**Municipal Responses to Climate Change
in South Africa**

The case of eThekwini, the City of Cape
Town, and the City of Johannesburg

Lebogang Mokwena

Research report 113

Research report 113

**Municipal Responses to Climate Change in South Africa
The case of eThekwini, the City of Cape Town, and the City of
Johannesburg**

Lebogang Mokwena
Researcher CPS

Centre for Policy Studies
Johannesburg
April 2009

The Centre for Policy Studies is an independent research institution,
incorporated as an association not for gain under Section 21 of the
Companies Act.

Centre for Policy Studies
1st Floor
Maths Centre
28 Juta Street
Braamfontein
Johannesburg, South Africa

P O Box 1933
Parklands 2121
Johannesburg, South Africa

Tel (011) 403-4001
Fax (011) 403-4026
e-mail: portia@cps.org.za

www.cps.org.za

TABLE OF CONTENTS

1. INTRODUCTION

This study assesses the extent of progress made in institutionalising climate change policy responses within three metropolitan municipalities in South Africa – Cape Town, eThekwini (Durban) and Johannesburg. By focusing on the progress in some of South Africa's largest metropolitan areas on the issue of climate change policy development and implementation, the study serves to highlight South Africa's readiness and capacity at local government level to deal with climate change and related environmental problems.

Many countries in different parts of the African continent are facing urgent environmental threats to their economies due to the phenomenon of climate change. South Africa, despite its relative wealth and greater endowment of financial resources and infrastructure, also faces similar problems and threats to its economy. It is acknowledged in South Africa that climate change poses a range of human, environmental and economic security challenges that call for decisive and coordinated action by government. To this end, and in keeping with Goldblatt and Middleton's (2007) observation, the formulation of effective climate change responses requires 'multi-level governance' structures that span the entirety of the policy process. From the design of policy tools and interventions to their actual implementation, such a multi-level governance agenda must necessarily include the elaboration of these and other climate change interventions at local level as well; that is, at the level of municipal decision-making and responses to climate change. This paper therefore reports on the findings of a short study conducted on the level of progress made by the South African government in terms of policies, programmes and strategies put in place to address the challenges posed by climate change. Specifically, the aim of this paper is to assess the extent to which climate change has been adopted as a priority policy issue within local government and how far local authorities have gone in implementing mitigation and adaptation strategies in this regard.

While much of the research carried out on the challenges of climate change has tended to focus on the international governance framework, particularly through analysis of governance instruments such as the 1997 Kyoto Protocol[1], it is clear that in order to reach the stipulated targets of the protocol, individual nation states would have to formulate, adopt and implement their own local policies and strategies. A global environmental and climate change governance regime is thus only as meaningful as the concrete policy steps that national governments take to realise these global goals. However, even as central governments establish extensive policy frameworks and responses to climate change, such efforts are often implemented by other levels of government, most notably at local level, where the effects of climate change are most immediately manifested. Surprisingly,

---

[1] The Protocol is a global environmental treaty under the United Nations Framework Convention on Climate Change (UNFCCC), which requires, inter alia, industrialised countries (Annex 1 countries) to reduce their Greenhouse Gas (GHG) emissions by 5.2% of 1990 levels. The Protocol encourages non-Annex1 countries to contribute through Clean Development Mechanisms (CDM).

however, few studies have examined the role that local authorities can and do play in responding to and managing the challenges posed.

As climate change, and the related environmental threats that it poses, increasingly become central to public debates on sustainable developmental strategies across Africa, it is important that an assessment is made of the role of local authorities in combating, managing, and adapting to these threats, especially as these local authorities are closer to the communities most immediately affected by the threats of climate change. However, an assessment of this nature must take into consideration the other (competing) social policy priorities that face local authorities, particularly in a post-apartheid South Africa, where these authorities are saddled with enormous responsibilities to address social service backlogs for impoverished communities. For the purposes of this study, it was important to assess how the three main metropolitan municipalities (Johannesburg, Cape Town, and eThekwini) have responded to these challenges in the light of increasing emphasis on climate change strategies within the context of a sustainable development policy discourse. This intersection between sustainability and development is particularly salient when analysed in relation to the three metropolitan cities in South Africa. Not only do these three cities contribute the most to South Africa's economic output, but in doing so, they are also the country's biggest emitters of greenhouse gases (GHG), and thus have a greater responsibility to adopt mitigation and adaptation measures to address climate-change-related problems.

This is consistent with a global trend where cities are the major emitters of GHG, accounting for approximately 50 per cent of all global GHG emissions (Yamin 2007). Furthermore, the geographical location of eThekwini and Cape Town and their resultant vulnerability to climate change threats such as rising sea-levels, storm surges, and flooding, have necessitated the development of measures to adapt to climate change by investing in resilient infrastructure and effective early-warning systems. Also, given South Africa's migration and demographic trends, South Africa will see continuing urbanisation and hence increased demand for government services such as housing, water, and energy in the metropolitan centres. According to Nash (2008: 1), "adapting urban centres is important for protecting economies as well as people." Clearly therefore, research into the role played by local authorities and their responses to the challenges of climate change and related environmental problems is a pressing policy and research issue, even for South Africa. The research approach adopted here was therefore premised on the view that cities are key sites through which to assess and analyse the country's capacity to respond, adapt to, and mitigate the effects of climate change and related environmental problems in an integrated manner that is consistent with the other priorities to deliver basic services. Key to these issues is analysing these cities' policy choices within a framework of sustainability.[2]

1.1   Methodology and Research Approach

South Africa's constitutional structure divides the powers and functions of government into three parts – national, provincial and local. In terms of this division, the national government usually formulates broad policies and sets policy parameters for the country as a whole, while the provincial and local governments are mandated to formulate their own specific policies and programmes and to implement them within these national policy parameters. Broadly, this scenario holds for powers and functions that are enumerated and implied in the Constitution, except those that are allocated exclusively to each sphere of government. But even in those powers and functions that are allocated exclusively, the Constitution provides the national government with certain powers to override the provinces and municipalities for purposes of maintaining national norms and standards, uniformity, national security, economic unity of the country, and a number of other key considerations identified in section 146.

The area of environmental policy falls within the group of 'concurrent functions' allocated by the Constitution to be shared between the national and provincial spheres of government. However, even in this case, the usual practice is for the national government to set the broad policy framework, including determining national norms and standards, while allowing the provinces (together with the municipalities falling within their areas of jurisdiction) to formulate and implement their own specific policies, programmes and strategies. A case study approach was therefore adopted for this research, to enable an in-depth study which examines and assesses the ability of the selected municipalities, under the supervision of their respective provinces, to identify climate change and related environmental threats, and initiate appropriate policies, programmes and strategies (including projects) aimed at adapting to and mitigating these threats.

In selecting case studies, initially four out of the six metropolitan municipalities in South Africa were chosen. These were the eThekwini metropolitan municipality in KwaZulu-Natal, the City of Cape Town in the Western Cape and the Johannesburg and Ekurhuleni municipalities in Gauteng province. However, Ekurhuleni was abandoned after numerous and fruitless attempts to obtain interviews with relevant officials. In many instances, officials either refused to be interviewed or failed to identify relevant officials in the municipality with the right knowledge and responsibilities relating to climate change and/environmental policy issues. The idea of selecting highly placed officials in these municipalities is based on the assumption that these are key policy officials with in-depth knowledge and understanding of the respective municipal policies, strategies and programmes and thus are best placed to talk authoritatively about the issues impacting on policy and implementation.

---

[2]. Sustainability here refers to the capacity of a society to address and meet current needs and wants without compromising the capacity of future generations to meet their own needs.

The metropolitan municipalities are well endowed in terms of fiscal and human resources, compared with other local authorities in the country. Thus, another key assumption of this study was that the relatively higher level of resource endowment of the metropolitan areas would minimise the extent to which the issue of lack of fiscal and human resources, prevalent in other poorer municipalities throughout the country, would become an obstacle to effective responses to climate change and related environmental challenges.

A series of in-depth interviews were carried out with key senior officials responsible for environmental policy and implementation in these Metros. In addition to the interviews, documentary sources such as government policy documents, reports and studies conducted by independent institutions were also utilised to gain a thorough insight and understanding of the key issues and challenges relating to government climate change responses, adaptation, and mitigation policies and strategies, and how effective or ineffective these have been. This was a short study, carried out between September and December 2008, and this report presents the findings.

1.2 Structure of the Report

This report is divided into three main sections: the first will sketch the institutional and policy context within which climate change strategies are formulated in South Africa, and the general conceptual and policy framework informing such processes. It will also focus on and discuss the internal organisational and structural features of the metropolitan municipalities and how these impact on the ability of municipalities to discharge their functions relating to climate change mitigation and adaptation responses. This section will start with a discussion of some of the main causes of climate change in South Africa, as well as the likely environmental and other effects, specifically in terms of how these impact on the metropolitan areas identified.

The second section will explore and discuss the role, achievements and problems encountered by the three metropolitan municipalities as they respond to the challenges of climate change and related environmental threats. In particular, the policy initiatives, programmes and strategies of the selected case studies will be examined, in terms of responses to climate change and related environmental threats. The final section will draw conclusions and provide appropriate policy recommendations based on the findings.

2. SOUTH AFRICA AND CLIMATE CHANGE: IMPACTS AND POLICY RESPONSES

Much of the focus of available studies is primarily directed at the opportunities presented by or limitations inherent in the Kyoto Protocol, with pressure to see a post-Kyoto consensus negotiated, as well as the development of appropriate national interventions. However, there continues to be a noticeable lack of focus, combined with what appears to be limited interest, in the role and capacity of local level government structures to deal with the challenges of climate change. This study was undertaken in the light of this lacuna in research on the role of local authorities in dealing with climate change in South Africa.

Under the Kyoto Protocol, South Africa – like all the other developing countries – has been classified as a Non Annex I country, meaning that the country is not obligated to comply with the Protocol's targets of reducing GHG. Some critics have argued that this provision is unfair, since the global fight against climate change should be undertaken by all countries, irrespective of their economic and development status. Furthermore, this differentiated approach to addressing the challenges of climate change has been identified as a possible impediment to reducing GHG emissions, since it fails to serve as a disincentive (by penalising) for developing nations that fail to adopt more ecologically sound economic development models. This differentiation under the Protocol is, however, justified on a number of grounds. Firstly, some of the leading developing countries argue that accelerated economic development cannot be achieved without the levels of industrialisation which are, to a significant extent, not ecologically sound. Indeed, they argue, developed countries themselves could not have reached their current levels of economic success had it not been for similar patterns and levels of industrialisation.

Secondly, it is argued that most developing countries do not have the financial resources and human capacity in terms of the necessary technical skills to invest in the types of technological innovation through which to introduce strategies for adapting to and mitigating the effects and impacts of climate change. For these countries, it is argued, the more pressing challenges are poverty alleviation and economic development and growth, both of which are unlikely to be adequately addressed in a context where onerous climate change mitigation steps – as expected of Annex I countries – are similarly imposed.

That said, however, South Africa represents an interesting case as the second largest emitter of carbon dioxide on the continent, after Libya. Owing to its predominantly coal-based energy production methods, the country "has one of the most carbon-intensive economies in the world" (Warburton et al 2007; DEAT 2006). South Africa is the second-highest emitter of GHG in Africa, with carbon-dioxide emission levels that are higher than those of France, and tending towards those of Japan and the United Kingdom (UNEP/GRID-Arendal, 2005). While aggregating the continent's emissions reveals that Africa's contribution to the world's total carbon emissions is relatively small compared to Europe and

North America, disaggregating the data for the continent also leaves no doubt that South Africa is responsible for a huge proportion of the continent's emission levels.

South Africa has also been identified as one of the countries that will experience considerable water scarcity by 2025 (UNEP 1999). Turton (2008) notes that South Africa's levels of precipitation are about half the global average of 860 mm per year, a situation that he argues is likely to have dire consequences for the country's economic development and probably socio-political stability (as well as for the development of southern Africa more generally). Rather than being a peripheral side issue in policy debates in South Africa, Turton argues that the challenge of water security (as with other environmental concerns) should be treated as integral to the country's development policy goals.

The effects of climate change in South Africa are not limited to increased water scarcity in some parts of the country and drastic qualitative changes in the water supply, but extend to losses in biodiversity and rangelands, which impacts on maize farming and the agricultural sector, as well as possible increases in infectious and respiratory diseases (See, for example, Kiker 2000). With these considerations in mind, it is clear why South Africa is one of the leading role players in Africa on the challenges posed by climate change, having also agreed to commit to the recommendations and targets of a possible post-Kyoto climate change mitigation regime. However, critics of the South African government point to what they see as rhetorical commitments and mere declarations of intent, rather than real political will on the part of policy-makers. Still, there was a general view among many of the informants interviewed that the salience of climate change as an urgent policy issue is increasing, especially among senior level government officials across government and within the different tiers of government. According to the officials interviewed this increasing momentum driving the emerging policy and political consensus on the importance of addressing climate change derives mainly from the intensity of global debates on climate change and South Africa's energy security challenges. Without a doubt, however, the extensive and robust legislative instruments that the South African government has introduced in the past few years show that there is national concern about the various threats posed by climate change to the country's economy and development.

2.1 Policy Frameworks and Responses

Figure 1 provides a list of some of the key sectoral, national, and global policy instruments and other regulatory frameworks underpinning environmental protection and climate change governance processes in South Africa. Although the list is not exhaustive, it does represent an ensemble of various instruments that are critical for government and other key role players in South Africa to use to address the key challenges posed by climate change. Since the advent of democracy in 1994, particularly since the late 1990s and early 2000s, South Africa has become firmly integrated into climate change and related environmental regimes

at regional, continental and international levels by signing and/or ratifying a bewildering array of protocols, treaties, agreements and frameworks that guide its policies, programmes and strategies in this regard. For instance, not only is South Africa a signatory to the Kyoto Protocol, but it also has a trilateral agreement with India and Brazil, one of the components of which is to strengthen the three countries' commitment to combating climate change and advancing the goal of sustainable development in these three countries.

In terms of national policies and strategies, the South African Constitution (Act 108 0f 1996) provides an overall legal framework for government responses to the challenges of climate change and related environmental problems. The promotion and protection of the country's natural environment and the rights of South African citizens to access and enjoy a healthy natural environment is one of the key provisions contained in the Bill of Rights section of the country's Constitution. For instance, Section 24 of the Bill of Rights contains the following environmental rights:

- To an environment that is not harmful to their health or wellbeing; and

- To have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that:-

    o Prevent pollution and ecological degradation

    o Promote conservation

    o Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

Juxtaposed against environmental protection and the rights to a healthy environment contained in the Constitution of the Republic, are other developmental rights, for example those pertaining to the right to adequate housing and the provision of basic services such as water and other essential services including health care[3].

The need to provide a healthy and safe environment, as well as the attainment of social rights for all South African citizens, is necessary and laudable, but difficult to achieve against a backdrop of the need for adequate (and cheap) energy to meet government priorities of economic and social development. Section 24 of the Constitution is a laudable provision in that it provides a framework for the pursuit of sustainable development, but is quite problematic in that the goal of accelerated economic growth is likely to compromise some of the environmental considerations relating to the advancement of citizens' rights to enjoy a healthy natural environment, especially if the current reliance on coal-based energy remains unchanged. Key in this regard is the confluence of service delivery with energy

---

[3] See sections 26 and 27 of the South African Constitution

security, where the latter refers to meeting citizens' and businesses demand for electricity, while ensuring that the source of electrification and energy is sustainable, affordable, and does not further compromise the quality of the natural environment. While South Africa does have a White Paper on the Promotion of Renewable Energy and Clean Energy Development (2002) aimed at shifting the country's energy portfolio away from its reliance on coal to renewable sources of energy, many commentators argue that some of the targets and timeframes government has set for itself are not far- reaching enough in terms of scope, and that the regulatory and enforcement instruments are insufficient to ensure effective compliance.
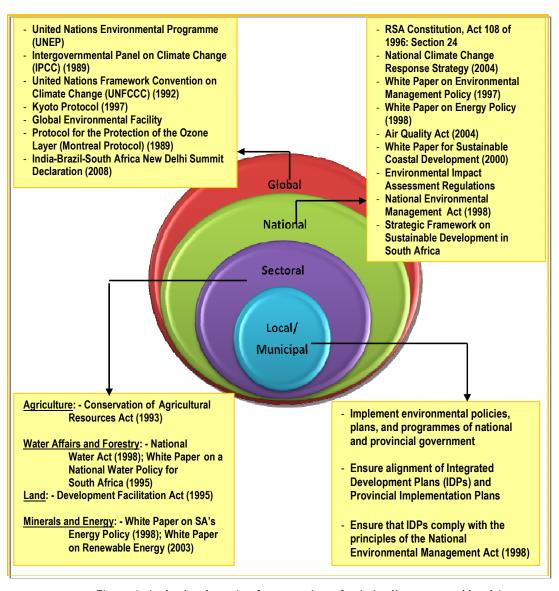
United Nations Environmental Programme (UNEP)
- **Intergovernmental Panel on Climate Change (IPCC) (1989)**
- **United Nations Framework Convention on Climate Change (UNFCCC) (1992)**
- **Kyoto Protocol (1997)**
- **Global Environmental Facility**
- **Protocol for the Protection of the Ozone Layer (Montreal Protocol) (1989)**
- **India-Brazil-South Africa New Delhi Summit Declaration (2008)**

- **RSA Constitution, Act 108 of 1996: Section 24**
- **National Climate Change Response Strategy (2004)**
- **White Paper on Environmental Management Policy (1997)**
- **White Paper on Energy Policy (1998)**
- **Air Quality Act (2004)**
- **White Paper for Sustainable Coastal Development (2000)**
- **Environmental Impact Assessment Regulations**
- **National Environmental Management Act (1998)**
- **Strategic Framework on Sustainable Development in South Africa**

Global

National

Sectoral

Local/ Municipal

Agriculture: - Conservation of Agricultural Resources Act (1993)

Water Affairs and Forestry: - National Water Act (1998); White Paper on a National Water Policy for South Africa (1995)
Land: - Development Facilitation Act (1995)

Minerals and Energy: - White Paper on SA's Energy Policy (1998); White Paper on Renewable Energy (2003)

- **Implement environmental policies, plans, and programmes of national and provincial government**

- **Ensure alignment of Integrated Development Plans (IDPs) and Provincial Implementation Plans**

- **Ensure that IDPs comply with the principles of the National Environmental Management Act (1998)**

Figure 1: Author's adaptation from a review of existing literature and legal Acts

Clearly, the elaborate legislative and regulatory architecture that is currently in place in South Africa is likely to be ineffective if the institutional mechanisms and financial resources meant to implement them are not effective. Just as the international environmental and climate change governance regime amounts to naught in the absence of nation-state mitigation and adaptation strategies, so do national legislative provisions that have to depend on one of the chief instruments for government policy implementation that is incapable of fulfilling this function. As will be discussed and argued, local authorities are the ineffective primary institutions for implementing government policies responses to the challenges of climate change and environmental conservation. Charts 1 and 2 show provincial expenditure on environmental management programmes across the three provinces in which the selected metropolitan municipalities are located, and the transfers made by provincial government to local authorities respectively for environmental management programmes.
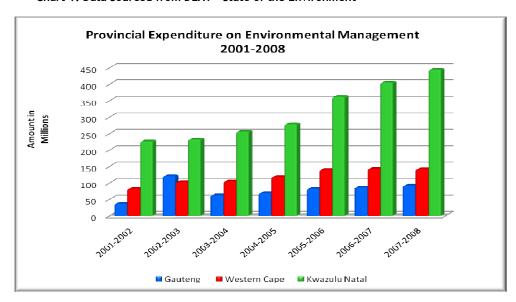
Chart 1: Data Sourced from DEAT – State of the Environment[4]

Chart 1 shows that over the past few years the provinces have been increasing the level of attention and resources given to environmental management programmes, one key component of which is climate change. However, it is not clear what proportion of provincial expenditure was allocated specifically to mitigating climate change and adapting strategies. Nonetheless, with the exception of Gauteng, KwaZulu-Natal and the Western Cape Province have increased their budgetary allocations steadily from 2001 to 2008, suggesting the

---

[4] http://soer.deat.gov.za/indicator.aspx?m=489

increasing importance of these programmes during this period. Chart 2 shows that the Gauteng provincial allocation has remained comparatively lower than the other two provinces. After increasing significantly during the 2002/3 financial year, the allocation was reduced noticeably in the following financial year and increased only slightly for the subsequent financial years to 2007/8. The fact that Gauteng allocates fewer resources to environmental management programmes suggests that this is not as important a policy priority as it is for the other two provinces, despite the fact that the province is the economic hub of the country, susceptible to major environmentally harmful economic activities.
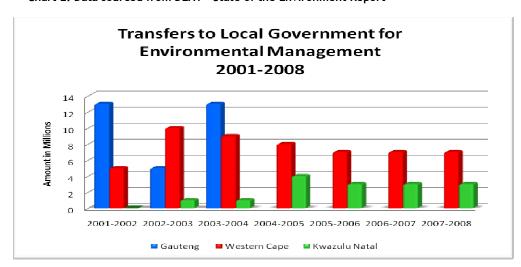
Chart 2: Data sourced from DEAT – State of the Environment Report[5]

Chart 2 paints a less flattering picture for the three provinces. It would be reasonable to expect a pattern of provincial budgetary transfers to local government reflecting a similar steady increase in provincial expenditures as shown in Chart 1. Instead, Chart 2 shows that budgetary transfers to the local authorities for environmental management programmes, as reported by DEAT (2008)[6], have been fluctuating over the period 2001/2 to 2007/8. In addition, transfers to local authorities for environmental management do not appear to be aligned with reported provincial expenditure on environmental management between 2001 and 2008. For example, in KwaZulu-Natal, expenditure on environmental management rose to R400million by 2008; however, transfers to local authorities reached a peak of R4million in

---

[5] http://soer.deat.gov.za/indicator.aspx?m=491 - Data of Gauteng provincial transfers to local government for environmental management for 2003/2004 – 2007/2008 not available on site.

[6] http://soer.deat.gov.za/themes.aspx?m=139

2002/3 and in subsequent years declined or leveled off until 2008. It is interesting to note that while the Gauteng province appears to spend less than both the Western Cape and Kwazulu Natal on environmental management; provincial transfers to local government are the highest. This could suggest that of the three provinces, the local government authorities in the Gauteng province are charged with a significant responsibility for addressing environmental issues, with provincial authorities seemingly playing a less active role compared with their counterparts in the other two provinces.

In contrast, the Western Cape allocated fewer funds to environmental management than KwaZulu-Natal towards its own environmental management expenditure programmes, but has granted more funds towards its local authorities for environmental programmes than has Kwazulu Natal. Interestingly, Chart 2 shows clearly that there was a sudden and significant increase in the transfer of funds to local authorities in Gauteng and Western Cape for the 2002/3 and 2003/4 financial years. The reason could have been the global focus on environmental issues that resulted from the World Summit on Sustainable Development (WSSD) held in Johannesburg in 2002. The glare of international publicity on environmental issues in the wake of the Summit may have motivated policy makers in the provinces to allocate more funds to this area. Gauteng, however, failed to sustain funding flow after the WSSD, while the other provinces did. Chart 2 shows that Gauteng's transfers were terminated immediately after the 2003/4 financial year.

Charts 1 and 2 show smaller volumes of budgetary transfers to municipalities compared to the amounts that the three provinces are spending on their own environmental management expenditure programmes. This tendency by the provinces, combined with the clear inconsistency in the flow of these funds, does suggest that municipalities spend less than the provinces on environmental management. The likely contributing factors to this volatile and inconsistent flow of financial transfers to the local authorities will be discussed in greater detail later in this report, as we present and discuss the findings from the three case studies. However, the inconsistency already mentioned becomes a critical problem only if the local authorities do not have adequate financial resources of their own to allocate to environment programmes. Yet, based on the interviews conducted for this study, it would appear that this inconsistency has been a factor in exacerbating some of the problems that many of the informants have identified as impacting on the work of the local authorities – i.e. inadequate financial resources and the general lack of the necessary technical skills to strengthen the capacity of the local authorities to respond effectively in addressing environmental, economic and human vulnerabilities caused by climate change.

3.   LOCAL GOVERNMENT AND CLIMATE CHANGE: CHALLENGES AND PROSPECTS

Local or municipal government represents the third tier of government in South Africa, the first two being national and provincial government. The chief mandate of local government is to implement policies and programmes as mandated by the national and provincial spheres, as well as act as the principal mechanisms for service delivery to local communities. As part of the post-apartheid state's reconstruction and redress agenda, local government has undergone drastic reforms in keeping with the new Constitutional order and the new social development priorities. One of the primary characteristics of local government in South Africa is its developmental orientation – local government has a mandate to work in collaboration and consultation with the communities in which it is located to advance their socio-economic interests and priorities. This is to be achieved by meeting the basic needs of residents like housing, health care, sanitation, water, electricity, and other basic social services. In addition, the local sphere is mandated to facilitate local economic development and engage in local development planning processes for their areas of jurisdiction, involving local communities in these planning processes.

Although a range of reforms have been introduced to ensure that local governments in South Africa operate on the basis of its new Constitutional mandate in collaboration with provincial and national governments, there remain fundamental challenges to realising the envisioned developmental local government. Among these are issues of poor accountability, ineffective and poor financial management practices, shortage of technical skills and human capacity, and serious problems undermining effective service delivery.[7] Many commentators have argued that the localisation of governance has the potential to make local authorities more accountable and responsive to the needs of the communities in which they are located. However, the lack of financial resources and skills undermines the capacity of local authorities to discharge these responsibilities. Indeed, as Schoeman (2005) contends, local authorities in South Africa have assumed a complex and huge set of responsibilities without adequate capacity to fulfill their assigned functions, especially given that their independent sources of revenue (such as donor funding from development agencies) are restricted, in some cases non-existent. All these weaknesses are present despite the transformation and state rationalisation processes undertaken by the government to address apartheid era economic inequalities. However, there is consensus that a strong institutional foundation has been laid for a developmental local government to fulfill its responsibilities, provided that the glaring capacity and other constraints are addressed urgently.

---

7 Ministerial Advisory Committee: Interim Report on the Challenges Facing Local Government

3.1 Metropolitan Municipal Responses to Climate Change

As noted earlier, cities are important sites for analysing the possible effects of and responses to climate change. Given their high concentration of economic activity and people, they are major contributors to gross domestic product, but invariably do so in ways that contribute to high GHG emissions. Furthermore, in light of their high population densities, when extreme weather conditions prevail, cities can also become sites of human insecurity and infrastructural devastation. Some of the more visible effects of climate and related environmental problems in the cities – such as the high risk of flooding and storm surges – have potentially severe consequences, including a decline in economic investment as local businesses and investments move to less vulnerable locations. Extreme vulnerability to adverse climatic conditions can be a disincentive to potential investors, with consequent lack of employment creation that has a knock-on effect on revenue sources for municipal authorities. Other effects of climate change and related environmental threats, such as decreased economic output in cities, also ultimately have an impact on human security and livelihood. Furthermore, higher population densities in cities make the spread of communicable diseases associated with climate change a serious threat to the capacity of existing healthcare infrastructure, intensifying stresses that might already exist, especially in poor and developing countries.

It is against this backdrop that the cities of Cape Town, Johannesburg and eThekwini have embarked on a series of interventions with regard to mitigating climate change and adapting policies. The rest of this report is devoted to outlining and assessing the strategies developed by the three cities to address climate change. The report will draw on a number of primary and secondary sources – existing literature, official reports and other publications, as well as interviews conducted with informants from the three cities.

Much of the current momentum in the three municipalities on the need to deal with climate change policy challenges is a result of the greater global attention and drive to increase awareness and action in this regard. Also important is the recent energy crisis in South Africa that sparked earnest debate around issues of national security of energy, energy efficiency, and renewable energy sources, which ultimately have a bearing on environmental conservation and climate change. Despite this greater global focus and awareness, it is clear that this challenge continues to be treated as residual in terms of major policy concerns in the three municipalities. Another important issue that will be discussed is that the ability of a municipality to deal effectively with and institutionalise climate change as a policy priority depends not only on capacity in the form of people with the necessary knowledge and technical skills, but also on the type of municipal institutions and structures put in place to deal with climate change. It is clear that the institutional arrangements and structures for addressing climate change across the three municipalities vary; resulting in differing policy approaches and responses to the challenges posed by climate change. This ultimately results

in divergent policy responses that render the task of consolidating a nation-wide municipal climate change responses difficult to achieve.

3.1.1 The City of Cape Town

The City of Cape Town was the first to adopt an Integrated Metropolitan Environmental Plan (IMEP)[8] in 2001. This is a policy framework within which all environment-related challenges would be addressed and policies developed. Through the IMEP, the city has also adopted the word 'environment' in terms of the natural, the built and the socio-cultural environment. The approach to conservation and environmental protection is based on a model that recognises the symbiotic relationship between the human and the natural environment, as well as the need to forge a less harmful and more sustainable relationship between them through sound conservation strategies that address the myriad forms of vulnerability of both humans and the natural environment. Hence the reference made to the socio-economic and service delivery responsibility of the City to its residents, as well as the obligations of both residents and City officials to develop and maintain an environmentally sound and sustainable city; this is in keeping with the principles of environmental integrity and sustainability. Key documents such as the City's Energy and Climate Change Strategy (2005) and the Framework for Adaptation to Climate Change in the City of Cape Town (2006) are both examples of the increasing prioritisation of climate change on the municipality's policy and development agenda, both of which have been formulated in line with the recommendations and priorities set out in the IMEP.

In addition, the IMEP, as the overarching policy framework, is intended to aid the City's compliance with both national and international regulations on environmental and climate protection. Guiding the IMEP's implementation is a range of principles in keeping with sustainability, efficiency and effective local governance and management towards the realisation of the City's Vision 2020. This vision includes improved air, water, sea, and land quality, and an environmentally conscious citizenry in partnership with City authorities in maintaining a healthy environment. Underlying the Vision are two basic principles:

- protecting natural resources, and

- maximising their benefit to all residents of the City of Cape Town and maintaining a holistic approach to the environment.

The City of Cape Town has also supported important research activities which have provided the empirical basis for the strategies that it has adopted to manage and respond to climate change – that is, a research- and knowledge-based policy approach, which, coupled

---

[8] Integrated Metropolitan Environmental Policy (2001)

with the international focus on climate change, has been instrumental in increasing the political will to respond to such change. Evidence of this can be seen in the City's spatial planning and urban design strategies, where according to a senior official in the Spatial Planning and Urban Design Unit at the municipality, the risk assessment studies that were conducted on the threats of rising sea levels have, in turn, informed the proposals that are made in terms of city-wide spatial planning and land-use management decisions in areas that are close to coastal zones and therefore potentially at risk. The focus on urban design and planning is also about creating more green buildings and more efficient forms of cooling and heating buildings which form part of the City's Green Building Guideline that will in future require that new property developments use solar heating. This forms part of the City's adaptation strategies to climate change, where attempts are being made to ensure that the built environment and other physical infrastructure are of such quality as can withstand changing weather patterns and more frequent extreme weather conditions.

Another example of adaptation interventions can be seen in the municipality's policy of retrofitting ceilings in houses that did not have these, so as to maximise the heating and cooling of such homes, many of which fall into the category of social housing. It is therefore quite clear that the City has allocated resources and expertise to researching and increasing local understanding of the risks and challenges posed by climate change, and is thus making a concerted effort to prioritise climate change in its development and policy programme.

The City of Cape Town has expressed three key areas that support the City's development vision and will be the centre of initiatives relating to climate change. These aligned outcomes envisioned for 2014 are captured by the following three priorities: shared prosperity, an inclusive and equitable society, and an ecologically sustainable future. With these as the guiding principles of development, Cape Town's framework has identified seven (7) areas/sectors of intervention based on the city's vulnerability analyses. Given Cape Town's geographical location, effective coastal management and conservation is one of the most urgent areas for intervention. Indeed, as highlighted by one of the interviewees, the risk of rising sea levels as a result of increases in global temperatures and the risk of storm surges can result in environmental, social, and economic threats[9]. With regard to the latter, given that the City's main economic asset vests primarily in its vast biodiversity and the tourism industry that has developed in light of its natural endowment, the economic security of the City is likely to face increasing pressures should effective adaptation strategies not materialise. The possible social impacts of these threats, as a respondent pointed out, are that the slow pace in the delivery of essential services like adequate housing, health care, and other infrastructure heightened the vulnerability of poor communities to the adverse effects of unpredictable weather and climatic conditions: "so the vulnerable are going to be more vulnerable, which poses a huge challenge for the city in terms of the services that have to be provided" (ibid).

In the light of environmental concerns the Cape Town metropolitan municipality's Integrated Development Plan (IDP: 2007/8 – 2011/12), added an eighth strategic focus area in its 2008 IDP review process[10]; Energy Efficiency for a Sustainable Future and an Energy Committee. This Committee leads the climate change agenda at municipal Council level, which is the highest political and administrative forum within municipalities, lending political support and financial resources to adaptation and mitigation strategies.

The incorporation of what has become the third strategic focus in the IDP was largely influenced by the then emergent financial crisis of 2008, and the domestic energy deficit, which was attributed to the lack of adequate planning by Eskom. Although the energy crisis had nothing to do with climate change, it nonetheless sensitised citizens and municipal officials to energy efficiency, and by extension, concerns with finite resources and the natural environment.[11] In the light of the popular concern with energy efficiency, the City of Cape Town saw an opportunity to link energy concerns with broader efficiency issues, as well as tying these in with climate change and protecting the environment. As noted by an official from the Western Cape Department of Environmental Affairs and Development Planning: "There is huge focus worldwide [on climate change] and one can hang a lot of sustainable development planning on that" (ibid). Similarly, the official stressed that South Africa's electricity crisis of 2007/08, coupled with the significant rise in the cost of oil and hence transportation, drew people's attention to the fact that many of the world's natural resources are finite and that current consumption levels are therefore not sustainable. To a large extent, prioritising climate change on Cape Town's policy agenda reflects both domestic concerns with energy security as well as the international profile that climate change has received, particularly also as negotiations for a post-Kyoto international climate change regime are about to commence.

Linked to this prioritisation process has been the steady increase in the size of the environmental management department, which, according to one of the interviewees, has grown from approximately twenty (20) people to about 240, spread across a range of activities in conservation and environmental and biodiversity management more broadly. Not surprisingly, the City's research activities have ranged across these areas, thus providing the required information for the research-based approach to climate change that is evident in Cape Town.

---

[9] City of Cape Town Environmental Resource Management Department - Interview conducted on Friday, 14 November 2008

[10] The initial IDP document contained seven (7) strategic areas for municipal planning and intervention. These are: Shared Economic Growth and Development; Sustainable Urban Infrastructure and Services; Public Transport Systems; Integrated Human Settlements; Safety and Security; Health, Social, and Human Capital Development; and Good Governance and Regulatory Reform

[11] Deputy Director for Biodiversity Management in the Western Cape Provincial Department of Environmental Affairs and Development Planning - Interview conducted on Monday, 17 November 2008

Notwithstanding the increased political will to address climate change strategically, and the resources that have been directed at increasing knowledge about the likely impacts in Cape Town, significant challenges remain. A huge consideration in terms of the allocation of financial resources is related to the number of competing social and economic responsibilities to which the City has to respond. As another official pointed out during the interview, initiatives that aim to adapt to climate change or mitigate the possible effects thereof, requires foresight and sophisticated planning around pre-emptive strategies. In a context of high inequalities in terms of access to important social services like housing and sanitation, justifying the allocation of scarce financial resources to unknown future events that might or might not materialise is not an easy task: "Most of the line functions involved in delivering [social] services are operating in more of a crisis-management or reactive mode, trying to work very quickly to improve the situation [of impoverished residents]." Furthermore, incidences of extreme weather conditions have exacerbated the demand for rapid response emergency services, particularly in informal settlements and other locations that have historically had limited – if any – access to such services. Under these circumstances, municipal authorities have highlighted this challenge of meeting current needs for social and infrastructure services speedily, while also trying to ensure that the social housing that is provided can withstand the possible threats and risks that might be occasioned by climate change in the future. Indeed, "when you want to implement change … in terms of how we deliver social housing: [i.e.] the design of the house, the products we might use [for constructing it] … [installing] solar water heaters – to bring these kinds of things into a programme that is really being driven at the fastest rate possible just to deliver basic social housing and other services is not an easy thing" (ibid). This is linked to the challenge of changing officials' mindsets about how to think about service delivery; that is, introducing approaches to planning and implementing policy in a manner that is consistent with the new emphasis on sustainability and environmental awareness.

Although huge financial and other resources have thus been increasingly directed at addressing climate change as a strategic policy issue in the municipality, there nonetheless remains a concern with the allocation of even more resources, including greater capital and operating budgets, to climate change-specific programmes, particularly at the level of implementation and project roll-out.

3.1.2 Ethekwini Metropolitan Municipality[12]

Durban is the largest port city on Africa's eastern seaboard, with a population of 3.5 million people and a municipal budget of R23,4 billion (Roberts 2008). Durban's population makes up 30 per cent of the total population of KwaZulu-Natal and constitutes 60 per cent of the

province's economic output (eThekwini Municipality Long Term Development Framework 2001). Durban is therefore a key economic node both to KwaZulu-Natal and to South Africa in general. Like other large cities in South Africa, the city's municipal budget is tightly stretched, as it addresses many demands on its resources. Basic human development is a major challenge, with a 43 per cent unemployment rate, a housing backlog of 190 000, a high mother-to-child HIV infection rate, and the need to provide community and basic services in a sustainable manner for all the residents (ibid). The human developmental challenges facing Durban are best described by residents themselves as expressed through annual quality of life surveys in the city that measure residents' perceptions of personal wellbeing.[13] Many households in Durban indicate they are unable to afford the basic necessities such as shelter, water and electricity. O'Leary (2007) lists the main reasons for dissatisfaction among Durban's people as being: illness (47 per cent of respondents listed this as a main reason) unemployment (22 per cent) and financial problems (18 per cent). A general worry expressed by 66 per cent of respondents surveyed, was whether or not they or someone close to them was HIV-positive (ibid).[14]

Durban's development priorities are best illustrated in its Capital Budget Allocation outlined in its Eight Point City Delivery Plan.[15] Table 1 shows, that the priority expenditure for Durban in the period 2006-2009 was economic development and job creation. One of the smaller budget allocations for this period is in the area of sustaining the natural and built environment and in enhancing the quality of living environments.

Table 1: Durban's Capital Budget Allocation for select plans/projects identified in its Integrated Development Plan (2006-2011)

Plans	06/07 (Rm)	07/08 (Rm)	08/09 (Rm)
Sustaining the natural and built environment	2.0	1.8	2.2
Economic development and job creation	321.130	540.691	637.407
Quality living environments	2,028.058	2,080.753	2,193.588
Safe, healthy and secure environment	62.460	69.000	59.750

On the environmental plane, Durban is situated in an ecologically sensitive area, and climate change is likely to see an increase in the daily maximum temperatures, increasing rainfall, and rising sea levels. The consequences are likely to be decreased agricultural productivity, increased soil erosion from flooding, loss of biodiversity and ecosystems, and

[12] This section of the report was prepared by Robin Richards (Senior Researcher – Centre for Policy Studies)

[13] Findings are based on annual Quality of Life Surveys undertaken by the Municipality since 1997. The purpose of these surveys is to assess whether the implementation of development programmes in the City is resulting in changes in perceptions of people's Quality of Life, to guide policy makers in their plans for human development. The annual survey is based on a representative sample survey of residents of Durban.

damage to social and physical infrastructure, which will likely affect tourism and threaten the safety of its citizens, especially those who are living in low-lying areas such as along the coastline and in riverine areas (eThekwini Municipality Environmental Management Department, 2007).

In response to these concerns about the consequences of climate change for Durban, the city has produced an array of policy documents and plans outlining possible strategies for mitigating these consequences, and also adapting to this environmental phenomenon. The City's vision lists seven basic goals that Durban aspires to and these reflect the diverse challenges facing the metropolis. For example, the Vision says that "…all citizens, the business community and visitors must have access to economic opportunities … and a clean and green city" (eThekwini Municipality Integrated Development Plan 2010 and Beyond, p 10). While there is increasing emphasis on creating economic opportunities that are environmentally and economically sustainable, it is clear from the example of developed countries, as well as those that have recently embarked on rapid industrialisation (like China and India) that industrial and economic opportunities often do not complement the vision of environmental integrity and conservation. The attainment of eThekwini's Vision, as is the case with the other two metros, is characterised by contradictions, tensions, and trade-offs.

The Imagine Durban Project is a further initiative led by the City Council.[16] The project aims to imagine what Durban will be like as a place in which to live in 10 to 50 years' time, and to develop a strategic action plan[17] to address some of its development challenges. The Action Plan proposes to reduce unemployment by 25 per cent in 10 years, and by 50 per cent in 20 years. In 50 years' time Durban aims to secure sustainable livelihoods for its citizens. To achieve these goals, the Action Plan proposes multiple strategies that include:

- enhancing livelihood choices for people living on the urban fringe of the city in impoverished settlements by tailoring policies, especially concerning service delivery, to support the livelihood choices of poor households;
- Food production: to promote urban agriculture and households cultivating their own vegetable gardens. The different spheres of government are meant to support this initiative through the provision of information and training on food production techniques;
- Skills development and the promotion of small and medium-sized businesses.

The Environmental Management Department within the municipality has also published a report on climate change that lists its plans and current activities for mitigation and adaptation. For example, Durban has identified the development of an efficient public transport system as well as an increase in renewable energy sources as key strategies. In

---

[16] http://www.imaginedurban.org/

addition, the City has developed an environmental management plan that involves the working together of the Environmental Management Department, the Parks, Leisure and Cemeteries Department, conservation groups and private landholders, to protect the city's open spaces as well as the biodiversity and ecosystems of these spaces (ibid). Other projects include the development of an energy strategy and action plan aimed at reducing GHG. The plan is meant to guide municipal departments and major energy users on ways to increase their energy efficiency in line with National Energy Efficiency Standards (ibid). Other projects include energy efficiency audits on municipal buildings, a landfill-gas-to-electricity project through its Clean Development Mechanism (CDM), as well as plan to host a 'carbon neutral' 2010 World Cup Soccer event. Durban also has a range of adaptation programmes, including a Water Loss Management Programme and an Urban Agriculture Programme.

The municipality's CDM project is not only the first of its kind in South Africa, but it is also the largest in Africa. This is a significant achievement in that it not only demonstrates South Africa's commitment to playing a leading role in the mitigation of climate change, but it also demonstrates how countries on the continent (and the global South more generally) can meaningfully contribute to the global climate mitigation effort. However, the start-up costs involved in establishing a CDM, as well as the challenges posed by trading in the nascent carbon market, present an onerous responsibility for even the better-resourced municipalities like eThekwini. As highlighted by an official in the eThekwini metropolitan municipality:

> Developing a CDM project is a very complex and resource intensive process. The types of skills required to initiate or manage such projects either do not exist or are very scarce at the local government level. The transaction costs are also high and probably could only be met by the larger local governments in South Africa. Given the experience that we have had with CDM, I would be very weary of more CDM projects.

The scope of Durban's policy documents and plans dealing with climate change directly or as a cross-cutting issue, included within its sustainable development objectives, is impressive and suggests that there is a broad concern with addressing this issue amongst city leaders. Furthermore, this wide array of policies and strategy documents suggests that the eThekwini metropolitan municipality has made significant progress with respect to the policy-formulation side of climate change, thus creating a coherent policy framework within which to respond to the challenges posed by climate change. The following section examines some of the key challenges facing Durban with respect to implementing its climate change plans and policies. These challenges include: a lack of co-ordination between the various departments within the eThekwini municipality, a lack of co-ordination across the different spheres of government, weak co-operation and exchange of information between Durban and

---

[17] See: http://www.imaginedurban.org/index.php/Theme-4-Sustainable-Livelihoods.html

other municipalities in the country, a lack of understanding and knowledge of climate change issues among municipal officials, and limited community awareness about, and involvement in, the issues.

It appears that many of the projects that address climate change are in their infancy, even though Durban initiated a Climate Change Protection Programme in 2004 (2009/2010 IDP Review). A point that was raised by an official within the Municipality was that very little progress had been made on climate change as a focused policy issue and many of the community-based projects to address climate change are only in the pilot phase. However, given the cross-cutting nature of climate change, this phenomenon is also being addressed within the Biodiversity Planning Branch, housed within the Environmental Management Department, with the result that it is difficult to separate climate change interventions from the broader environmental management programme within the City. However, this could well be an advantage, in that it could lead to the broad integration of climate change into the municipality's general approach to conservation and natural-resource management. However, given that the Environmental Management Department is not a key unit in the municipality, and already has both its human and financial resources quite stretched, couching climate change strategies within this framework is likely to do little towards expedient and sustained municipal action. As can be seen from the municipality's capital expenditure on climate change programmes and issues dealing with the environment, employment creation and economic development have been prioritised far more than have environmental issues (see Table 1); a situation which must undoubtedly have an impact on the implementation of plans relating to climate change in particular and environmental issues in general. Indeed, as confirmed by an official in the municipality, even though there has been some increased attention to climate change, the concomitant financial and human resource investments that are required to accelerate the implementation of the municipality's plans have yet to be made.

One of the obstacles has been identified as a lack of awareness within the senior management structures in the city, and staff in other line-function departments.[18] Roberts (2008) highlights that one reason is the nature of climate change projects that have been implemented in Durban. For example, the development of the GHG gas inventory and the building energy efficiency projects, were projects that consultants were commissioned to undertake, in a context where the consultant work was overseen by municipal staff that did not have a real understanding of why these projects were being implemented in the first place (ibid). A symptom of municipal staff's lack of awareness of the complexity of climate change and its consequences is the apparent weak co-ordination between the various service departments and the Environmental Management Department. Climate change has therefore

---

[18] Interview with Policy Coordination and Implementation, Environmental Management Department, 20 November 2008.

not been mainstreamed with the policy programmes of the service departments (such as water and health) in the municipality. As highlighted below, service units have failed to engage with the Municipal Environmental Management Department with respect to their own plans and the ways in which their various line functions could be integrated with environmental and climate change issues:

> In an ideal setting…each of these sectors should be coming to us and saying these are the predictions and projections. We should be working together on a work-group type set-up to coordinate policy and allocation of funds[19]

Co-ordination between the municipality, other municipalities (including metropolitan municipal authorities), national government, and the provincial sphere of government is also poor. The following comment highlights the issue:

> The level of interaction is very poor, at least with the national government. The National Climate change Council has invited local government to some of their sittings but what actually happens is not so much a debate rather than the Department of Environment and Tourism (DEAT) giving reports and feedback on its own projects[20]

Although the South African Local Government Association (SALGA) prepared a climate change compact at the 2008 National Summit on Climate Change in Johannesburg, which resolved that municipalities should co-operate towards solving these problems, there do not appear to be any substantive programmes or initiatives that signify much co-operation between Durban and the other municipalities. There were, however, plans to bring municipalities together through the Local Government Climate and Environment Indaba, hosted by SALGA in July 2009, to share information about what municipalities are doing to address the issue of climate change.[21] Notwithstanding this initiative, inter-municipal co-operation and the sharing of ideas and strategies on climate change appear to be infrequent. Given the complexity of this issue, more regular interaction and the sharing of information is necessary. The following comment highlights the Durban context:

> We do interact a lot more with the City of Cape Town mainly because we are both coastal municipalities and therefore have quite a lot of similarities on which to engage regarding marine biodiversity and conservation. However, on the whole, the nature of the interaction tends to be quite sporadic, especially communication and engagement with the in-land municipalities.[22]

Even though the large metropolitan areas have greater capacity (in respect of skills and resources) to implement policies focusing on climate change, the larger cities such as Durban

---

[19] Interview with Policy Coordination and Implementation, Environmental Management Department, 20 November, 2008.
[20] Interview with Biodiversity Planning Unit, 10 November, 2008
[21] Interview with SALGA, Municipal Infrastructure and Services Department, 6 July 2009.
[22] Biodiversity Planning Unit, op.cit.

have their own implementation challenges which many smaller municipalities do not have. One of these is breaking the bureaucratic logjam, which slows the introduction of new policies and programmes dealing with the issue. This is highlighted in the comment made by an official in eThekwini:

> In terms of implementation measures to address climate change, it was the little municipalities who could effect much more immediate change than the larger because of the sheer paper-work, administrative requirements, and bureaucracy – just to get on a plane to go to a meeting, for instance, Potchefstroom has to call one person while I have to get about five signatures. It is very difficult to turn those big beasts around. Even though we appear to be more capacitated in terms of skills and funding etc, to get change mainstreamed into the system is extremely difficult – it is a task that is easier within the smaller municipalities than the bigger ones.

The institutional flexibility of rural municipalities notwithstanding, the limited interaction between the eThekwini metropolitan municipality and the smaller rural municipalities in KwaZulu-Natal is likely to have devastating policy and climate change outcomes for these municipalities. Not only do these latter municipal authorities remain at the fringes of important climate change initiatives, as a consequence of their peripheral location, they are also unlikely to be in a position to influence national debates and the prioritise rural impacts of these issues. This important institutional resource, namely flexibility, will therefore remain untapped, so undermining the capacity of rural municipalities to adapt to climate change.

Although the eThekwini metropolitan municipality has a stated goal in its Eight Point Plan (IDP 2006) of good governance and empowering citizens, educating and informing citizens at the local community level about issue of climate change has been neglected and needs further attention. Richards (2008) found that within some municipalities in South Africa, there appears to be poor planning for education and awareness-raising initiatives to communities on climate change. The eThekwini metro seems to be no exception in this regard. For example, in its Annual Report of 2006/2007, the Service Delivery Budget Implementation Plan (SDBIP) has programmes for community outreach and awareness under its Sustaining the Natural and Built Environment Sector. This includes one focus group per quarter (eThekwini Annual Report 2006/07).[23] For a population of 3.5 million residents, more focus groups and community meetings will have to be convened throughout the metropolitan area of the municipality's residents are to be empowered (a stated goal in its Eight Point Plan listed in its Integrated Development Plan of 2006-2011) with knowledge of the effects of climate change, its significance for the natural and built environment (including its consequences for citizens living in vulnerable areas) and how residents of the city can themselves play a role in dealing with the effects of climate change at the

---

[23] EThekwini Annual Report 2006/7. eThekwini Municipality

local/community level and at a more generic level. While the municipal authority would have to drive the mitigation and adaptation agenda through household interventions, such as improving insulation and the design of houses to maximise resilience to the elements, there is scope for communities themselves to drive grassroots interventions such as recycling and caring for their natural environment.

That there is limited interaction between municipal officials and communities on the issue of climate change is not surprising, given some of the challenges that exist at local government level across the country with regard to sustained and effective interaction between the local authorities and residents. It can be expected that with an issue as complex and technical as that under discussion, and one that is likely to have unknown future impacts – as opposed to current visible impacts – municipal engagement with local communities is likely to remain difficult to cultivate and maintain. As was pointed out earlier, however, in the City of Cape Town the Eskom energy crisis was an important factor in helping to bring climate change and energy efficiency to citizens' attention. These blackouts therefore provided an entry point for municipal officials to spark some public debate and initiate programmes at household and community level on responsibility for mitigating and adapting to climate change. To what extent the municipality did use this opportunity to raise the policy profile of the issue of climate change within and outside of municipal structures is unclear, although anecdotal evidence suggests that there could indeed have been far greater use of the energy crisis as a means through which to address the social and behavioural aspects of the debate in the province.

3.1.3 The City of Johannesburg

The Johannesburg metropolitan municipality is situated in South Africa's economic heartland in the Gauteng province. Incidentally, this is also the most densely populated province, owing to its smaller size relative to the other provinces, coupled with the highest levels of in-migration from other parts of the country as well as from outside South Africa. Not only is the province responsible for arguably one of the highest levels of GHG emissions as a result of its industrialisation levels, it is also one in which issues related to service delivery and state social provisioning are quite pressing. As highlighted in the province's State of the Environment Report (2004) there is a clear need for an integrated approach to social and economic development commensurate with the principles of environmental conservation and natural resource protection. The adoption of this integrated approach is particularly important in the light of service delivery needs in the province. For instance, the City of Johannesburg's Environmental Quality[24] survey found that in the most polluted areas in the province, townships and informal settlements were among the most severely affected by air, water, and noise pollution. Places such as Alexandra, Orange Farm, Diepsloot, and areas

---

[24] http://www.ceroi.net/reports/johannesburg/csoe/html/nonjava/Introduction/Background.htm

around Soweto have been identified as those with the lowest levels of environmental quality in the greater Johannesburg area. Diepsloot, Alexandra, and Orange Farm are essentially informal settlements with poor access to proper sanitation, energy sources, and housing (ibid). As noted in the survey: "[these service backlogs] coincide with the conditions of poverty among the local communities of the area, and forms a vicious cycle of environmental degradation and poor environmental and human health quality." An integrated and sustainable model for to service delivery is not only essential for maintaining and protecting the natural environment in these areas, but is ultimately a priority for enhancing the lives of the communities that reside in these parts of Johannesburg.

It is in light of this dire socio-environmental state of affairs that the City of Johannesburg has identified climate-proofing for low-income households as a priority area through which to address the developmental and environmental challenges that it faces. In keeping with this agenda, Johannesburg has identified a few key interventions, including the installation of solar water heaters in 171 low-income homes in Cosmo City,[25] the development of basic design guidelines for energy-efficient buildings, the installation of solar street lights for township electrification, and investing in the Bus Rapid Transit system called Rea Vaya (Phalatse 2008). Johannesburg has also committed to 'greening' the city by planting 200 000 trees by 2010, 60 000 of which had already been planted by September 2008. Because Johannesburg contributes the most to national output, one of the other areas of municipal intervention has had to be energy security, which gained added impetus after Eskom's energy crisis. A key response on the part of the municipality has been to think about how to regulate residents' energy demands. The City of Johannesburg hopes to achieve this by passing and implementing municipal bylaws that require property developments for middle- and high-income earners to be fitted with water solar heaters as a prerequisite for development approval. In hybrid (mixed-income) property development sites, such as Cosmo City, as well as social housing delivery in places like Alexandra, the municipality has also introduced a pilot programme through which solar water heaters have been installed into low-income homes. Through this initiative, an attempt is being made to construct a housing and service delivery model that not only responds to the basic needs of poor households, but does so in a manner that is consistent with energy conservation.

An important feature of this latter pilot programme is that it has largely been made possible by strategic partnerships between the municipality and the Danish International Development Assistance agency (DANIDA), which has made grant funding available for this pilot. In theory, introducing an alternative model of service delivery and poverty alleviation through initiatives that are climate-friendly is not only desirable, but should constitute the main approach to be adopted by developing countries. Without the necessary financial and technical support from international and other donor agencies, however, it is unlikely that

countries like South Africa will be able to synthesise the socio-economic concerns of the poor and the challenges presented by climate change through new models of service delivery. It is not only these types of international partnerships with funders and Northern municipal authorities, but partnerships across the different spheres of government are also key for ensuring effective levels of policy integration and coordination across government spheres and departments. To this end, the City of Johannesburg has recently approached the Department of Minerals and Energy (DME) with their CDM application.

Given the variety of climate and conservation-related initiatives that have been initiated in the Johannesburg metropolitan municipality, it would appear that there is indeed a significant degree of intra- and inter-governmental co-ordination. For instance, the installation of solar water heaters in low-cost housing projects was made possible by the co-ordination between the national and provincial departments of Human Settlements (previously the department of housing), the municipality's environmental department, and the environmental working group in the municipality's Mayoral Committee. This level of co-ordination notwithstanding, it was felt by one of the interviewees from the City of Johannesburg that the scope for co-ordination and inter-governmental partnerships has not been explored as deeply as it could have been.[26]

The different approaches within the national and local spheres of government to climate change suggest that co-ordination between the local and provincial spheres should be deepened. For example, whereas the Department of Minerals and Energy Affairs emphasises mitigation strategies, local municipalities place more stress on adaptation. Thus, while national departments might be willing to partner with local authorities on initiatives such as the installation of solar water heaters and in the transport sector[27] , initiatives such as the Rapid Bus Transit system, also aimed at the reduction of carbon emissions, has proved to be more difficult as regards eliciting similar levels of support for adaptation projects. This is exacerbated by the limited financial resources that are available to address the myriad of government commitments and policy priorities.

A further concern highlighted by an official in the City of Johannesburg is the seeming absence of the provincial tier of government from the climate change policy formulation and dialogue process. This is highlighted in the following comment:

> ...many of the cities are doing a huge amount of work around climate change mitigation and adaptation so there is a kind of policy vacuum – a seeming policy implementation vacuum – between central government and local government, a

---

[25] Cosmo City is a housing project in Gauteng's West Rand. It is one of South Africa's first mixed-income housing developments, with low-income houses built by the state and bank-financed houses.

[26] City of Johannesburg: Department of Environmental Planning and Management. Interview conducted on 11/12/2008

[27] See Air Quality Management Plan Implementation Regime and Implementation of the Air Quality Act (Act No. 39 of 2004), City of Johannesburg and the State of the Air Report for the City of Johannesburg

space that could possibly be filled by provincial government in South Africa but this has not happened and often it seems that provinces are not really present in the debate on climate change. Save for the Western Cape[28]

While the reasons for provincial government's absence from climate change policy debates are unclear, it may be that the differences in policy emphasis between the national and the provincial sphere pose a challenge to the role that provincial departments should play in the climate change debate (See Chart 2, which seemingly corroborates this claim in respect of Gauteng province). Despite this provincial vacuum, the same respondent reported that:

Some of the provinces are starting to get involved in the debate and clearly define their role around climate change and how they can start to work more closely with municipalities (ibid).

In terms of inter-municipal engagement and partnership within South Africa, the City of Johannesburg sees SALGA as a possible institution that can facilitate inter-municipal partnerships, particularly among the metropolitan municipalities. However, SALGA has only recently established a climate change desk and it is likely that an effective co-ordination function on the part of its climate change unit will only be possible over the next few years. As pointed out earlier, however, and particularly in the case of the coastal municipal authorities like the City of Cape Town and eThekwini, meaningful engagement, albeit sporadically, has been initiated and it can thus be expected that over time, these relations will be strengthened and extended. Much of the interaction between the major municipalities has also taken place through the South African Cities' Network, although this forum has been criticised for its skewed focus on energy security rather than more generally around climate change (ibid). Through the Network, visits to Germany for the purposes of knowledge exchange on renewable energy sources have been scheduled. The Network therefore works as both a platform for engagement for municipalities within South Africa, as well as a conduit for information and knowledge exchange between local authorities in South Africa and their international counterparts. These interactions, while they are important, nonetheless reinforce the marginality of rural municipalities in South Africa's debates on climate change. This is particularly a concern because of the possible impacts of climate change on South Africa's rural communities and the agricultural sector, which is a key source of employment for the rural poor. The rural areas are also critical for the production of food in South Africa. Rural municipal authorities must increasingly play a meaningful role in addressing the challenge of climate change as pressures of migration and food security, for both rural and urban households, will increase in a context where rural areas become increasingly vulnerable to the exigencies of climate change.

---

[28] Interview with the Environmental Planning and Management Department, 11 December 2008.

4. CONCLUSION AND RECOMMENDATIONS FOR POLICY ACTION

It is clear from the preceding discussion that the three major metropolitan municipalities are playing a significant role in setting and influencing the direction of the national policy agenda on climate change. Even more encouraging is the leading effort that has been made by the eThekwini municipality to initiate and run Africa's largest CDM project. All of these initiatives show a genuine commitment to prioritise the mitigation of and adaptation to climate change in the context of South Africa's socio-economic development. Indeed, all three municipalities have invested human, financial, and other institutional resources to raise the political and social profile of climate change as one of the key challenges to the country's future development. Across all three municipalities, the country's recent energy crisis has been critical for the emergence of a consensus among politicians and citizens that climate change is an important phenomenon that requires drastic action to curb the forecasted outcomes, although the levels of consensus vary across the different municipal locations.

Laudable as these extensive initiatives are, there are nonetheless important challenges that these municipalities face, particularly with regard to the required financial resources that are necessary for ensuring that climate mitigation and adaptation are not just stated policy priorities, but do in fact constitute a set of tangible actions on the part of municipal and national government. Decisions about the allocation of financial resources, as well as concomitant human resource allocations are not, however, abstracted from reality. They are an integral part of the many competing social, economic, and political choices that require local government officials to balance between immediate needs and priorities and longer-term considerations. Therefore it is imperative to have sustainability as a primary guiding principle and conceptual framework within which to analyse the decisions taken by officials. The balancing must take place within the context of competing socio-economic conditions that influence politics, and hence the processes and outcomes of policy debate at the local and national levels of government. In a country like South Africa, which is characterised by historically-determined levels of economic and political inequality, addressing the challenges presented by climate change has to be done in a manner that is not only democratic but one that progressively reduces the inequalities of the past.

In a few rare instances, it has been possible to strike this policy balance between addressing the immediate needs of citizens and addressing climate change through an integrated policy approach (for example, in the case of solar water heater installations for low-income social housing). However, as highlighted in the City of Johannesburg case study, this level of co-ordination and policy integration required a significant financial investment on the part of the municipality, and one that might not have been possible without the creation of partnerships between the local authority and an external funder (DANIDA). To this end, an important policy recommendation that can be made relates to the need for municipalities to intensify their attempts at raising financial resources and earmarking funds

for climate change programmes that are integrated with broader developmental projects. While it is tempting to advocate that budgetary allocations on the part of the central government should be increased, given the competing social and economic priorities of the state, relying mainly on government transfers will need to be revised towards greater fiscal autonomy on the part of metropolitan municipalities. This would not only ease central government's fiscal burden, so that the smaller (particularly the rural) municipalities can receive greater transfers; this would also enable metropolitan municipalities to autonomously determine their preferred climate response model as opposed to having to focus largely on climate mitigation in a context where a similar focus on adaptation might be necessary. This level of autonomy might further democratise the process of setting the priority climate response areas in that it might increase the chances of adopting a bottom-up policy approach; that is, an approach that is largely informed by the experiences and conditions at local municipal level, rather than policy impositions from the top.

It is important to highlight that this would only go as far as to democratise the internal functioning of the state on the issues of climate change, rather than democratising state-citizen relations on this matter. More work, however, still needs to be done to establish sustained and meaningful engagement between the state, particularly at local level, and its citizens on climate change and the environment, although this cannot be achieved without strengthening municipal structures and systems that are intended to facilitate increased public participation more generally. Granted, the technical complexity of the climate debate in and of itself is likely to militate against broad-based public interests and involvement in municipal debates on the subject.

Furthermore, with regard to the levels of engagement between municipalities, the evidence suggests that there is indeed scope for far greater information-sharing. Of the three metropolitan municipalities analysed here, only one among them, eThekwini, has set up a CDM project. While both Cape Town and Johannesburg are interested in pursuing a similar initiative, it does not appear that either one of them (or collectively) have approached the eThekwini metropolitan municipality to share its experiences of the CDM project. There is therefore a need for better coordinated strategic interaction among the municipalities, not least given their collective contribution to the economic output of South Africa, which is a characteristic that that renders them disproportionately responsible for GHG emissions in the country. It is not only among these three municipalities that sustained strategic information-sharing and broader engagement is necessary, but between municipalities in general, particularly between urban and rural ones. Given the resource constraints that are faced by rural municipalities, and their key location in the agricultural sector (which is important for food security and rural employment), the relatively higher levels of resource endowment among the urban municipalities could be utilised to aid municipalities that are located in the rural areas. To these ends, institutions like SALGA can

play an important role, although much still needs to be done to consolidate SALGA's recently established climate change unit.

Although there is still room to intensify the initiatives for addressing climate change at the local government level, the metropolitan municipalities have invested significant effort in developing sustainable responses to climate change. It is likely that over the next few years and in light of a new global climate change policy framework following the Kyoto Protocol, even more work will be done by local authorities in South Africa to mitigate and adapt to climate change. It remains to be seen how the necessary policy synergies across and within spheres of government will be developed that integrate the social and economic priorities of the country into a broader sustainable development approach.

References

Cities Alliance. 2007. Livable Cities: The Benefits of Urban Environmental Planning – A Cities Alliance Study on Good Practices and Useful Tools (Cities Alliance: Washington D.C) http://www.citiesalliance.org/activities-output/topics/cds/liveable-cities.html, Accessed January 2009.

Cities Environment Reports on the Internet. Undated. State of the Environment, Johannesburg, South Africa. UNEP/GRID-Arendal.

City of Cape Town. 2001. Integrated Metropolitan Environmental Plan.

City of Cape Town. 2005. Energy and Climate Change Strategy, City of Cape Town Environmental   Resource Management.

City of Cape Town. 2006. Framework for the Adaptation of Climate Change, City of Cape Town Environmental Resource Management.

City of Cape Town. 2007. Integrated Development Plan 2007/8 – 2011/12, City of Cape Town Integrated Development Planning, Performance, and Participation Unit.

City of Johannesburg. 2007a. *State of the Air Report*, Prepared by Gondwana Environmental Solutions on behalf of the Environmental Management Department of the City of Johannesburg

City of Johannesburg. 2007b. Air Quality Management Plan and Implementation Regime and Implementation of the Air Quality Act, Mayoral Environmental Committee.

Department of Agriculture, Conservation and Environment. 2004. *Gauteng State of Environment Report 2004,* Gauteng Provincial Government.

Department of Environmental Affairs and Tourism. 2006. South Africa Environment outlook: A Report on the State of the Environment.

Goldblatt M. and Middleton J. 2007. Climate Policy Coherence and Institutional Coordination: Clarifying Institutional Responsibilities in South Africa, BASIC Paper No.13.

Kiker G.A. 2000. Climate Change Impacts in Southern Africa, Report to the National Climate Change Committee, Department of Environmental Affairs and Tourism, South Africa.

Ministerial Advisory Committee on Local Government Transformation. 2001 Interim Report on the Challenges Facing Local Government, Submitted to the Minister of Provincial and Local Government, 22 November.

Mukheibir P. and Ziervogel G. 2006. Framework for Adaptation to Climate Change in the City of Cape Town, City of Cape Town: Environmental Resource Management,

Nash R. 2008. Editorial: Climate Change and Cities, in ID21 Insights, No.71.

O'Leary, B. 2007. Changes in the Quality of Life of Durban's People. Social Indicators Research. Volume 81, No.1. Springer. The Netherlands.

Phalatse, L. 2008 Climate Proofing for Low-Income Households, SEED City Networking Meeting, 12 September 2008.

Republic of South Africa. 1996. *Constitution of the Republic of South Africa* (Act 108 0f 1996).

Republic of South Africa. 2002. *White Paper on the Promotion of Renewable Energy and Clean Energy Development.*

Richards, R. 2008. Assessing progress on climate change policy and practice: observations from South Africa and SADC. Policy Issues and Actors. Vol.21.No.1 Centre for Policy Studies.

Roberts, D. Thinking globally, acting locally – institutionalising climate change at the local government level in Durban. Environment and Urbanization. Vol 20 (2) 521-537. Sage Publications.

Schoeman, N.J. 2005 Rethinking Fiscal Decentralisation in South Africa, paper presented at the Economic Society of South Africa Conference *Development Perspectives: Is Africa Different?*, 7-9 September, Durban, South Africa.

Turton, A. 2008. Three Strategic Water Challenges that Decision-Makers Need to Know about and How the CSIT should Respond, Keynote Address at the CSIR Conference *Science Real and Relevant*, 18 November 2008, Pretoria, South Africa.

United Nations Environment Programme. 1999. Global Environmental Outlook 2000 (Earthscan: London).

UNEP/GRID-Arendal. National carbon dioxide (CO_2) emissions per capita. UNEP/GRID-Arendal Maps and Graphics Library. 2005. http://maps.grida.no/go/graphic/national_carbon_dioxide_co2_emissions_per_capita. Accessed December 10, 2008.

Warburton C., Gilder A., Shabalala S., and Basterfield M. 2007. Options for Greenhouse Gas Mitigation Mechanisms in South African Legislation', BASIC Paper No. 12.

Yamin, F. 2007. Cities and Climate Change: lessons for and from London, presentation delivered at the State of London Debate: Tackling Climate Change – What Cities can Achieve, 12 May 2007, Westminster, United Kingdom.

Interviews

1. Deborah Roberts: Biodiversity Planning Unit, eThekwini Metropolitan Municipality

2. Jessica Rich, Manager: Policy Coordination and Implementation, Environmental Management Department, eThekwini Metropolitan Municipality

3. Mthobele Kolisa: Municipal Infrastructure and Services Department, South African Local Government Association

4. Catherine Stone: Strategy and Planning Directorate, City of Cape Town

5. Gregg Oelofse: Environmental Resource Management Department

6. Dennis Laidler: Western Cape Department of Environmental Affairs and Development Planning

7. Megan Anderson: Sustainable Energy Africa

8. Flora Mokgohloa: Environmental Management, City of Johannesburg