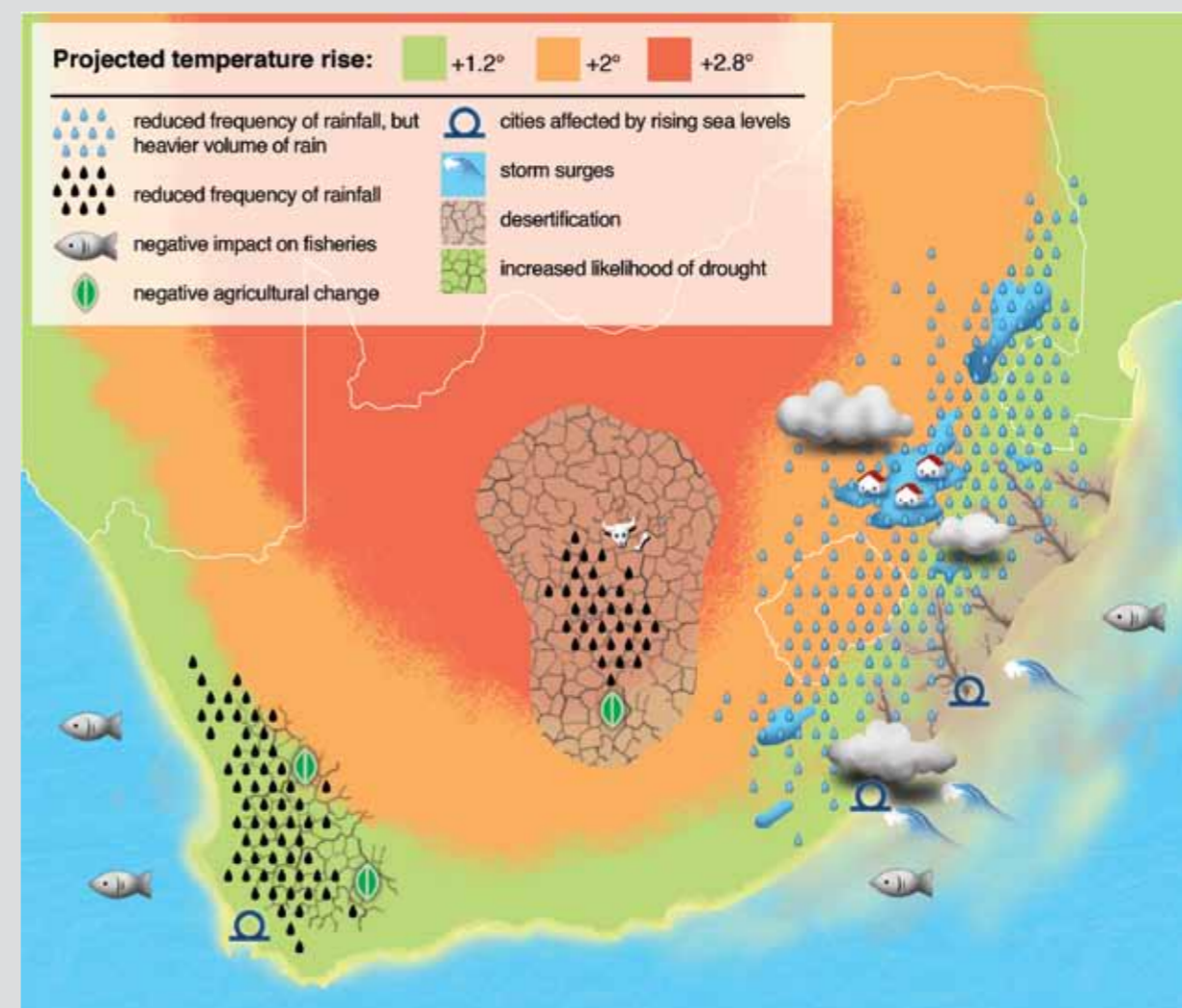


reference

Regional rainfall projections: Rainfall change is far harder to define and locate spatially than temperature. The indications are that rainfall is likely to decrease over the winter rainfall region of South Africa and the western margins of southern Africa, with possible increase in summer rainfall totals in the eastern areas of South Africa.

Predicted changes for the period 2070-2100:

- A generally drier southern Africa (5 – 15% reductions in current rainfalls).
- A distinct pattern of winter rainfall loss in the west and summer rainfall increase in the east, yet with some local scale deviations. Rainfall is indicated to decrease for the Limpopo province in spring and for the Western Cape in winter.
- **Summer rainfall region** projected to become drier in spring and autumn (shorter summer); however, during summer, more frequent cloud-band formation may take place over eastern South Africa, resulting in increased summer rainfall totals.
- **General increase in relatively large rainfall events** over eastern South Africa in particular, may take place. This area projected to experience an increase in frequency and intensity of rainfall concentrated in the early summer/summer. The magnitude and intensity of storm events is expected to increase.
- Dry spells (longer summers) may be expected to occur more frequently along the **western and northern margins** of South Africa, between spring and autumn.

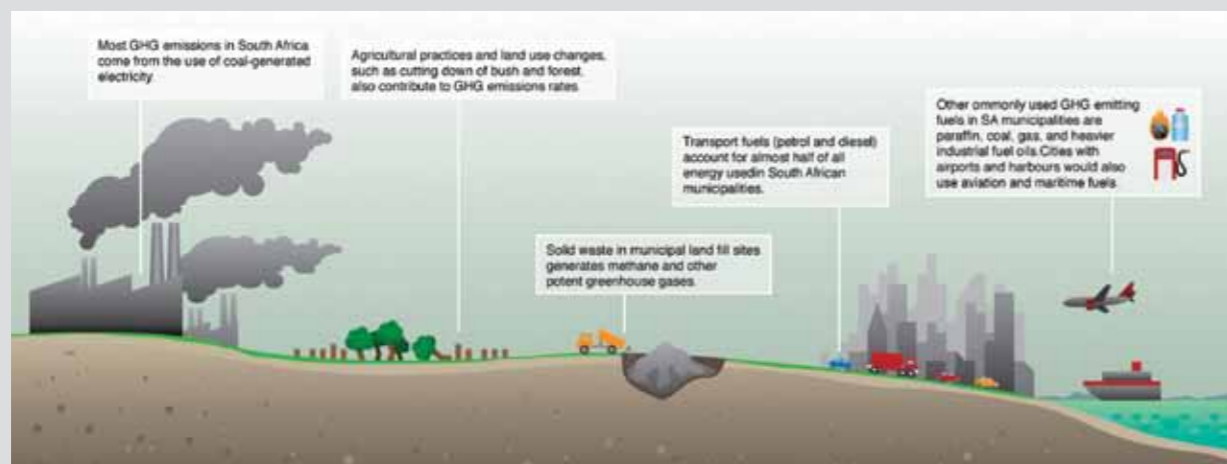




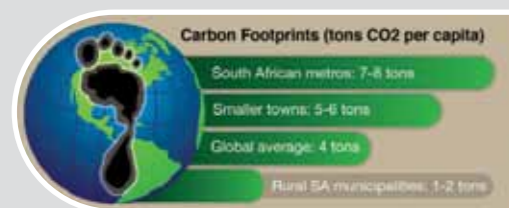
reference

Where do GHG emissions come from in a municipality?

GHG contribute to the phenomenon of global warming. GHG emissions are mostly made up of carbon dioxide and methane. Emissions are measured in terms of carbon dioxide equivalent (CO₂e). For example, methane, which is a powerful global warming gas, with a global warming potential 21 times that of CO₂ (in trapping heat in the atmosphere). The majority of GHG emissions come from the burning of fossil fuels to generate energy for the purposes of lighting, cooking, warming, appliances, computers, industrial motors, air conditioning, and transportation. Our solid waste also results in the emission of methane gases.



Because methane is such a powerful greenhouse gas, landfill and waste sites contribute substantially to a municipal GHG emission profile. Although transport fuels account for almost half of all energy used in South African towns, electricity consumption is responsible for most of the GHG emissions. This is because South African electricity is generated predominantly from 'dirty' coal that gives off a lot of carbon dioxide for every unit of energy it puts out. Households account for about one third of all electricity consumed – and this is largely electricity used in mid-high income household water heating. Industry (motors) and commerce (air conditioning, lighting and equipment) contribute substantially to the rest.



South Africa's larger cities and towns have important contributions to make to national mitigation efforts. In smaller towns the efforts may be more focussed on ensuring all residents have access to safe and affordable energy services.

As a country we have made commitments to reduce GHG emissions. There are other important reasons why moving towards a lower carbon environment is a sensible course for municipalities. A lower carbon environment should:

- reduce the vulnerability of the local economy to carbon taxes and trade barriers;
- create relatively cheap electricity distribution capacity on overstretched distribution grids through energy efficiency;
- insulate against oil price shocks in the future (public transport, compact cities) as the world moves towards 'peak' oil;
- create jobs in new energy sectors, such as solar water heating (SWH) and efficiency;
- improve energy security with local energy sources – solar water heating and local renewable energy; and
- reduce poverty and boost resilience: better insulated housing and SWH technologies can reduce the energy burden on poor households; access to cleaner energy sources will also increase resilience of households in the face of disease, fires and floods.



TIP:

Undertaking a full GHG Emissions and Energy Use Inventory

A full and detailed GHG emissions inventory is complex and likely only to be undertaken by relatively larger municipalities. Should you wish to do this in your municipality the most useful sources of information are below:

A good local guide, based on pioneering experience in Cape Town, is **Energising South African Cities and Towns (SEA, 2003)**. This document was updated and broadened in scope for other African countries in the **ICLEI/UN Habitat guide for Sustainable Urban Energy Planning: a handbook for cities and towns in developing countries (2009)**.

ICLEI's International Local Government GHG Emissions Analysis Protocols (IEAP), Version 1.0 (October 2009). The IEAP is informed by international GHG protocols and consists of the general principles and philosophy that local government should adhere to when inventorying GHGs from its government operations and community as a whole.

Guideline Terms of Reference (TOR) for a municipality wishing to undertake a local State of Energy data report and an Energy and Climate Change strategy can be found on Sustainable Energy Africa's City Energy Support Unit website: www.cityenergy.org.za/resources.



Phase 2: Strategy

Stakeholder consultation towards a climate response vision and strategy – where to go and how to get there

Phase 2 looks to find solutions to the problems assessed in Phase 1. A stakeholder workshop will support the development of a climate response vision and outline priority objectives towards addressing the challenges. Sector planning sessions will ensure these goals and strategies are set to be taken down into the municipality's operational plans in Phase 3.

Objective	The development of a municipal climate change response vision, goal and objectives (strategy) and integration of this into the priority objectives of the IDP and sector plans.	Tool 2: Climate Change and Municipal Planning Presentation (PPT and speaker notes) Tool 4: Determining Local Climate Change Impacts Support Sheet
Timeframe	Approximately eight weeks	Tool 5: Responding to Local Climate Change Impacts Support Sheet
When to use	The analysis process (Phase 1) must be completed in order to move into the stakeholder consultation. This usually takes place between September and November. This phase aligns with Phase 2: Strategies of the IDP planning process.	Tool 11: Developing a Local Climate Change Response Vision and Key Objectives Workshop Template Tool 12: Sector Climate Change Response Options
Expected outcome	A municipal climate change response vision and measurable objectives Climate change responsive priority objectives within the IDP focus areas (SFAs) Business/Sector plan alignment with IDP climate responsive priority objectives	Tool 13: Sector Plan Climate Response Considerations Review Guide



Photo: Sustainable Energy Africa

Step 1 : Prepare a Climate Response Vision and Strategy workshop

The approach here emphasises recognising and building on existing institutional knowledge and experience around responding to current and past climate events and development challenges. The more stakeholders brought into the process at this stage, the greater the depth of experience that will contribute to the unfolding process.

A wealth of experience and knowledge about climate events and development issues will be found amongst municipal officials and stakeholders, as represented in the IDP Forum. These multiple perspectives are important for developing a robust response to climate change. In this step the stakeholders – officials and citizens - will consider the risks, vulnerabilities and opportunities it faces in terms of climate change and decide on a response. Include as much expert input as possible, such as other government departments, organisations and institutions of higher learning.





TIP:

Use the list below as a guide to check you have invited all relevant parties:

- Municipal councillors
- Municipal managers
- Key sector officials
- Relevant national and provincial departments, such as Agriculture, Environment, Water, Health, Cooperative governance
- Traditional leaders
- Parastatals, such as Eskom
- NGOs
- Service providers
- Civic associations and organisations
- Organised business
- Ward committees
- Development Forum
- Agricultural associations
- Community tourism association
- Hospital board
- Media
- Community development workers
- Livelihood sector associations, such as Hawkers, Farmers, etc.

This workshop is extremely important and needs to be thoroughly organised. Check the list below to make sure you are well prepared:

- Workshop date set
- Workshop venue booked
- Catering has been arranged
- Agenda developed (**Tool 11: Developing a Local Climate Change Response Vision and Key Objectives Workshop Template** will assist here)
- Invitation, with date, time, venue and draft agenda has been sent to all stakeholders
- A workshop facilitator has been identified
- The task of writing minutes has been assigned to a staff member
- Presentations, based on **Tool 2: Climate Change and Municipal Planning Presentation** and your local analysis report are developed.

Step 2 : Hold the stakeholder Climate Response Vision and Strategy workshop.

Use **Tool 11: Developing a Local Climate Change Response Vision and Key Objectives Workshop Template** to prepare for and guide the workshop. The workshop facilitator (whether internal or external to the municipality) should know the issues well and have taken the time to read through all the related tools. **Tool 4: Determining Local Climate Change Impacts Support Sheet; Tool 5: Responding to Local Climate Change Impacts Support Sheet** and **Tool 12: Sector Climate Change Response Options** are designed help the facilitator run the sessions. The **Pilot Studies** reports available on the **accompanying CD** will provide an example of the kind of discussions you might expect here.

Step 3 : Develop a Climate Change Response Strategy Document

After the workshop, draft a Climate Response Strategy Document based on your research and stakeholder engagement. This document will equip the Municipality to integrate climate response into the IDP. It should cover:

1. **Background:** state the nature of the climate challenges and opportunities facing the municipality (This would basically be your Climate Analysis Report).

2. **Policy principles** framing the inclusion of the climate change dimension into local government planning. See the notes box at the end of this section 'The local government climate response policy principles' for detail of legal and policy framework;
3. **Vision and objectives:** outline the vision of the municipality in responding to climate challenges and detail the key objectives identified in the stakeholder workshop.
4. **Alignment:** align each climate change response objective with an SFA or Priority Objective of your IDP.

Priority interventions: outline the priority projects/ interventions identified in the workshop. **Tool 12: Sector Climate Change Response Options** will support this discussion and this will form the basis of the action planning in the next phase.

Step 4 : Submit the Climate Change Response Strategy Document to council for endorsement and formal inclusion into the SFAs.

This will need to happen through the official channels of the IDP office. Initial budget allocations will be made at this point, so it is extremely important that the climate change response plans are already on the IDP agenda.

Step 5 : Hold sector climate change response integration planning sessions

Organise a meeting with each municipal sector to go through the newly identified climate change response objectives contained within the SFAs and align sector plans to these.

The various departmental representatives on the climate change response committee will need to provide the lead department with support in this process. **Tool 13: Sector Plan Climate Response Considerations Review Guide** will assist you in these sessions.

These sessions will:

1. Familiarise sector stakeholders and departmental officials with the municipality's climate change objectives and priority actions discussed in the stakeholder workshops. Draw on **Tool 4: Determining Local Climate Change Impacts Support Sheet; Tool 5: Responding to Local Climate Change Impacts Support Sheet** and **Tool 12: Sector Climate Change Response Options** to provide a background for staff that were not at the stakeholder session.
2. Using **Tool 13: Sector Plan Climate Response Considerations Review Guide:**
 - a. Review the existing Sector Development Plan to direct participants to the key climate issues facing the sector and relevant mandates to tackle these. NOTE: the notes box at the end of this section 'The local government climate response policy principles' will detail the legal and policy framework;
 - b. Identify gaps and/or areas of the sector plan, and project actions plans, which need changing in order to be more climate responsive (the **Project filter for Climate Response Integration** information box in Phase 3 of the Let's Respond Guide will also assist);
 - c. Agree on priority climate response projects for inclusion in IDP and Implementation plans.

Step 6 : Obtain sector plan approval

Follow up that sector plans have integrated the climate change dimension. Once the plans have been approved and linked to the IDP, it will be important to develop further project detail and include this in the Service Delivery Budget Implementation Plan (SDBIP) as part of the municipality's strategic planning process (see Phase 3).



TIP:

If Sector planning is outsourced to a consultant make sure that inclusion of climate change response is integrated into the Terms of Reference for this work. **Tool 13: Sector Plan Climate Response Considerations Review Guide** will assist you with this.



reference

How Emfuleni Local Municipality is experiencing and responding to climate change

Emfuleni, along the Vaal River, has experienced flooding events, warming and seasonal changes in the past few years. Flooding resulted in livestock drowning and damage and disruption with bridges and roads submerged. Poor people lost their entire households and wealthy, river-front households, incurred losses. Oil and sewage spilled into the river system. Better town planning and disaster management are seen as ways to avert damage. Existing environmental problems greatly reduce the area's resilience to climate change. Wetlands damaged by illegal dumping and human settlements are not able to function as an effective and natural way to absorb heavy floods. The initial response objectives drafted by the municipality and stakeholders are: to be well prepared; to strengthen the environment to handle impacts; to reduce GHG emissions; build responsive governance and community resilience to climate change.



reference

The local government climate response policy principles

The primary policy approach in respect of climate change response is framed within the **National Climate Change Response (NCCR) White Paper (2011)**. This document outlines strategic priorities, provides direction for action and delineates responsibilities for the different spheres of government. **Section 10.2.6** notes the key role of local government as a site of climate change response delivery flowing from its responsibilities as detailed in the objectives and powers and functions accorded to local government in the **Constitution of South Africa (108 of 1996)** and the **Municipal Systems (32 of 2000) and Structures (117 of 1998) Acts**.

The National Climate Change Response (NCCR) White Paper (2011) identifies the climate response areas of local government as:

- building resilience within the local population
- planning settlements in the context of climate change
- urban development
- provision of infrastructure and services
- water and energy demand management

Climate change is a dimension that has strong relevance in local government's ability to meet its **Constitutional objectives (section 152 (1))** of sustainable service delivery, social and economic development and promotion of a safe and healthy environment.

Local government has to adhere to environmental principles and take environmental considerations into account in its planning processes. Some significant principles contained in the **National Environmental Management Act (NEMA) (107 of 1998)** and the **White Paper of Environmental Management Policy for South Africa** include that local planning must take into account global/international issues (GHG emissions would be a good example of this, having little immediate local impact, but substantial impact when combined with all global contributions), that this must be brought into planning as early as possible and that natural resources must be protected for the benefit of present and future generations.

PHASE 2: STRATEGY: Deliverables checklist

- Stakeholder workshop conducted
- Municipal Climate Response Strategy document submitted to council with:
 - Recommendations on inclusion of climate change dimension into council Priority objectives or Strategic focus areas (SFAs);
 - Climate change response objectives to be included within the IDP Strategic Focus Area sub-objectives
- Sector planning sessions to integrate climate change response completed
- Sector plans reviewed and updated to align with new priority objectives

PHASE 2: STRATEGY: Additional value:

Detailed Adaptation or Mitigation Strategies (for information on this, see Phase 1: ANALYSIS and Tool 3: Directory of Key Climate Change Resources)



reference

Schedules 4 and 5 Constitutional Local Government power and functions relevant to climate response:

LG Responsibility	Critical climate response areas and actions
Building codes	Building code requirements for greater efficiency in meeting lighting, heating and cooling and water heating services will reduce GHG emissions and develop a measure of grid independence (with solar water heating) in incidences of power failure.
Land use planning	Improve density and thereby facilitate an effective public transport system. Develop outside of flood or storm vulnerable areas.
Water	Water supply and demand management responses to anticipated critical water shortages.
Storm water and sanitation	Appropriate design and maintenance of storm water infrastructure to accommodate storm surges and increases the volume of storm water runoff to prevent damage to infrastructure and assets; improved sanitation will assist curbing the spread of disease
LG Responsibility	Critical climate response areas and actions
Electricity	Greater efficiency and increased use of renewable energy is vital for the reduction of GHG emissions; this can also contribute to an improved energy security situation within a municipality.
Infrastructure	Infrastructure developed today has a 20 - 50 year lifespan. We need to build today with an understanding of what the world is likely to look like into the future. Infrastructure must be designed and maintained to accommodate extreme weather events and improve efficiency of resource use.
Parks and conservation	Biodiversity and ecosystem protection will enhance natural climate buffers and ecosystem services: wetlands absorb storm water, dunes protect from rising sea levels and storm surges, functioning river catchment and courses enhance water supplies.
Waste management	Landfill gases contribute to GHG emissions and need to be reduced and better managed. Recycling of materials can also reduce the energy required to produce such materials. Some potential may exist to transform the gas into electricity.
Transport	Increased use of public transport over private reduces emissions related to fuel consumption. Improved mobility may also enhance job growth.
Air quality	Municipalities with air quality control responsibilities can monitor all pollutants including GHG emissions, thereby contributing to the national database. This is also an important lever for local government to encourage efficiency in local industry and lower carbon development.
Human settlements	Improved thermal quality of housing in low income areas will increase resilience to disease and reduce the energy used by, and cost of, indoor heating/cooling.
Disaster management	Extreme events (wild fires, storms, floods and droughts) are set to increase with climate change. Improved early warning systems, response times and community involvement can reduce mortality and injury to persons and property.

A plethora of legislation and policy is associated with each of these powers and functions. An outline of this, with a more detailed **Local government climate response policy principles brief** is available on the **accompanying CD. Tool 12: Sector Climate Change Response Options** provides detail on specific response actions that fall within each of these broad areas of responsibility.



Photo: Willem De Lange, for the Green Building Council of South Africa



Photo taken by Cedric Nunn



Phase 3: Projects

Options for Action

Phase 3 takes the municipal climate change response priorities into the operational dimensions of the municipal planning process. Identified IDP projects directly relating to climate change are detailed within the capacity and resource constraints, and a system established to monitor delivery; all IDP projects are reviewed for climate change dimension alignment.

Objective	Detail developed for IDP priority projects and other departmental climate response projects, for inclusion within Service Delivery and Budget Implementation Plans (SDBIPs)	Tool 8: Municipal GHG Emissions Calculator and Electricity Sector Efficiency Planning Tool Tool 12: Sector Climate Change Response Options Tool 15: Project Selection Support Tool
Timeframe	Approximately six to eight weeks.	Tool 14: Climate Change Response Action plan (SDBIP) Template
When to use	November – December; and full SDBIP process by end June Sector (departmental) operational planning processes towards municipal budgets and organisational scorecards/SDBIPs development, required by the end of June each year. The changes to performance agreements arising from climate response integration must then be signed by relevant heads of department ready for council approval of the IDP by the end of June. Final approval of SDBIP will happen at the end of July.	Tool 16: Key Performance Indicator (KPI) Support Tool Tool 17: Local Implementation Case Studies
Expected outcome	Detailed project plans for climate change response projects identified in previous phase. Clear targets and indicators to measure performance	

Step 1 : Clarify project details

Priority objectives and related projects identified in the IDP must now be detailed. Where these specifically related to climate change, the climate change response lead department and each relevant sector department must ensure that information to clarify project details is in place:



three | Projects

- who is to benefit from the project?
- how much will it cost?
- how is it going to be funded?
- how long will it take?
- who will manage the process?

Given that climate change response is a new area of work, or at least a different way of working with existing municipal development work, these will not always be easy issues to clarify. A number of South African municipalities, particularly the metros, have pioneered much climate change response work. **Tool 17: Local Implementation Case Studies** provides information on a variety of projects across sectors in local municipalities. **Tool 8: Municipal GHG Emissions Calculator and Electricity Sector Efficiency Planning Tool**, on Sheet 2, has detailed information on electricity efficiency intervention options, including cost-benefit information.

Step 2 : Re-prioritise other and/or existing projects

All IDP projects must be evaluated to ensure that they align with the climate change dimension of the IDP. A number of projects will already be running within the budget cycle. Departments must evaluate these projects against the new climate priorities of the municipality and re-prioritise where necessary. The **Project filter for climate response integration** below provides some useful guidance.

Step 3 : Final project selection and prioritisation for next budget cycle



TIP:

Project filter for climate response integration

Climate response actions take place in a world of great climate uncertainty. It is not always easy to know which response is the most ideal. When selecting new project and re-prioritising existing projects consider the following:

- Will the project still be viable in 20 years time given projected climate impacts?
- Consider:
 - The increasing cost of carbon;
 - The increasing cost of transport;
 - Geographic mobility given drought, storms, coastal erosion;
 - Infrastructure design given changing climate conditions and extreme events.
- Has the project had input from other departments?
- Does the project contribute to a lower carbon future, i.e. does it promote efficiency and/or utilise renewable energy sources?
- Does the project support more efficient resource use in terms of water and energy/electricity? And a reduction of waste?
- Does the project contribute to poverty reduction, food security and lower social vulnerability?
- Does the project contribute to the creation of green jobs?



Project filter for climate response integration - continued

- Does the project work to reduce the bias and barriers faced by women in accessing livelihood opportunities and access to resources?
- Does the project improve the mobility of residents and their ability to access jobs and livelihoods?
- Will the project allow for local sourcing of labour, contractors and materials?
- Does the project damage natural resources that are under threat of CC and carbon sinks?

*The broad principles are that climate response action should 'do no harm' (aim to boost social, economic and environmental rights) and enhance natural ecosystems to manage and respond to climate change. **Tool 15: Project Selection Support Tool** will assist where climate response actions (projects) must be prioritised over one another.*

Once this information has been gathered, each department is in a position to prioritise actions and develop detailed plans with the aim of meeting the new climate objectives. These need to be achievable with the available resources and capacity, or should identify where additional resources and capacity will be coming from.

Climate responsive actions may have higher up-front costs than 'business as usual' approaches to municipal service delivery and development projects. Municipalities MUST consider that long term scenario modelling and projections point to the need for early, decisive action on climate change and indicate that, although costly, this will be cheaper in the long run as compared with later, drastic action under enormous pressure. **Tool 15: Project Selection Support Tool** will assist participants to prioritise actions. International negotiations are currently working towards establishing international funds to support climate responsive development. SALGA will ensure that information about climate change response funds reaches municipalities.

Step 4 : Fill out the Action Plan template

The detail developed above is now ready for insertion into the One Year Detailed Operational Plan of each sector, through the Service delivery budget implementation plan (SDBIP). To fill out the plan, you will need to:

- identify the responsible person and department;
- detail the budget and where funds will be coming from;
- set clear targets; and
- identify measurable indicators to monitor performance.

Tool 16: Key Performance Indicator (KPI) Support Tool will assist you in formulating targets and indicators for monitoring.

This information allows the municipality to track both progress towards achieving targets as well as spending against budgets. You can draft this information using **Tool 14: Climate Change Response Action plan (SDBIP) Template**, or simply insert this straight into the Sector Development Budget Implementation Plan (SDBIP) of your department.



NOTE: *while the actions need to be integrated into the existing sector action plans, the climate response coordinating committee or lead department may also wish to hold these in their own 'Climate Response Action Plan' in order to be better able to monitor and drive the climate response thrust of the municipality.*



reference



Thulamela Local Municipality responding

Thulamela, in the Vhembe District of Limpopo Province, experienced heavy storms and floods in the summers of 2000, 2001 and 2002. The floods resulted in landslides and damage to roads and infrastructure. Without road infrastructure people couldn't cross streams and were unable in instances to obtain medication and death certificates in order to be able to bury their dead.

Illegal dumping and misuse of catch-pits around the town and residential areas contributed to the damage as storm water networks were unable to function at 100%. Thulamela responded by embarking on a project to clean up the storm drainage system. The project was funded through the Expanded Public Works Programme (EPWP) and emphasized the employment of people living in local communities alongside bridges and culverts. In August 2011, fifty five drainage systems were cleaned. The community has also become more aware of the value and importance of maintaining the health of these systems. This in turn strengthens the municipality's adaptive capacity during floods and heavy rains.

PHASE 3: PROJECTS: Deliverables checklist

- IDP priority projects relating to climate change are detailed; all IDP priority project are reviewed to ensure climate change response dimension has been incorporated.
- Additional actions to achieve the municipal climate change response vision, and key objectives, have been identified, developed and prioritised (or re-prioritised) in departmental or sector plans
- Climate responsive actions/projects are held within the relevant departments' SDBIPs, and thus:
 - responsibility for delivery on actions has been assigned to a department and project manager
 - budgets and funding sources have been identified
 - targets and indicators have been developed





Photo: Sustainable Energy Africa

Phase 4: Integration, Approval and Implementation

This phase checks that the projects contribute to meeting the objectives identified in Phase 2 and that these are well integrated into departmental programmes. This phase also ensures that the public have an opportunity to engage with the council's approved development plans before final adoption.

Objective	Finalisation of a climate responsive IDP and development of institutional capacity (internal staff and resources, community engagement and local and global learning networks) to build on and develop this work.	Tool 17: Local Implementation Case Studies Tool 18: Is your IDP climate response 'credible'? a Check list
Timeframe	An approved IDP that is climate response 'credible'	
When to use	December – end May, or while the IDP is undergoing its final approval.	
Expected outcome	December – January: checking of draft final IDP and budget to ensure climate change response is visible; April: communication programme to run while public participation is taking place for the IDP	

Step 1 : Institutionalise climate change responsive governance and consolidate climate response programmes in IDP

The challenge of climate change is new and requires a response across line departments. Integration and implementation will only be successful where the institutional capacity to respond has been developed. At this stage the municipality should have:

- a mandated department responsible for climate policy response coordination;
- climate response action targets and performance indicators in the municipality's strategic / organisation scorecard;
- climate response projects reflected in the service delivery budget implementation plans (SDBIPs) and approved budgets in the medium term economic framework (MTEF) allocations; and
- implementation monitoring in place.





four | Integration, Approval and Implementation



Step 2 : Obtain final approval of the climate responsive IDP

The draft IDP and budget will be completed during the December- February period. Support the IDP office, using the **Tool 18: Is your IDP climate response ‘credible?’** to identify whether the climate response process you have driven is represented in key areas of the IDP. Note that the Department of Cooperative Governance (DCOG) will shortly be including some of these assessment criteria into its formal IDP Evaluation Framework. Not all of these criteria can be met immediately – it will take some time to develop this level of climate capacity.

Prepare the climate change response coordinating team to provide information on the climate change response approach of the municipality at all council IDP approval meetings.

Step 3 : Communicate what your municipality is doing about climate change to residents

The IDP will go out for public comment during April. The Climate change response coordinating committee must be prepared to respond to any public queries on the municipality’s climate change response approach.

As this is a new area of work in many municipalities, it is worth preparing for proactive climate change response communication. The challenge of climate change requires all citizens to be on board. Local knowledge and experience relating to climate and related sectors, such as agriculture, water and livelihoods is enormously valuable. Effective response will be enhanced by community-mindedness. Communicating the municipality’s climate response strategy, as it emerges in the IDP, will raise awareness and draw in important perspectives and contributions to meeting the upcoming climate challenges.

Communication can be through ward engagement, posters or pamphlets, public events, or regular information updates through specific fora or media.



Step 4 : Implementation

All line departments allocated responsibility to implement the climate response actions will now do so. This work will be monitored through the performance management systems of the municipality, but it is important that the Climate Change committee continue to monitor and guide this work. There are often barriers to new approaches and new initiatives that require special attention and support to be provided to staff engaged in implementation. **Tool 17: Local Implementation Case Studies** provides insight into climate response projects undertaken in South African municipality’s, including barriers confronted and lessons learnt. Read these for additional information or guidance in developing project details.

Step 5 : Co-operate with other local governments and join international networks

Climate response is new and will involve a lot of ‘learning by doing’. Setting up formal or informal networks through which you can share lessons and learn from others in the region will be an important response action. Consider what role the district council or provincial government may play. International partnerships may also offer opportunities.

The South African Local Government Association (SALGA) will play an important role here. A leading international network is ICLEI, which is an international association of local governments that have made a commitment to sustainable development. Through its network of regional offices, ICLEI offers tools, materials, strategies and good practise information on issues relating to urban sustainability, including climate change. The regional ICLEI Africa office is based in Cape Town: www.iclei.org. In the area of GHG emissions reduction, the City Energy Support Unit (CESU) of Sustainable Energy Africa, hosts a learning network and a range of support materials developed through South African municipal experience are available on: www.cityenergy.org.za

PHASE 4: INTEGRATION: Deliverables checklist

- Climate response coordinating structure (team, committee, department) mandated to lead this cross-cutting work over the IDP timeframe
- Approved IDP substantially meets the climate change response assessment criteria outlined in Tool 18: Is your IDP climate response ‘credible?’
- Plan developed to communicate what your municipality is doing about climate change to its citizens and residents
- Climate responsive projects underway

PHASE 4: STRATEGY: Additional value:

Cooperation with other local governments and possible international networks established

in conclusion

While this guide has tried to develop and delineate a process as clear and universally applicable as possible, a step by step approach may seem to gloss over the reality that municipal planning is an iterative and 'messy' process and responding to climate change, at least in the short term, is filled with potential trade-offs, conflicts and tough decisions. Climate change related time frames are often at odd with the development planning decision making time frames: budget cycles run over three year periods, political office and IDPs have five year time horizons, whereas infrastructure often has a life span of 60 plus years – well into the era of severe climate change.

South African municipalities are confronted on a daily basis with the pressure of basic service delivery backlogs that must be attended to. With limited financial and human resources, it is difficult to divert resources from basic service delivery. This makes it important that climate change response action seeks wherever possible to support and improve the municipality's ability to deliver on its immediate commitments. The responses identified in the tools will all contribute broadly to sustainable development. The process developed through the guide similarly seeks to build a common understanding of the climate change challenge amongst municipal communities and develop response actions that speak to the concerns and issues experienced at the local level.

The piloting of this guide and associated tools in five municipalities across the country demonstrated the depth of local knowledge, experience, commitment and concern of stakeholders in the face of climate change. People are not affected in a uniform way by climate change and response proposals can differ enormously depending on technical background and position in society (men, women, engineer, scientist, politician) making it very important to bring multiple perspectives and experiences into the process. This guide aims to support the continued growth of this kind of participation in municipal development planning.

Due consideration will be given by the partner organisations in this initiative to the kind of support municipalities will need to get this process underway. It is hoped and anticipated that the guide and tools will adapt and develop themselves as municipal experience of the approach deepens.



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