Think globally, act locally:

Policy implications of the climate change regime[1]

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ABSTRACT

Climate change with its potential to disrupt all facets of life on earth is arguably the greatest environmental threat that humankind has faced to date. The debates on the best methods and means of dealing with the threat are occupying the agendas of diverse actors in the international, national and local arenas. In an effort to address the effects of climate change, governments and policy-makers attempt to translate the results of this vibrant debate into meaningful policy at home. This article attempts to describe this journey from debate through policy into action, taking the complexities of policy environment into account. At the outset the largely divided international climate change regime endorses the contradictory stance of energy-intensive developing nations such as South Africa and inhibits the fostering of a meaningful climate change policy environment at a national level. The policy context with regard to climate change in South Africa is analysed and the salient causes of the troubled policy environment, aside from those commonly associated with developing nations, are identified as largely administrative. Finally, the policy environment in South Africa is examined at local level and, while local governments enjoy more autonomy under the new dispensation, the administrative fragmentation experienced at a national level permeates down to the local sphere, with the EThekwini Municipality serving as a case in point.

INTRODUCTION

That climate change is a real and tangible threat to biodiversity is not debatable; a broad range of scientists has concurred with 'very high confidence' that recent and accelerated warming of the planet is observable and is a direct result of human activity (IPCC 2007). We are, in fact, past the point where the warming of the earth can be avoided and global 'distress' is already in evidence with changes in rainfall patterns and a frequency of extreme weather events already occurring. To a large extent there is international consensus that climate change is a real problem which faces all nations and that action to temper its effects is required. The international debate informs, and to some extent dictates, national and even local climate change policy.

Despite the need for technical and scientific solutions to solve environmental problems, the environmental movement is unavoidably political (Van Reenen, 1994:36). In the current context, while the problems associated with the effects of climate change are measured in scientific, economic and social terms, the implementation of solutions to these challenges is primarily political. Within the political arena the policy process can be identified as the salient political vehicle that transports these solutions into society. The policy process includes, firstly, the identification of a broad goal, or agenda setting; secondly, selecting the right strategy through which to achieve this goal; thirdly, identifying the appropriate means to ensure that the strategy works; and lastly, to set up a process of evaluation and monitoring to ensure the effectiveness of both the strategy and the means to implement it (Clark *et al.* 2000:1).

For the purposes of this overview it is prudent to focus on the context in which the policy process takes place, i.e. the policy environment, which affects all three of the policy steps. The policy environment includes, *inter alia*, the political complexion of government and the dominant political ideologies of the day (Roberts 2004:140). A look at the current state of the international climate change regime will assist in setting the stage for a more focused look at national and local policy environments with regard to climate change.

THE INTERNATIONAL CLIMATE CHANGE REGIME

The international policy arena, within which attempts are made to reach consensus on mitigating and adapting to climate change, is fraught with complexity. Issues of sovereignty, equity, free trade and political ideology make reaching a consensus very difficult and, arguably, in some cases impossible. A plethora of agendas, both political and commercial, external to the immediate environmental concerns associated with climate change plague the international climate change regime.

While some progress has been made, there is an omnipresent state of ossification affecting the climate change regime.

Ossification of the International Climate Change Regime

The proliferation of stalemates and the recycling of already agreed upon issues that typically disrupt international forums on climate change serve as good examples of ossification – the regime has stopped learning and fails to table, adequately absorb or act upon new information. This 'pathology' prevents the regime from furthering new debates and forces the regime to remain entrenched in 'outdated' paradigms that stunt progress. A further indicator is the entrenchment of coalitions and political alliances and the continuation of negative dialogue and mistrust between them; the developing country Group of 77 (G-77), the European Union (EU) and the Organization of Petroleum Exporting Countries (OPEC) are notable examples. One of the most salient fissures in the climate change regime is the long-standing North/South divide, where ideological and historical differences continue to dominate (Depledge, 2006:2-4).

There are several causes or reasons why this impasse has been reached and why it is so difficult to overcome. *Firstly,* the inherent complexity of the climate change debate with its myriad of subjects and concerns coupled with the great diversity of interests and opinions can in large part be seen as contributing to the problem. *Secondly,* the institutional classification of annex 1 (industrialised) and non-annex 1 (mostly developing) countries is itself problematic and exacerbates the North/South divide. Countries are not arranged according to any identified objective criteria and each category has its own rights and responsibilities further widening the political fissure that exists between these two groups. *Thirdly,* the 'consensus' approach to decision making, as is prevalent in the UN system, where a decision can be passed as long as there is no stated objection to it, has made the decision-making process terribly slow. *Fourthly,* the negative and derailing effect of obstructionist states such as Saudi Arabia, which block discussion and raise as many objections as possible, slow down the decision-making process. *Lastly,* the decision by the US, arguably the single most important actor in the global climate change regime, not to ratify the Kyoto Protocol has been a big stumbling block. One of the most significant contributors to climate change-inducing emissions and a country with advanced technological and intellectual capacity is now outside the regime (Depledge 2006:4-16).

South Africa is morally bound to make informed and responsible decisions regarding climate change as the nation makes a significant contribution to global climate change; it is ranked 14th for national CO_2 emissions worldwide (WRI

2006). Despite this, South Africa, as a non-annex I nation, is not required to set emissions reduction targets and may continue to burn fossil fuels without compromise until 2012, when the emissions reduction targets for developing countries will be reviewed (UNFCCC 2006). The international climate change regime allows for the existence of this apparent contradiction and, until such time as the impasse between North and South can be resolved and a decision reached on emissions targets for developing nations, it will continue. A further concern, and a consequence of the ossification of the climate change regime, is the atmosphere of relative lawlessness in which transnational corporations (TNCs) are permitted to operate.

Business and Industry in the International Climate Change Regime

In the last 35 years the global economy has seen a dramatic increase in the magnitude of foreign direct investment (FDI) and the number of associated TNCs. As TNCs often invest in environmentally sensitive sectors, they play a significant role in environmental politics and policy. This is an especially important consideration in developing countries, where FDI has the ability to have significant impacts on both the economy and the environment. In developing countries they have tremendous capacity, by threatening relocation and disinvestment, to persuade governments to promote the relaxing of environmental regulations in order to step up investment and development opportunities. Furthermore, the voice of industrial lobby groups at notable international environmental summits is clearly and unanimously opposed to legally binding treaties on corporate accountability, especially with regard to corporate liability for environmental damages as a result of their operations (Clapp 2005:23-31). To date no legally binding treaty exists and, although the effectiveness of 'hard' or legally binding constraints is debatable (see Birger *et al.* 2006:104-119), it remains a concern that TNCs remain largely unaccountable for their actions.

Policy at a national, and even local, level is thus affected and shaped by the position of the state within the climate change debate and by its susceptibility to influence from business and industry.

THE STATE AND THE CLIMATE CHANGE POLICY PROCESS

In broad terms global environmental change challenges the state, and ultimately the policy process, in two fundamental ways. *Firstly*, the urgency of the problem necessitates mitigation and adaptive responses that stress the administrative, technological and financial capacities of the state. *Secondly*, climate such change

increases the mutual dependence of states, thereby undermining the strength of state sovereignty. The combination of these additional stresses challenges the state in its ability to conduct effective government and provide internal security (Biermann and Dingwerth 2004:2, 3). The former stress in particular makes the delivery of effective and meaningful policy challenging, especially in developing nations, where the aforementioned capacities are strained even under normal circumstances.

In the policy process there is a transformation of the policy discourse as it is absorbed into the institutional framework; there is a bridging of the gap between the rhetoric of the policy discourse and the embracing of this discourse by institutions and its actors. In this vein, policies cannot be seen as objective or neutral tools, but instead as products of discursive struggles (Bäckstrand & Lövbrand 2006:52). The policy environment, although fundamentally defined by the state, is therefore open to influence from a number of national and international non-state actors, including industry, commerce/business, NGOs and civil society.

The role of the state in environmental management can be summed up as *unique, necessary* and *indispensable*. Unique in that the logic of the state goes beyond market forces to include dimensions such as ethics and social justice; necessary because market forces cannot regulate 'public goods'; and indispensable because it addresses issues such as climate change and biodiversity, which cannot be dealt with adequately in exclusively economic discourse (Guimaraes 2004:205-206). In this regard the electorate entrusts the state, as custodian of the natural environment within its boundaries, to prevent environmental degradation to the detriment of the wellbeing of its population. In many states, including South Africa, the right to 'an environment that is not harmful to their health or well-being' is constitutionally enshrined (Republic of South Africa 1996).

South Africa and the Policy Process

There are many challenging hindrances to the delivery of a meaningful climate change policy process in South Africa. The crosscutting nature of climate change necessitates a holistic examination of the policy process, because of its implications not only for biodiversity and the quality of essential environmental services, but for all sectors of society.

Environmental Rights and the South African Electorate

Examining the importance of constitutional environmental obligations, in the form of rights, in South Africa will serve as a precursor to a more detailed discussion

on the difficulties of the policy process. Although outside the immediate parameters of the policy process, popular knowledge of environmental rights has great potential to stimulate public debate and lend credence to environmental policies. A popular knowledge of environmental rights, in conjunction with other rights such as a right to freedom of speech, creates the necessary space for the electorate to act, if government is not performing on environmental obligations. In Van Reenan's words: "[there] is no more effective watchdog than an informed electorate" (1994:39).

The South African electorate is not sufficiently aware of the issues to play the role of watchdog in this regard. Research on this subject revealed that a large number of South Africans were uncertain as to the exact meaning of the term 'rights of the people' (Deegan 2002:50). An alert and aware populace, backed by environmental rights, is able to check, or popularise concern about, state environmental policy if such policy works contrary to the role of the state as custodian of the natural environment. Furthermore an informed electorate may, through public comment, lend credence and value to the agenda-setting stage of the policy process. Regrettably, however, and not surprisingly given the inequitable access to education in the apartheid era, there is a popular ignorance of, and indeed a lack of interest in the significance of, the major tenets of democracy in favour of, again not surprisingly, job creation, housing and education (Deegan 2002:49). The reality of the South African policy environment with regards to the electorate is that there is a dire need for awareness and education. In addition poverty, crime, inadequate state performance and undeveloped civic responsibility are salient challenges that must be addressed, if South Africa is to achieve a measure of success with regards to sustainable development (Rossouw and Wiseman 2004:134), of which climate change policy is a fundamental an arguably inseparable part.

The Institutional and Administrative Context of Environmental Management

Under the apartheid-era government environmental policy making was centralised and technocratically driven and environmental interests were often trumped by industrial and business concerns. In addition, the opinions of civil society were largely ignored (Peart & Wilson 1998:239-240). Law making was centralised and implementation, enforcement and administration of these environmental laws and policies were divided between government departments and agencies. In short, then, law and policy formation were centralised, while enforcement and regulation were dispersed.

Currently one finds a decentralised approach to both the formation and the implementation of environmental policy. This division of responsibility

between the national and provincial departments in environmental law making and administration has resulted in a fragmentation of environmental law and a lack of co-ordination with regard to administration and enforcement. Human resources have been diluted across too broad a spectrum and it is too costly to maintain a large number of departments at national, provincial and local level that deal with environmental affairs (Loots 1996:81-86). Furthermore, despite the national presence of the Department of Environmental Affairs and Tourism, the administration of the environment is handled by the following departments: Mineral Affairs and Energy, Land Affairs, Water Affairs and Forestry, Agriculture, South African National Parks and others. This situation is further exacerbated by the lack of synergy between the environmental departments at provincial level; in the Western Cape, for example, one finds the Department of Environment Affairs and Development Planning, while the Northern Province has the Department of Agriculture, Land and Environment (Glazewski 2005:130-131).

In addition, as far as environmental matters are concerned, the state has detailed areas of exclusive and concurrent competencies with respect to the three spheres of government (national, provincial and local) in Schedules 4 and 5 of the *National Environmental Management Act No. 107* (Republic of South Africa, 1998). The former relates to items where provinces exercise concurrent competencies with national government, while in the latter items of exclusive provincial competence are set out. Part B in both schedules lists items of local authority competence, where local government has been afforded executive authority. Part B matters relating to the environment include 'Air Pollution', for example, while the more generic 'pollution control' is listed as a concurrent national and provincial item. There are indeed some areas such as water, minerals and energy, for example, that are not listed in Schedules 4 or 5, as these are areas of exclusive national competence (Glazewski 2005:132-138).

The delegation of concurrent responsibilities creates a climate of confusion and uncertainty, and further strains the administrative capacities of all spheres of government. This fragmentation has made co-ordination between policies and departments difficult and the complexity of the current arrangement challenges the national objectives of co-operative governance and integrated environmental management. Furthermore, duplication is common and this has resulted in a broad range of overlapping mandates and interests, and has highlighted the need for a clearer separation of implementation and monitoring functions. The latter is clearly evident in the Department of Minerals and Energy (DEM), which is responsible both for promoting resource extraction and the monitoring and managing the impacts of extraction (Rossouw & Wiseman 2004:132). Aggravating this, the fragmentation of government into departments encourages a 'special interest' approach to public policy that results in each ministry tending to focus most heavily on the interests of the key producers

and professionals in that policy sphere. For example, energy ministers tend to view their primary role as protecting the interests of the major energy producers (such as coal and nuclear power) and as a result may downplay environmental damage associated with the energy sector (Carter 2001:174).

A further result of this fragmented policy landscape is the fact that environmental policies are often developed in isolation from otherwise related policies. Land use policies, such as the *Development Facilitation Act 67 of 1995*, which have huge potential to impact on the environment, have been developed independently of environmental policy initiatives (Peart & Wilson 1998:264). The end result of this fragmented policy landscape has been what can be referred to as a 'policy mess', where different policies that cover the same areas pursue different or even conflicting objectives (Peart & Wilson 1998:243). The deluge of policies since 1994 has made integration and co-ordination of policies difficult and encouraged overlap and – despite their good intentions – they have been very difficult to implement, indicating a somewhat idealised approach in the policy development stage. In sum, the general weaknesses in the policy process include the following: key issues are not identified or prioritised; a lack of institutional capacity; strong opposition to policy from within departments; tight time frames that don't allow for a thorough public participation process; confusion as a result of a lack of consistency in the policy process; a lack of clearly defined responsibilities and roles; duplication of effort; a lack of social and economic information and, when it is available, it is poorly integrated with environmental issues; a lack of technical environmental information in the development and monitoring of policy; bias in favour of dominant interest groups and the exclusion or misrepresentation of certain groups; and finally, a lack of monitoring and evaluation, partly because the technology to do so has not been developed and there are insufficient sustainability indicators to aid monitoring (Clark *et al.* 2000:11-13). In large part this long list of weaknesses can be attributed to the complex administrative landscape and policy environment in which environmental management is situated.

It is beyond the ambit of this discussion to seek solutions to the administrative and institutional arrangements in environmental matters, but it is important to note that the current national policy environment does not encourage the incubation of effective and meaningful policy that is required if climate change and its effects are to be dealt with effectively.

The Status of the Environment in the Policy Environment

According to Saward (1998:352), the scope within the administrative hierarchy to allow for the upward mobility of the environmental ministry is a core consideration in environmental policy processes. This consideration is clearly lacking in the

South African context and this mobility deficit will exacerbate the current low-priority status of climate change and related environmental issues at national level. Indeed officials in many departments, at all levels of government, simply do not see climate change as a priority and, in fact, some even view it as working contrary to national development priorities. This is hardly surprising, given that there is a limited awareness within government departments as to the likely consequences of climate change (Department of Environmental Affairs and Tourism 2004:v). Furthermore, from a policy implementation perspective, government is trying to do too much with too few resources and prioritising policies and their outcomes is clearly lacking (Peart & Wilson 1998:263). Prioritisation is sorely needed, given the inability of authorities to deliver in many areas of environmental policy. For environmental policy to be effective it needs to be able to fit into a clearly defined policy hierarchy, and for the more urgent environmental issues, such as climate change, to be awarded priority status. Some attempt was made to address this by placing DEAT as the lead agent in the policy-making arena to ensure that government policies in all areas do not conflict with national environmental objectives. The subsequent *National Environmental Management Act of 1998*, however, severely diluted the potency of DEAT's governing role in this regard by stipulating that such environmental principles must be considered alongside other relevant considerations, such as the social and economic rights detailed in Chapter 2 of the Constitution. Furthermore, the cooperative governance approach, where government departments are persuaded to work more closely together, has been adopted and this further dampens hope of DEAT playing a lead role, with the likely outcome that the department's views will regularly be outweighed by those of other departments (Peart & Wilson 1998:244-245).

Economic Challenges

Environmental matters in general have perhaps not featured to the extent they should have on the national economic agenda, but what of climate change in particular? The 'National Climate Change Response Strategy for South Africa' is a formalised expression of mitigation/adaptive options available to the climate change policy process as well as an expression of the policy boundaries and challenges. While there is recognition of the urgent attention needed to address climate change and the very real threats it poses to national goals of, *inter alia*, sustainable development and poverty alleviation, great concern is expressed about the nation's two vital industries, mining and energy. In short, if annex 1 nations respond negatively to the exporting of coal, the vitality of the South African economy, which is heavily dependent on income generated from the production, processing, export and consumption of coal, will be compromised (Department of Environmental Affairs and Tourism 2004:iv).

This very real concern can be seen as an economically orientated policy boundary or constraint, and it highlights an apparent contradiction in efforts to mitigate the effects of climate change; a large proportion of the country's emissions are a direct result of this heavy dependence on coal, yet South Africa will continue to rely on coal for decades to come. Indeed the major parastatal energy producer, ESKOM, does not internalise the external social or environmental costs, which can amount to as much as 126% of the private cost of producing energy from coal (Blignaut & Zunckel 2004; 300). Including these external costs would raise the cost of energy for the consumer and thereby potentially reduce the competitiveness of energy-intensive industries. It is not atypical of governments to fail to take measures to improve environmental performance and internalise environmental costs, if it is economically burdensome on a domestic level to do so and thereby reduce that country's ability to compete financially on a global level (Guimaraes 2004:209). Furthermore, this highlights the myopia inherent in electoral politics, which stunts or indeed stops the development of policies that imply costs for current generations in order to benefit future generations (Roberts 2004:165).

THE POLICY ENVIRONMENT AT LOCAL LEVEL

The international climate change regime has indeed fostered learning, but that learning is most prevalent outside of the international arena at other levels, including domestic, and in many cases is generating imaginative responses (Depledge 2006:18&19). Domestic- or local-level action and policy formation are thus not to be underestimated and much can be done to address the challenges of climate change at this level, despite international ossification and policy deficits at a national level. Arguing for this decentralised approach, Okidi (1996:56) points out that the 'machinery' in close proximity to the environmental resource should have jurisdiction over its management – in this case, it would be local government.

Local governments in South Africa enjoy a great degree of independence and the power to make by-laws and impose rates (Glazewski 2005:136). Furthermore, the Constitution states that one of the objects of local government is to 'promote a safe and healthy environment' (Republic of South Africa, 1996). Local governments therefore not only have the power to manage their own environments, but are constitutionally obliged to do so.

In the policy process the local sphere of government in South Africa is largely responsible for the implementation of policy formed at national and provincial levels. Central government tends to develop broader policies and these can be detailed at local and provincial levels (Clark *et al.* 2000:7). This has presented a

myriad of problems or challenges at a local level. Among these are a failure to consult local government in policy formation and a failure to recognise the role of local government in this process. Furthermore, local government suffers from a lack of representation in core national environmental legislation, indicative of the policy implementation gaps that plague the policy atmosphere in South Africa (Rossouw and Wiseman 2004:133, 134). A further problem experienced at local level is that of capacity; the highly beauracratised environmental management system often results in the passing of legislation or the issuing of regulations without considering the lack of capacity to support this response (Van Reenen 1994: 39; Glazewski 2005:132). Local governments need to be capacitated and skilled in order to deal with the complexity of climate change-related matters.

The close proximity of local government to its constituency demands interaction and communication with it. Local governments in South Africa have a role to play that extends beyond the ambit of service delivery to include fostering and managing the participation of marginalized and excluded groups, thereby encouraging a democratic approach to council activities and ultimately promoting community involvement (Deegan 2002:52). In South Africa the policy processes are highly regarded for their high levels of public participation and the inclusion of civil society is often seen as a prerequisite for a sustainable and representative policy process (Clark *et al.* 2000:10). But this process, although necessary, is cumbersome and presents an additional challenge to the policy process. Local communities are by definition a diverse group consisting of a myriad of income groups, races and social classes, all with different interests, priorities and values. This diversity of interests will result in a conflict of interests and local government must therefore act as the final arbitrator in this volley of conflicting interests, and it is unlikely that any one interest group will have its desires met in full (Deegan 2002:52). Acting as arbitrator and managing public participation is time consuming and costly, and it stretches local government capacities. Given the diversity of adaptations that civil society may be required to undertake and comment on in support of a climate change policy, this lack of capacity represents a core consideration in policy environment.

Case Study:
The EThekwini Municipality and Climate Change Policy

The EThekwini Municipal Area (EMA) is situated on South Africa's east coast littoral in the province of KwaZulu-Natal (KZN) and covers an area of 2297 square kilometres. Although only 1.4% of the land area of KZN, it houses over 30% of the population of KZN and as much as 60% of the provinces economic activity occurs here. Within the municipal limits a broad diversity of land uses occurs including residential, commercial, industrial and agricultural, with a

number of densely populated informal settlements found within urban and peri-urban areas. The community is similarly diverse, representing a cross-section of race, culture, religion, income group and age. EMA is South Africa's major port city and is the second largest industrial hub after Gauteng. The city is a key trade gateway as a result of its access to important trading routes to the east and its proximity to the mineral-industrial complex of Gauteng. The city's economy grew by 5.3% for the period 2005-2006. The municipality recognises its role in providing democratic and accountable governance, providing services, promoting socio-economic development and a safe and healthy environment (EThekwini Municipality 2007:6, 7).

In response to the growing realisation of the negative implications of climate change and the requisite mitigation and adaptive strategies, the EMA commissioned the CSIR to detail a report on the climatic future of Durban (CSIR 2006). Salient predictions as to the likely consequences of climate change include, *inter alia*, an increase in temperature, a rise in sea level and associated storm surges, a change in rainfall distribution, a reduction in the water available for consumption and industry, a decrease in agricultural production, the spreading of malaria into the EMA and a loss of biodiversity (CSIR 2006: 59-77). These effects, although still clouded with degrees of uncertainty, are certainly dire and it is prudent to consider in the light of the precautionary principle

In the light of the abovementioned significance of public participation, an initial step, and indeed challenge, for the EMA is to gain public support for climate change policies. In order to instigate significant change to society with regards to environmental issues, 'winning the hearts and minds of most sections of society' is essential (Roberts 2004:166). Given the aforementioned diversity of the population of Durban, this is no easy task. In an attempt to understand public perception of climate change in the EMA more fully, a questionnaire-based research programme was conducted (CSIR 2006: 116-153). 46% of the respondents claimed they did not know much about climate change, or that they knew nothing at all. It was concluded that the majority of respondents have a limited understanding of climate change and, furthermore, are unaware as to the causes of climate change. Most participants viewed themselves as external to the solution and commonly believed that it was up to industry to find the answers (CSIR 2006:126). Education and raising awareness on the subject of climate change can be viewed as a critical challenge to the EMA, if there is to be support for local climate change policy initiatives.

A further challenge is the apparent power deficit that inhibits the effectiveness of the city's environmental authority. The Environmental Management Department (EMD) of the EMA does not have the power to make final decisions on environmental applications, although its comments

are usually taken into account and required conditions, instigated by the EMD, 'usually become conditions of approval'. The EMD is therefore a commenting authority requiring the department to communicate with other departments and authorities, not only at local, but also at provincial and national level. This has necessitated the creation of a forum between the EMD and the provincial Department of Agriculture and Environmental Affairs. This forum has been established to aid communications between the two spheres of government and assist in reducing conflict between the two. The EMD is currently attempting the creation of a similar forum to communicate with the Department of Minerals and Energy. These forums are an integral part of the principles of cooperative governance (EThekwini Municipality 2007:42). The need for the creation of forums is indicative of the administrative powerlessness of the EMD and it is postulated here that this process exacerbates problems associated with a lack of capacity. Furthermore, this cumbersome process highlights that the great need for environmental departments to move up the hierarchy, as discussed above in a national context, also applies to a local level. This mobility deficit stunts the EMD's ability to fast-track policy and is bound to entrench an approach of incremental change in the policy process, rather than the need for rapid adjustment that meaningful and effective climate change policy demands.

Mapping the progress of a core environmental policy process found within the EMA will serve to highlight how these hierarchical challenges have affected the EMD in its environmental, and ultimately social, obligations. The Durban Metropolitan Open Space System (D'MOSS), initially instigated by an NGO in 1979, survived the transition politics of the democratisation of South Africa in the early 1990s by shifting focus to include socio-economic and equity concerns. By conserving and carefully managing the open spaces within municipal limits the D'MOSS system is designed to ensure the sustainable delivery of environmental goods and services. In 2001 D'MOSS was reconstituted as the EThekweni Environmental Services Management Plan (EESMP) and 54% of the EMA surface area was deemed as optimal and set aside for the open space system for the city. Growing development pressure and an attempt to secure long-term political support for the programme, however, required that the size of the system be reduced from 123 000 ha to 76 000 ha. In 2002 the area was remapped and reassessed, and once again, in order to accommodate the city's pressing development needs, only those areas vital to the viability of the system were included and the total was further reduced from 76 000 ha to 63 115 ha (or 27% of the EMA) (EThekwini Municipality 2007:11). The salient trend in this programme has been the reduction in the size of the open space area (from 54% to 27%) and this is a direct result of political and development pressure. The EMD does not have sufficient capacity to challenge these reductions and

in its capacity as a commenting authority it can do little more than lobby for support for its initiatives.

Related to this power deficit is the inability of the EMD to effectively implement regulations to ensure the integrity of the EESMP. Power, in this instance, refers to the extent of power that municipalities have over their constituencies rather than the power to move within the administrative hierarchy as discussed above. In short, the EMD has no legal mandate to enforce the law and the department must seek other means to enforce regulation. One method used by the department when dealing with non-compliance from the public sector is compliance monitoring. To this end the EMD endeavours to ensure that the relevant government departments take action when there is non-compliance with regulations (EThekwini Municipality 2007:47). Lacking the power therefore to enforce its own regulations, the EMD has to rely on other departments to give these regulations clout. This is a seemingly cumbersome process that demands time and effort from departments outside the environmental management framework and has the potential to exacerbate the capacity issues that plague the local administration. In response to this the EMD has intentions of drafting 'green' environmental by-laws to protect the natural resource base of the EMA and to ensure the effective implementation on EESMP, but this has yet to be realised (EThekwini Municipality 2007:47). For the effective and meaningful implementation of climate change policy, this is an essential step forward. In the latter half of 2007 it was proposed that the EESMP should be revised once again and climate change (and its impacts on biodiversity) will be introduced into the plan (EThekwini Municipality 2007:18). Without the requisite power and the inability to move upwards in the administrative hierarchy, the EMD has limited potential to make a meaningful contribution towards providing a safe and healthy environment for its citizenry.

To a large extent local municipalities suffer from the same economically orientated policy boundaries as national government.

CONCLUSION

Mitigating the effects of climate change and learning to adapt to these consequences requires good governance on international, national and domestic levels. The delivery of good governance is realised in large part through the implementation of meaningful and effective policy that is dependent on a healthy policy environment for success. This policy environment is influenced by, *inter alia*, international, national and local agendas as well as administrative and legal arrangements. An attempt has been made in this article to highlight the negative influences of these agendas on the policy environment. Because of

the great scale of this environmental problem, climate change policy demands the rapid formulation of policy and effective implementation.

An examination of the situation in practice, however, highlights some of the more salient reasons for the shortcomings in this regard. On an international level the climate change debate is stifled by the diversity of conflicting agendas and the North/South divide, leaving the critical issue of emissions reduction targets unsolved. The knock-on effects of this are felt at a national level and to some extent pollute the South African policy environment. Aggravating this are complex administrative systems that complicate the policy environment and limit the potency of environmental authorities to deliver on their environmental and ultimately social obligations. At a local level the policy process is similarly flawed, aggravated by the weighty responsibility of acting as arbitrator in the public participation process and a lack of capacity. The struggles experienced by the environmental authority of the Ethekwini Municipality are examples of these challenges.

NOTES

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Think globally, act locally:

Policy implications of the climate change regime[1]

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ABSTRACT

Climate change with its potential to disrupt all facets of life on earth is arguably the greatest environmental threat that humankind has faced to date. The debates on the best methods and means of dealing with the threat are occupying the agendas of diverse actors in the international, national and local arenas. In an effort to address the effects of climate change, governments and policy-makers attempt to translate the results of this vibrant debate into meaningful policy at home. This article attempts to describe this journey from debate through policy into action, taking the complexities of policy environment into account. At the outset the largely divided international climate change regime endorses the contradictory stance of energy-intensive developing nations such as South Africa and inhibits the fostering of a meaningful climate change policy environment at a national level. The policy context with regard to climate change in South Africa is analysed and the salient causes of the troubled policy environment, aside from those commonly associated with developing nations, are identified as largely administrative. Finally, the policy environment in South Africa is examined at local level and, while local governments enjoy more autonomy under the new dispensation, the administrative fragmentation experienced at a national level permeates down to the local sphere, with the EThekwini Municipality serving as a case in point.

INTRODUCTION

That climate change is a real and tangible threat to biodiversity is not debatable; a broad range of scientists has concurred with 'very high confidence' that recent and accelerated warming of the planet is observable and is a direct result of human activity (IPCC 2007). We are, in fact, past the point where the warming of the earth can be avoided and global 'distress' is already in evidence with changes in rainfall patterns and a frequency of extreme weather events already occurring. To a large extent there is international consensus that climate change is a real problem which faces all nations and that action to temper its effects is required. The international debate informs, and to some extent dictates, national and even local climate change policy.

Despite the need for technical and scientific solutions to solve environmental problems, the environmental movement is unavoidably political (Van Reenen, 1994:36). In the current context, while the problems associated with the effects of climate change are measured in scientific, economic and social terms, the implementation of solutions to these challenges is primarily political. Within the political arena the policy process can be identified as the salient political vehicle that transports these solutions into society. The policy process includes, firstly, the identification of a broad goal, or agenda setting; secondly, selecting the right strategy through which to achieve this goal; thirdly, identifying the appropriate means to ensure that the strategy works; and lastly, to set up a process of evaluation and monitoring to ensure the effectiveness of both the strategy and the means to implement it (Clark *et al.* 2000:1).

For the purposes of this overview it is prudent to focus on the context in which the policy process takes place, i.e. the policy environment, which affects all three of the policy steps. The policy environment includes, *inter alia*, the political complexion of government and the dominant political ideologies of the day (Roberts 2004:140). A look at the current state of the international climate change regime will assist in setting the stage for a more focused look at national and local policy environments with regard to climate change.

THE INTERNATIONAL CLIMATE CHANGE REGIME

The international policy arena, within which attempts are made to reach consensus on mitigating and adapting to climate change, is fraught with complexity. Issues of sovereignty, equity, free trade and political ideology make reaching a consensus very difficult and, arguably, in some cases impossible. A plethora of agendas, both political and commercial, external to the immediate environmental concerns associated with climate change plague the international climate change regime.

While some progress has been made, there is an omnipresent state of ossification affecting the climate change regime.

Ossification of the International Climate Change Regime

The proliferation of stalemates and the recycling of already agreed upon issues that typically disrupt international forums on climate change serve as good examples of ossification – the regime has stopped learning and fails to table, adequately absorb or act upon new information. This 'pathology' prevents the regime from furthering new debates and forces the regime to remain entrenched in 'outdated' paradigms that stunt progress. A further indicator is the entrenchment of coalitions and political alliances and the continuation of negative dialogue and mistrust between them; the developing country Group of 77 (G-77), the European Union (EU) and the Organization of Petroleum Exporting Countries (OPEC) are notable examples. One of the most salient fissures in the climate change regime is the long-standing North/South divide, where ideological and historical differences continue to dominate (Depledge, 2006:2-4).

There are several causes or reasons why this impasse has been reached and why it is so difficult to overcome. *Firstly,* the inherent complexity of the climate change debate with its myriad of subjects and concerns coupled with the great diversity of interests and opinions can in large part be seen as contributing to the problem. *Secondly*, the institutional classification of annex 1 (industrialised) and non-annex 1 (mostly developing) countries is itself problematic and exacerbates the North/South divide. Countries are not arranged according to any identified objective criteria and each category has its own rights and responsibilities further widening the political fissure that exists between these two groups. *Thirdly*, the 'consensus' approach to decision making, as is prevalent in the UN system, where a decision can be passed as long as there is no stated objection to it, has made the decision-making process terribly slow. *Fourthly*, the negative and derailing effect of obstructionist states such as Saudi Arabia, which block discussion and raise as many objections as possible, slow down the decision-making process. *Lastly*, the decision by the US, arguably the single most important actor in the global climate change regime, not to ratify the Kyoto Protocol has been a big stumbling block. One of the most significant contributors to climate change-inducing emissions and a country with advanced technological and intellectual capacity is now outside the regime (Depledge 2006:4-16).

South Africa is morally bound to make informed and responsible decisions regarding climate change as the nation makes a significant contribution to global climate change; it is ranked 14th for national CO_2 emissions worldwide (WRI

2006). Despite this, South Africa, as a non-annex I nation, is not required to set emissions reduction targets and may continue to burn fossil fuels without compromise until 2012, when the emissions reduction targets for developing countries will be reviewed (UNFCCC 2006). The international climate change regime allows for the existence of this apparent contradiction and, until such time as the impasse between North and South can be resolved and a decision reached on emissions targets for developing nations, it will continue. A further concern, and a consequence of the ossification of the climate change regime, is the atmosphere of relative lawlessness in which transnational corporations (TNCs) are permitted to operate.

Business and Industry in the International Climate Change Regime

In the last 35 years the global economy has seen a dramatic increase in the magnitude of foreign direct investment (FDI) and the number of associated TNCs. As TNCs often invest in environmentally sensitive sectors, they play a significant role in environmental politics and policy. This is an especially important consideration in developing countries, where FDI has the ability to have significant impacts on both the economy and the environment. In developing countries they have tremendous capacity, by threatening relocation and disinvestment, to persuade governments to promote the relaxing of environmental regulations in order to step up investment and development opportunities. Furthermore, the voice of industrial lobby groups at notable international environmental summits is clearly and unanimously opposed to legally binding treaties on corporate accountability, especially with regard to corporate liability for environmental damages as a result of their operations (Clapp 2005:23-31). To date no legally binding treaty exists and, although the effectiveness of 'hard' or legally binding constraints is debatable (see Birger *et al.* 2006:104-119), it remains a concern that TNCs remain largely unaccountable for their actions.

Policy at a national, and even local, level is thus affected and shaped by the position of the state within the climate change debate and by its susceptibility to influence from business and industry.

THE STATE AND THE CLIMATE CHANGE POLICY PROCESS

In broad terms global environmental change challenges the state, and ultimately the policy process, in two fundamental ways. *Firstly*, the urgency of the problem necessitates mitigation and adaptive responses that stress the administrative, technological and financial capacities of the state. *Secondly*, climate such change

increases the mutual dependence of states, thereby undermining the strength of state sovereignty. The combination of these additional stresses challenges the state in its ability to conduct effective government and provide internal security (Biermann and Dingwerth 2004:2, 3). The former stress in particular makes the delivery of effective and meaningful policy challenging, especially in developing nations, where the aforementioned capacities are strained even under normal circumstances.

In the policy process there is a transformation of the policy discourse as it is absorbed into the institutional framework; there is a bridging of the gap between the rhetoric of the policy discourse and the embracing of this discourse by institutions and its actors. In this vein, policies cannot be seen as objective or neutral tools, but instead as products of discursive struggles (Bäckstrand & Lövbrand 2006:52). The policy environment, although fundamentally defined by the state, is therefore open to influence from a number of national and international non-state actors, including industry, commerce/business, NGOs and civil society.

The role of the state in environmental management can be summed up as *unique, necessary* and *indispensable*. Unique in that the logic of the state goes beyond market forces to include dimensions such as ethics and social justice; necessary because market forces cannot regulate 'public goods'; and indispensable because it addresses issues such as climate change and biodiversity, which cannot be dealt with adequately in exclusively economic discourse (Guimaraes 2004:205-206). In this regard the electorate entrusts the state, as custodian of the natural environment within its boundaries, to prevent environmental degradation to the detriment of the wellbeing of its population. In many states, including South Africa, the right to 'an environment that is not harmful to their health or well-being' is constitutionally enshrined (Republic of South Africa 1996).

South Africa and the Policy Process

There are many challenging hindrances to the delivery of a meaningful climate change policy process in South Africa. The crosscutting nature of climate change necessitates a holistic examination of the policy process, because of its implications not only for biodiversity and the quality of essential environmental services, but for all sectors of society.

Environmental Rights and the South African Electorate

Examining the importance of constitutional environmental obligations, in the form of rights, in South Africa will serve as a precursor to a more detailed discussion

on the difficulties of the policy process. Although outside the immediate parameters of the policy process, popular knowledge of environmental rights has great potential to stimulate public debate and lend credence to environmental policies. A popular knowledge of environmental rights, in conjunction with other rights such as a right to freedom of speech, creates the necessary space for the electorate to act, if government is not performing on environmental obligations. In Van Reenan's words: "[there] is no more effective watchdog than an informed electorate" (1994:39).

The South African electorate is not sufficiently aware of the issues to play the role of watchdog in this regard. Research on this subject revealed that a large number of South Africans were uncertain as to the exact meaning of the term 'rights of the people' (Deegan 2002:50). An alert and aware populace, backed by environmental rights, is able to check, or popularise concern about, state environmental policy if such policy works contrary to the role of the state as custodian of the natural environment. Furthermore an informed electorate may, through public comment, lend credence and value to the agenda-setting stage of the policy process. Regrettably, however, and not surprisingly given the inequitable access to education in the apartheid era, there is a popular ignorance of, and indeed a lack of interest in the significance of, the major tenets of democracy in favour of, again not surprisingly, job creation, housing and education (Deegan 2002:49). The reality of the South African policy environment with regards to the electorate is that there is a dire need for awareness and education. In addition poverty, crime, inadequate state performance and undeveloped civic responsibility are salient challenges that must be addressed, if South Africa is to achieve a measure of success with regards to sustainable development (Rossouw and Wiseman 2004:134), of which climate change policy is a fundamental an arguably inseparable part.

The Institutional and Administrative Context of Environmental Management

Under the apartheid-era government environmental policy making was centralised and technocratically driven and environmental interests were often trumped by industrial and business concerns. In addition, the opinions of civil society were largely ignored (Peart & Wilson 1998:239-240). Law making was centralised and implementation, enforcement and administration of these environmental laws and policies were divided between government departments and agencies. In short, then, law and policy formation were centralised, while enforcement and regulation were dispersed.

Currently one finds a decentralised approach to both the formation and the implementation of environmental policy. This division of responsibility

between the national and provincial departments in environmental law making and administration has resulted in a fragmentation of environmental law and a lack of co-ordination with regard to administration and enforcement. Human resources have been diluted across too broad a spectrum and it is too costly to maintain a large number of departments at national, provincial and local level that deal with environmental affairs (Loots 1996:81-86). Furthermore, despite the national presence of the Department of Environmental Affairs and Tourism, the administration of the environment is handled by the following departments: Mineral Affairs and Energy, Land Affairs, Water Affairs and Forestry, Agriculture, South African National Parks and others. This situation is further exacerbated by the lack of synergy between the environmental departments at provincial level; in the Western Cape, for example, one finds the Department of Environment Affairs and Development Planning, while the Northern Province has the Department of Agriculture, Land and Environment (Glazewski 2005:130-131).

In addition, as far as environmental matters are concerned, the state has detailed areas of exclusive and concurrent competencies with respect to the three spheres of government (national, provincial and local) in Schedules 4 and 5 of the *National Environmental Management Act No. 107* (Republic of South Africa, 1998). The former relates to items where provinces exercise concurrent competencies with national government, while in the latter items of exclusive provincial competence are set out. Part B in both schedules lists items of local authority competence, where local government has been afforded executive authority. Part B matters relating to the environment include 'Air Pollution', for example, while the more generic 'pollution control' is listed as a concurrent national and provincial item. There are indeed some areas such as water, minerals and energy, for example, that are not listed in Schedules 4 or 5, as these are areas of exclusive national competence (Glazewski 2005:132-138).

The delegation of concurrent responsibilities creates a climate of confusion and uncertainty, and further strains the administrative capacities of all spheres of government. This fragmentation has made co-ordination between policies and departments difficult and the complexity of the current arrangement challenges the national objectives of co-operative governance and integrated environmental management. Furthermore, duplication is common and this has resulted in a broad range of overlapping mandates and interests, and has highlighted the need for a clearer separation of implementation and monitoring functions. The latter is clearly evident in the Department of Minerals and Energy (DEM), which is responsible both for promoting resource extraction and the monitoring and managing the impacts of extraction (Rossouw & Wiseman 2004:132). Aggravating this, the fragmentation of government into departments encourages a 'special interest' approach to public policy that results in each ministry tending to focus most heavily on the interests of the key producers

and professionals in that policy sphere. For example, energy ministers tend to view their primary role as protecting the interests of the major energy producers (such as coal and nuclear power) and as a result may downplay environmental damage associated with the energy sector (Carter 2001:174).

A further result of this fragmented policy landscape is the fact that environmental policies are often developed in isolation from otherwise related policies. Land use policies, such as the *Development Facilitation Act 67 of 1995*, which have huge potential to impact on the environment, have been developed independently of environmental policy initiatives (Peart & Wilson 1998:264). The end result of this fragmented policy landscape has been what can be referred to as a 'policy mess', where different policies that cover the same areas pursue different or even conflicting objectives (Peart & Wilson 1998:243). The deluge of policies since 1994 has made integration and co-ordination of policies difficult and encouraged overlap and – despite their good intentions – they have been very difficult to implement, indicating a somewhat idealised approach in the policy development stage. In sum, the general weaknesses in the policy process include the following: key issues are not identified or prioritised; a lack of institutional capacity; strong opposition to policy from within departments; tight time frames that don't allow for a thorough public participation process; confusion as a result of a lack of consistency in the policy process; a lack of clearly defined responsibilities and roles; duplication of effort; a lack of social and economic information and, when it is available, it is poorly integrated with environmental issues; a lack of technical environmental information in the development and monitoring of policy; bias in favour of dominant interest groups and the exclusion or misrepresentation of certain groups; and finally, a lack of monitoring and evaluation, partly because the technology to do so has not been developed and there are insufficient sustainability indicators to aid monitoring (Clark *et al.* 2000:11-13). In large part this long list of weaknesses can be attributed to the complex administrative landscape and policy environment in which environmental management is situated.

It is beyond the ambit of this discussion to seek solutions to the administrative and institutional arrangements in environmental matters, but it is important to note that the current national policy environment does not encourage the incubation of effective and meaningful policy that is required if climate change and its effects are to be dealt with effectively.

The Status of the Environment in the Policy Environment

According to Saward (1998:352), the scope within the administrative hierarchy to allow for the upward mobility of the environmental ministry is a core consideration in environmental policy processes. This consideration is clearly lacking in the

South African context and this mobility deficit will exacerbate the current low-priority status of climate change and related environmental issues at national level. Indeed officials in many departments, at all levels of government, simply do not see climate change as a priority and, in fact, some even view it as working contrary to national development priorities. This is hardly surprising, given that there is a limited awareness within government departments as to the likely consequences of climate change (Department of Environmental Affairs and Tourism 2004:v). Furthermore, from a policy implementation perspective, government is trying to do too much with too few resources and prioritising policies and their outcomes is clearly lacking (Peart & Wilson 1998:263). Prioritisation is sorely needed, given the inability of authorities to deliver in many areas of environmental policy. For environmental policy to be effective it needs to be able to fit into a clearly defined policy hierarchy, and for the more urgent environmental issues, such as climate change, to be awarded priority status. Some attempt was made to address this by placing DEAT as the lead agent in the policy-making arena to ensure that government policies in all areas do not conflict with national environmental objectives. The subsequent *National Environmental Management Act of 1998*, however, severely diluted the potency of DEAT's governing role in this regard by stipulating that such environmental principles must be considered alongside other relevant considerations, such as the social and economic rights detailed in Chapter 2 of the Constitution. Furthermore, the cooperative governance approach, where government departments are persuaded to work more closely together, has been adopted and this further dampens hope of DEAT playing a lead role, with the likely outcome that the department's views will regularly be outweighed by those of other departments (Peart & Wilson 1998:244-245).

Economic Challenges

Environmental matters in general have perhaps not featured to the extent they should have on the national economic agenda, but what of climate change in particular? The 'National Climate Change Response Strategy for South Africa' is a formalised expression of mitigation/adaptive options available to the climate change policy process as well as an expression of the policy boundaries and challenges. While there is recognition of the urgent attention needed to address climate change and the very real threats it poses to national goals of, *inter alia*, sustainable development and poverty alleviation, great concern is expressed about the nation's two vital industries, mining and energy. In short, if annex 1 nations respond negatively to the exporting of coal, the vitality of the South African economy, which is heavily dependent on income generated from the production, processing, export and consumption of coal, will be compromised (Department of Environmental Affairs and Tourism 2004:iv).

This very real concern can be seen as an economically orientated policy boundary or constraint, and it highlights an apparent contradiction in efforts to mitigate the effects of climate change; a large proportion of the country's emissions are a direct result of this heavy dependence on coal, yet South Africa will continue to rely on coal for decades to come. Indeed the major parastatal energy producer, ESKOM, does not internalise the external social or environmental costs, which can amount to as much as 126% of the private cost of producing energy from coal (Blignaut & Zunckel 2004; 300). Including these external costs would raise the cost of energy for the consumer and thereby potentially reduce the competitiveness of energy-intensive industries. It is not atypical of governments to fail to take measures to improve environmental performance and internalise environmental costs, if it is economically burdensome on a domestic level to do so and thereby reduce that country's ability to compete financially on a global level (Guimaraes 2004:209). Furthermore, this highlights the myopia inherent in electoral politics, which stunts or indeed stops the development of policies that imply costs for current generations in order to benefit future generations (Roberts 2004:165).

THE POLICY ENVIRONMENT AT LOCAL LEVEL

The international climate change regime has indeed fostered learning, but that learning is most prevalent outside of the international arena at other levels, including domestic, and in many cases is generating imaginative responses (Depledge 2006:18&19). Domestic- or local-level action and policy formation are thus not to be underestimated and much can be done to address the challenges of climate change at this level, despite international ossification and policy deficits at a national level. Arguing for this decentralised approach, Okidi (1996:56) points out that the 'machinery' in close proximity to the environmental resource should have jurisdiction over its management – in this case, it would be local government.

Local governments in South Africa enjoy a great degree of independence and the power to make by-laws and impose rates (Glazewski 2005:136). Furthermore, the Constitution states that one of the objects of local government is to 'promote a safe and healthy environment' (Republic of South Africa, 1996). Local governments therefore not only have the power to manage their own environments, but are constitutionally obliged to do so.

In the policy process the local sphere of government in South Africa is largely responsible for the implementation of policy formed at national and provincial levels. Central government tends to develop broader policies and these can be detailed at local and provincial levels (Clark *et al.* 2000:7). This has presented a

myriad of problems or challenges at a local level. Among these are a failure to consult local government in policy formation and a failure to recognise the role of local government in this process. Furthermore, local government suffers from a lack of representation in core national environmental legislation, indicative of the policy implementation gaps that plague the policy atmosphere in South Africa (Rossouw and Wiseman 2004:133, 134). A further problem experienced at local level is that of capacity; the highly beauracratised environmental management system often results in the passing of legislation or the issuing of regulations without considering the lack of capacity to support this response (Van Reenen 1994: 39; Glazewski 2005:132). Local governments need to be capacitated and skilled in order to deal with the complexity of climate change-related matters.

The close proximity of local government to its constituency demands interaction and communication with it. Local governments in South Africa have a role to play that extends beyond the ambit of service delivery to include fostering and managing the participation of marginalized and excluded groups, thereby encouraging a democratic approach to council activities and ultimately promoting community involvement (Deegan 2002:52). In South Africa the policy processes are highly regarded for their high levels of public participation and the inclusion of civil society is often seen as a prerequisite for a sustainable and representative policy process (Clark *et al.* 2000:10). But this process, although necessary, is cumbersome and presents an additional challenge to the policy process. Local communities are by definition a diverse group consisting of a myriad of income groups, races and social classes, all with different interests, priorities and values. This diversity of interests will result in a conflict of interests and local government must therefore act as the final arbitrator in this volley of conflicting interests, and it is unlikely that any one interest group will have its desires met in full (Deegan 2002:52). Acting as arbitrator and managing public participation is time consuming and costly, and it stretches local government capacities. Given the diversity of adaptations that civil society may be required to undertake and comment on in support of a climate change policy, this lack of capacity represents a core consideration in policy environment.

Case Study:
The EThekwini Municipality and Climate Change Policy

The EThekwini Municipal Area (EMA) is situated on South Africa's east coast littoral in the province of KwaZulu-Natal (KZN) and covers an area of 2297 square kilometres. Although only 1.4% of the land area of KZN, it houses over 30% of the population of KZN and as much as 60% of the provinces economic activity occurs here. Within the municipal limits a broad diversity of land uses occurs including residential, commercial, industrial and agricultural, with a

number of densely populated informal settlements found within urban and peri-urban areas. The community is similarly diverse, representing a cross-section of race, culture, religion, income group and age. EMA is South Africa's major port city and is the second largest industrial hub after Gauteng. The city is a key trade gateway as a result of its access to important trading routes to the east and its proximity to the mineral-industrial complex of Gauteng. The city's economy grew by 5.3% for the period 2005-2006. The municipality recognises its role in providing democratic and accountable governance, providing services, promoting socio-economic development and a safe and healthy environment (EThekwini Municipality 2007:6, 7).

In response to the growing realisation of the negative implications of climate change and the requisite mitigation and adaptive strategies, the EMA commissioned the CSIR to detail a report on the climatic future of Durban (CSIR 2006). Salient predictions as to the likely consequences of climate change include, *inter alia*, an increase in temperature, a rise in sea level and associated storm surges, a change in rainfall distribution, a reduction in the water available for consumption and industry, a decrease in agricultural production, the spreading of malaria into the EMA and a loss of biodiversity (CSIR 2006: 59-77). These effects, although still clouded with degrees of uncertainty, are certainly dire and it is prudent to consider in the light of the precautionary principle

In the light of the abovementioned significance of public participation, an initial step, and indeed challenge, for the EMA is to gain public support for climate change policies. In order to instigate significant change to society with regards to environmental issues, 'winning the hearts and minds of most sections of society' is essential (Roberts 2004:166). Given the aforementioned diversity of the population of Durban, this is no easy task. In an attempt to understand public perception of climate change in the EMA more fully, a questionnaire-based research programme was conducted (CSIR 2006: 116-153). 46% of the respondents claimed they did not know much about climate change, or that they knew nothing at all. It was concluded that the majority of respondents have a limited understanding of climate change and, furthermore, are unaware as to the causes of climate change. Most participants viewed themselves as external to the solution and commonly believed that it was up to industry to find the answers (CSIR 2006:126). Education and raising awareness on the subject of climate change can be viewed as a critical challenge to the EMA, if there is to be support for local climate change policy initiatives.

A further challenge is the apparent power deficit that inhibits the effectiveness of the city's environmental authority. The Environmental Management Department (EMD) of the EMA does not have the power to make final decisions on environmental applications, although its comments

are usually taken into account and required conditions, instigated by the EMD, 'usually become conditions of approval'. The EMD is therefore a commenting authority requiring the department to communicate with other departments and authorities, not only at local, but also at provincial and national level. This has necessitated the creation of a forum between the EMD and the provincial Department of Agriculture and Environmental Affairs. This forum has been established to aid communications between the two spheres of government and assist in reducing conflict between the two. The EMD is currently attempting the creation of a similar forum to communicate with the Department of Minerals and Energy. These forums are an integral part of the principles of cooperative governance (EThekwini Municipality 2007:42). The need for the creation of forums is indicative of the administrative powerlessness of the EMD and it is postulated here that this process exacerbates problems associated with a lack of capacity. Furthermore, this cumbersome process highlights that the great need for environmental departments to move up the hierarchy, as discussed above in a national context, also applies to a local level. This mobility deficit stunts the EMD's ability to fast-track policy and is bound to entrench an approach of incremental change in the policy process, rather than the need for rapid adjustment that meaningful and effective climate change policy demands.

Mapping the progress of a core environmental policy process found within the EMA will serve to highlight how these hierarchical challenges have affected the EMD in its environmental, and ultimately social, obligations. The Durban Metropolitan Open Space System (D'MOSS), initially instigated by an NGO in 1979, survived the transition politics of the democratisation of South Africa in the early 1990s by shifting focus to include socio-economic and equity concerns. By conserving and carefully managing the open spaces within municipal limits the D'MOSS system is designed to ensure the sustainable delivery of environmental goods and services. In 2001 D'MOSS was reconstituted as the EThekweni Environmental Services Management Plan (EESMP) and 54% of the EMA surface area was deemed as optimal and set aside for the open space system for the city. Growing development pressure and an attempt to secure long-term political support for the programme, however, required that the size of the system be reduced from 123 000 ha to 76 000 ha. In 2002 the area was remapped and reassessed, and once again, in order to accommodate the city's pressing development needs, only those areas vital to the viability of the system were included and the total was further reduced from 76 000 ha to 63 115 ha (or 27% of the EMA) (EThekwini Municipality 2007:11). The salient trend in this programme has been the reduction in the size of the open space area (from 54% to 27%) and this is a direct result of political and development pressure. The EMD does not have sufficient capacity to challenge these reductions and

in its capacity as a commenting authority it can do little more than lobby for support for its initiatives.

Related to this power deficit is the inability of the EMD to effectively implement regulations to ensure the integrity of the EESMP. Power, in this instance, refers to the extent of power that municipalities have over their constituencies rather than the power to move within the administrative hierarchy as discussed above. In short, the EMD has no legal mandate to enforce the law and the department must seek other means to enforce regulation. One method used by the department when dealing with non-compliance from the public sector is compliance monitoring. To this end the EMD endeavours to ensure that the relevant government departments take action when there is non-compliance with regulations (EThekwini Municipality 2007:47). Lacking the power therefore to enforce its own regulations, the EMD has to rely on other departments to give these regulations clout. This is a seemingly cumbersome process that demands time and effort from departments outside the environmental management framework and has the potential to exacerbate the capacity issues that plague the local administration. In response to this the EMD has intentions of drafting 'green' environmental by-laws to protect the natural resource base of the EMA and to ensure the effective implementation on EESMP, but this has yet to be realised (EThekwini Municipality 2007:47). For the effective and meaningful implementation of climate change policy, this is an essential step forward. In the latter half of 2007 it was proposed that the EESMP should be revised once again and climate change (and its impacts on biodiversity) will be introduced into the plan (EThekwini Municipality 2007:18). Without the requisite power and the inability to move upwards in the administrative hierarchy, the EMD has limited potential to make a meaningful contribution towards providing a safe and healthy environment for its citizenry.

To a large extent local municipalities suffer from the same economically orientated policy boundaries as national government.

CONCLUSION

Mitigating the effects of climate change and learning to adapt to these consequences requires good governance on international, national and domestic levels. The delivery of good governance is realised in large part through the implementation of meaningful and effective policy that is dependent on a healthy policy environment for success. This policy environment is influenced by, *inter alia*, international, national and local agendas as well as administrative and legal arrangements. An attempt has been made in this article to highlight the negative influences of these agendas on the policy environment. Because of

the great scale of this environmental problem, climate change policy demands the rapid formulation of policy and effective implementation.

An examination of the situation in practice, however, highlights some of the more salient reasons for the shortcomings in this regard. On an international level the climate change debate is stifled by the diversity of conflicting agendas and the North/South divide, leaving the critical issue of emissions reduction targets unsolved. The knock-on effects of this are felt at a national level and to some extent pollute the South African policy environment. Aggravating this are complex administrative systems that complicate the policy environment and limit the potency of environmental authorities to deliver on their environmental and ultimately social obligations. At a local level the policy process is similarly flawed, aggravated by the weighty responsibility of acting as arbitrator in the public participation process and a lack of capacity. The struggles experienced by the environmental authority of the Ethekwini Municipality are examples of these challenges.

NOTES

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