

11 ENVIRONMENTAL MANAGEMENT

11.1 INTRODUCTION

Environmental management is the process of administering, supervising or handling the environment in order to achieve a desired outcome, usually the protection or conservation of the environment (Fuggle & Rabie 1999). The principles associated with environmental management in South Africa are detailed in the NEMA and emphasise the concept of sustainable development.

The role of local government in environmental management has expanded substantially over the last decade, mainly due to the 1992 Rio Earth Summit, and the resulting local scale approach to sustainable development through LA21 (Goldblatt 2002), and the integrated development planning process. The Constitution (Act 108 of 1996) details the environmental management functions of the three spheres of government, where the environment is an area of concurrent national & provincial competence with principle of delegation of functions to local government being established. In terms of Schedules 4 and 5 of the Constitution, local authorities have the following competencies related to the environment:

- Air pollution;
- Municipal health services;
- Municipal public works;
- Stormwater management systems in built up areas;
- Trading regulations;
- Water and sanitation services, limited to potable water supply systems and domestic wastewater and sewage disposal systems;
- Amusement facilities;
- Cleansing;
- Control of public nuisances;
- Noise pollution; and
- Refuse removal, refuse dumps and solid waste disposal.

Furthermore, municipalities may have executive authority and right to administer “any other matter assigned to it by national or provincial legislation.” The following sections also are relevant to local authorities:

- Provincial government is required to monitor, support and promote the development of local government capacity (Section 155(6));
- The national or provincial government may not compromise or impede a municipality's ability or right to exercise its powers or perform its functions (Section 151(4)); and
- One of the objects of local government is to “promote a safe and healthy environment” (Section 152).
- NEMA in section 24 confers a general obligation on all tiers and branches of government which have responsibility for permitting any activities which may have implications for the environment, to consider the environmental impacts of the activities and to document the findings.

Central to the successful interaction between the spheres of government are the principles of co-operative governance, which are detailed in both the Constitution and NEMA. Due to the complicated organisational structure of government departments responsible for the environment,

the 'line function' and the confusion about roles and responsibilities engendered by concurrent jurisdiction, the fragmented nature of SA's environmental legislation, and the lack of capacity of the both the provincial and local authorities, the need for co-operative governance and performance monitoring in environmental management is further emphasised. Nationally the DEAT has embarked on the 'law reform' process, the object of which is to rationalise the plethora of laws and which will see substantial changes in environmental legislation. Following the revision of NEMA (now in its final draft Bill), several subsidiary Bills are in the pipeline, some already published for comment.

A key principle of co-operative governance is the inclusion of civil society in the ambit of government, that is, government, particularly local government is *required* to include the public and civil organisations in its decision-making processes. This SoER is one of the EMM's first initiatives at ensuring public involvement in environmental governance in the Metro.

11.2 INDICATORS

11.2.1 Local policy and by-laws

The policies relating to environmental management in the EMM that have been developed are:

- Agricultural development;
- Disaster management;
- Dolomite risk management; and
- Grass-cutting of sidewalks, parks, open spaces and other municipal areas.

The By-laws relating to environmental management in the EMM that have been developed are:

- Solid Waste;
- Waste Water;
- Planting, Pruning, Removal and Treatment of Street Trees; and
- Regulation of Parks and Open Spaces.

The EMM has developed an IDP and SDF which have partially considered environmental issues. The development of the IEMF and associated policies, for example mining, wetlands, environmental education and conservation are planned for development in the next 5 years. This report is the first step in the process.

11.2.2 Consideration of environmental issues in planning

An evaluation of the IDP was carried out in order to indicate the local level commitment to the environment (as conducted in CSIR 2003). The evaluation undertaken by Morris (2002) was modified and the results are given in Table 11.1 below.

Table 11.1 Evaluation of the EMM IDP June Review 2003

Questions	Result
Is appropriate environmental policy and legislation considered in the IDP?	No
Does the IDP show an understanding of the implications of the above policy and legislation for the municipality and their day-to-day operations?	No
Does the IDP show a structure and mechanisms for the responsibility and accountability for environmental issues?	Yes
Does the IDP provide an understanding of the environmental issues in the municipality, and the opportunities and constraints those issue present?	Partially
Does the IDP provide Localised Strategic Environmental Guidelines for the development of strategies?	No
Does the IDP provide for environmental education and awareness?	Yes
Does the IDP provide for knowledge management structures for the dissemination of information to locals in terms of education and awareness?	No
Does the IDP commit the EMM to stakeholder engagement and public participation in environmental matters?	Yes
Does the IDP provide for the integration of environmental forums with the IDP forums?	No
Is there an integrated environmental management framework (IEMF)?	No
Is a budget provided for the IEMF?	Yes
Is there an integrated waste management plan (IWMP)?	No
Is there a budget for the IWMP?	No
Have projects related to the following been provided?	
Sanitation and water	Yes
Energy	Yes
Integrated land and human settlement planning	Yes
Environmental health	Yes
Integrated pollution and waste management	Yes
Biodiversity and sensitive areas	Some
Parks and open space	Yes
Community based natural resource management	No
Is there budget allocated for these projects?	
Sanitation and water	Yes
Energy	Yes
Integrated land and human settlement planning	Yes
Environmental health	No
Integrated pollution and waste management	Yes
Biodiversity and sensitive areas	Some
Parks and open space	Yes
Community based natural resource management	No
Are there mechanisms to ensure sustainability of these projects in terms of user participation and cost recovery?	No
Is there a strategic systems approach to the integration of infrastructure projects and environmental issues?	Partially
Is there a pro-poor approach to sustainable livelihoods and environmental management?	No
Does the IDP specify how EIA legislation will be complied with during the lifetime of the projects listed?	No
Throughout the IDP, is the 'environment' considered in a holistic manner, or does it relate specific to conservation or green issues?	No

Although many of the environmental and management related aspects abovementioned have not yet been considered in the IDP, this SoER will function to close some of these gaps. It is planned that the SoE and IDP processes will be aligned such that the environment will be considered in all decision making.

11.2.3 Staffing

A review of the number of government employees involved in environmental management in EMM has indicated that with the exception of the EMM Environment and Tourism Department, both GDACEL and the DME are under-staffed (Table 11.2) relative to what they had planned for.

In the first three years since the EMM was created (2000, 2001, 2003), no permanent positions were allocated for environmental management. Volunteers from other departments were therefore involved (Olivier, *pers comm*), and combined with the disruptions associated with the convergence of the various local councils, this resulted in a marked under-capacity for environmental management.

Table 11.2. Authority environmental staff involved in Ekurhuleni (Aucamp, Olivier, Scheepers, *pers comm*)

Authority	Number of Posts							
	2000		2001		2002		2003	
	Allocated	Occupied	Allocated	Occupied	Allocated	Occupied	Allocated	Occupied
EMM Environment Department	0	5***	0	5***	0	7***	1****	1****
Planning & Co-ordination	No data	No data	No data	No data	No data	No data	3	3
Impact Assessment	No data	No data	No data	No data	No data	No data	3	3
Quality Control & Enforcement	No data	No data	No data	No data	No data	No data	5	5
Education & Awareness	No data	No data	No data	No data	No data	No data	4	4
GDACEL*	No data	No data	No data	No data	5	5	11	7
DME**	No data	No data	No data	No data	No data	No data	6	4

* Environmental Planning & Assessment

**For the whole of Gauteng

***These were not permanent employees but rather voluntary positions

****Director

2003 has seen the establishment of formalised staffing structures for the department at the metro level. Although capacity and resources are still lacking, the structures currently being created will to some extent address this.

It should be noted however that there are several different departments in the EMM with functions in areas that relate to the environment. The following departments are noted:

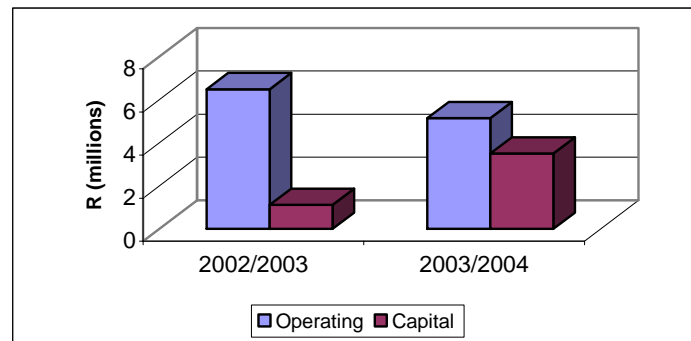
- Legal and Corporate;
- Information Communication Technology;
- Development Planning;
- Local Economic Development;
- Environment and Tourism;
- Communication and Marketing;
- Municipal infrastructure;
- Roads, Transport and Civil Works;

- Public Safety;
- Housing;
- Health and Social Development; and
- Sport, Recreation, Arts and Culture.

11.2.4 Local budget for environmental management

Budget allocation provides information on the municipality's commitment to the environment, as well as providing an indication of the resources available the department to carry out its functions. The following trends of the Environment and Tourism Department's budget are evident from Figure 11.1:

- Operating budget allocations have decreased in 2003/2004; and
- Capital budget allocations have increased.



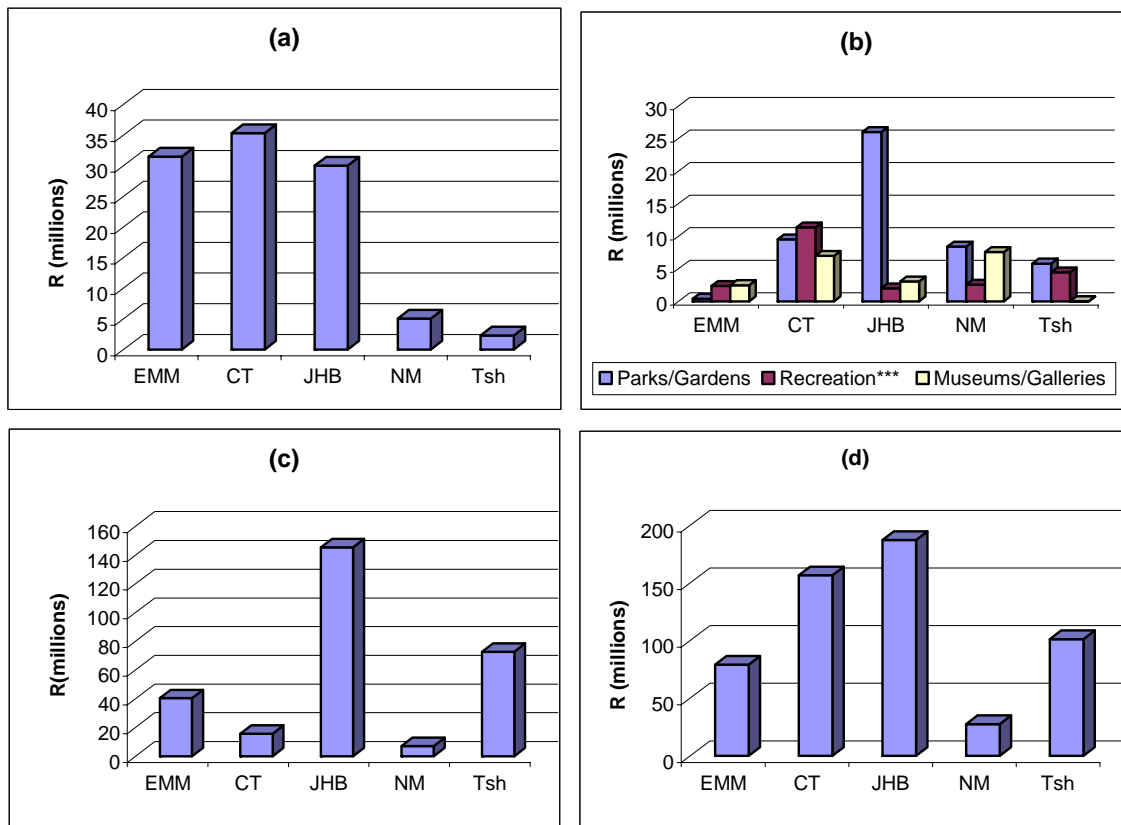
Source: EMM IDP June Review 2003 and Ndlovu pers comm.¹

Figure 11.1 Operating and capital budgets for Ekurhuleni's Environment and Tourism Department

The low capital allocation for the 2002/2003 financial year is related to the fact that the Department was not yet fully operational.

Figure 11.2 provides a comparison of the capital expenditure in 2002/2003 for several environmental management functions of local authorities, for the metropolitan municipalities in SA. Data for eThekweni was not available. Although exact comparisons between metros is not possible due to amongst others, differences in population size, physical area and levels of poverty, some conclusions can be drawn. Ekurhuleni fairs well in terms of expenditure on refuse sites but poorly for the other areas, most notably expenditure on water reservoirs and reticulation, and parks and gardens.

¹ The total capital budget for Ekurhuleni's Environment and Tourism department for 2003/2004 is R5 000 000. The value reflected in the graph has been adjusted to include environmental projects only. Strictly tourism-related projects were not considered.



EMM = Ekurhuleni; CT = Cape Town; JHB = Johannesburg; NM = Nelson Mandela; Tsh = Tshwane
 No data for eThekweni was available.
 Source: Municipal Demarcation Board, 2003

Figure 11.2 Capital expenditure across metropolitan municipalities for 2002/2003 for (a) Refuse sites, (b) Parks and gardens, recreation sites and museums and art galleries, (c) Land and buildings and (d) Water reservoirs and reticulation.

11.2.5 Development pressure and environmental applications

The number of environmental applications under the ECA and Minerals Act commented on by EMM officials is given in Table 11.3. Although the environment department was formed in 2000, it is only in 2003 that participation by the local authority began to take place. A meaningful number of authorisations have been commented on thus far in 2003.

It is evident that mining, transport infrastructure, changes of land use, waste disposal and cultivation of virgin ground are the most commented on applications.

Environmental Impact Assessment, Environmental Management Programme Reports and mining closure statistics were not available from GDACEL, but these figures should be included in the Year Two report.

Table 11.3 Environmental applications commented on by EMM officials

Type of application	2002			2003 thus far		
	Exemption	Scoping	EIA	Exemption	Scoping	EIA
Environmental Conservation Act						
Electricity/Powerlines						
Hazardous substances						
Roads/Railways/airfields					3	4
Communication e.g cell masts					1	
Racing tracks						
Water-related						
Canals & water diversions					1	
Dams, levees & weirs						
Reservoirs for public water supply						
Surface & Groundwater abstraction schemes						
Public & Private resorts						
Sewage treatment plants					1	
Ammunition/explosives storage						
Change of Land use						
Agricultural/undetermined to other					1	
Grazing to other agricultural		1			1	
Conservation/Zoned to any other		3		3	4	1
Commercial Livestock/Aquatic/poultry/Game Production						
Invasive Alien species husbandry						
Biological pest control						
Genetic modification						
Land & wetland reclamation below high water mark						
Waste Disposal						
Solid waste sites e.g landfills, incinerators					2	1
Other waste				1		
Scheduled Processes					1	
Cultivation/other use of virgin ground					4	
Total		4	0	4	19	6
Minerals Act						
EMPRs/EMPR Amendments					10	
Closures						
Total					10	

Source: Deborah Ramalope EMM pers comm.

11.2.6 Voluntary adoption of environmental management systems

The global market place pressures South African business and industry to conform to internationally accepted business standards, including those dealing with environmental issues (SABS Global Conformity Services 2003). There is growing awareness that industry is required to manage the effect that its activities have on the environment, including the air, land, water, natural resources and biodiversity, people and interested and affected parties.

Various forms of regulatory mechanisms of industrial activities exist, ranging from the traditional top-down (command and control) approach, to the more co-operative approach of co-regulatory and self-regulatory instruments. Diminishing returns associated with the traditional approach are resulting in a shift of greater responsibility for achieving sustainable development from the public to the business sector (Hanks 1998). In this regard, organizations are working together with bodies like South African Bureau of Standards (SABS) to achieve the environmental outcome most beneficial to all parties. Environmental management systems (EMS) are a mechanism to enhance co-regulatory relationships (SABS Global Conformity Services 2003).

Monitoring the number of certified EMSs is a way to understand the private sector commitment to corporate sustainability and environmental management. The SABS ISO 14000 Environmental Standard has been designed in association with the International Organization of Standardization (ISO). This is one of many EMSs, however data for others is not readily available. The number of certified ISO 14001 in various categories of industry is presented in Table 11.4.

Table 11.4 Businesses in the EMM with certified SABS ISO 14001/SANS 14001 Environmental Management Systems

Category	# Certified
Transport, storage & communication	
Storage & warehousing	1
Rubber & plastic products	
Manufacture of tyres and tubes	1
Pulp paper & paper products	1
Manufacture of containers of paper & paperboard	2
Other transport equipment	
Manufacture of motor vehicle parts & accessories	1
Manufacture of bodies for vehicles, trailers & semi-trailers	1
Non-metallic mineral products	2
Mining & quarrying	
Mining of diamonds (incl alluvial diamonds)	1
Manufacture of coke and refined petroleum products	
Other petroleum/synthesised products n.e.c.	1
Petrol, fuel oils, lubricating oils & greases, primarily from natural gas	1
Machinery & equipment	
Manufacture for mining, quarrying & construction	1
Basic metals & fabricated metal products	
Manufacture of other metal products n.e.c.	2
Manufacture of metal structures or parts thereof	2
Casting of iron & steel	1
Manufacture of primary non-ferrous metal products	1
Food products, beverages & tobacco	
Manufacture of malt	1
Breweries except sorghum beer breweries	1
Manufacture of gas	1
Recycling	
non-metal waste & scrap n.e.c.	1
metal waste & scrap n.e.c.	1
Engineering services: consulting	1
TOTAL	25

Source: SABS Global Conformity Services 2003 Certification Directory

ISO 14001 is generally the most common EMS used in industry. Despite not having figures for the other EMSs in the EMM, a total of 25 certified businesses represents a poor fraction of the industry, given that there are approximately 8000 industrial businesses and 5000 supporting industrial enterprises in the EMM.

11.2.7 Co-operative governance

Co-operative governance refers to the relations and interactions between the different spheres of government, the principles of which are laid out in Chapter 3 of the Constitution. Because various government departments are involved in either exercising functions which may affect the environment, or exercising functions that involve the management of the environment, the principles detailed in Section 41 in relation to environmental management and governance need to be adhered to. This is especially true in the EMM owing to the infancy of the metropolitan authority. The following principles are emphasised:

- (1) All spheres of government and all organs of state within each sphere must-
- (c) provide effective, transparent, accountable and coherent government
 - (e) respect the constitutional status, institutions, powers and functions of government in other spheres;
 - (g) exercise their powers and perform their functions in a manner that does not encroach on the geographical, functional or institutional integrity of government in another sphere
 - (h) co-operate with one another in mutual trust and good faith by-
 - (ii) assisting and supporting one another;
 - (iii) informing one another of, and consulting one another on, matters of common interest
 - (iv) co-ordinating their actions and legislation with one another

It is also emphasised that various departments are involved in the management of the environment within the local authority, and that co-operation between all departments is urgently required to adequately address the urban and other environmental problems in the EMM. Although there is no written documentation on the level of co-operation between the various departments and authorities, personal communications have made it clear that more interaction between the different departments within the EMM is required. In this light, the EMM is in the process of establishing an “Environmental Management Co-ordination Committee” which will include representatives from various departments within the EMM. It is also clear that mining related environmental issues require the involvement of many departments including DME, DWAF, GDACEL, EMM, and the Department of Health. In this light, a key focus area is the need for information management systems and structures, and building capacity for it. This SoER and future revisions will address the information gap to a certain extent, but it is the structures related to the flow and sharing of appropriate knowledge, information and data which will determine the success of future environmental management.

Countrywide co-operative governance is enhancing the communication of information, but according to some state officials it may have at least one potentially counter-productive side effect, namely an unwillingness to enforce the law through the courts, since this would be seen not to be in the spirit of ‘co-operation’.

11.3 CONCLUSIONS

The EMM IDP details the operational strategies and key performance areas that are to be met over the next five years, and in this regard the EMM is dedicated to improving the management of the environment. As a newly developed authority and department, this five year period is critical in order to set the basis for governance in the future. Possibly the most critical aspect of this five year period will be co-operative governance. It is essential that the provincial and national authorities involved attempt as far as possible to assist in building capacity within the local authority, and to involve them in all relevant decision making. An area of particular concern, as discussed in this report is the mining sector and the environmental legacy of mining, specifically in the EMM. A large proportion of the environmental problems are mining related, and given that many mines are disused and have no clear legal and responsible ownership, it is essential that the responsible authority, DME, works closely with the provincial and local authorities to address these problems.

11.4 REFERENCES

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