

UTILISING ENVIRONMENTAL MANAGEMENT SYSTEMS TO ADDRESS MUNICIPAL SUSTAINABLE DEVELOPMENT

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ABSTRACT

The *Constitution of Republic of South Africa, 1996* places an obligation on municipalities to satisfy basic needs and to promote the social and economic development of local communities. For this developmental role to occur, municipalities often act as developers when providing services such as housing, roads and sanitation. These activities may have environmental impacts that need to be managed in such a way that resources are used optimally and not at the expense of both present and future generations. An environmental management system (EMS) is that aspect of a municipal institution's overall management structure and arrangements that addresses the immediate and long-term impact of its activities, products and services on the environment. The EMS can thus be seen as an important tool that can be used by municipalities to obtain the sustainable utilisation of resources for the purposes of programme and project execution in such a way that socio-economic development does take place, but in a way that is not destructive to the environment.

This article pursues the objective of sustainability within the context of how an environmental management system (such as ISO14001) may be utilised as a tool to promote development within municipalities. To demonstrate this, the experiences of the Mangaung Local Municipality in the Free State, are shared to describe the process followed to implement such a system at the local government sphere.

INTRODUCTION

The attainment of democracy in 1994 presented the South African government with two challenges: *firstly*, significant institutional transformation in line with the new democratic constitution, and *secondly* to deal with the apartheid legacy whilst at the same time incorporating new challenges of integrating the country in a rapidly changing global environment. Local government, through municipalities, is an important vehicle to address this challenge as it is a sphere of government, created deliberately to bring government to grass roots, as well as to give its members a sense of involvement in the political processes that control their daily lives (Reddy, 1996).

Section 153 of the Constitution, 1996 places an obligation on municipalities to satisfy basic needs and to promote the social and economic development of local communities. This developmental role means that municipalities need to be committed to work with citizens and groups within the community to find ways to meet their social, economic and material needs and improve the quality of their lives. It is, therefore, no surprise that activities that promote economic growth are promoted, and these include industrial development, new residential areas and commercial activities. A large portion of these activities take place in cities. Therefore South African cities have become the sites of intensive trade and exchange and the number of people working and living in South Africa has increased.

Cities, and municipalities in general, have a developmental agenda. For this developmental role to be realised, municipalities often act as developers when providing services such as housing, roads and sanitation. These activities often have environmental impacts that need to be managed in such a way that resources are used optimally and not at the expense of both present and future generations. Thus municipalities need to ensure that sustainable development occurs where social, economic and environmental factors are incorporated in decision-making.

LOCAL GOVERNMENT AND THE ENVIRONMENTAL SUSTAINABILITY INTERFACE

The South African government framework consists of three distinct, interrelated and interdependent spheres, which are the national, provincial and the local government (Constitution, 1996). Municipalities in South Africa play a key role in sustainable development by addressing the social and economic needs of communities while ensuring that the resource base upon which life depends is conserved and well managed (DEAT, 2003). Sustainable development means the integration of these three factors into planning, implementation and decision-making to ensure that development serves present and future generations. Consequently, these issues need to be addressed in an integrated and holistic manner.

A range of environmental competencies and responsibilities are delegated to South African municipalities. These may be controlled or influenced by appointed officials, elected politicians and civil society, and can be classified into four categories (see

Figure 1). They include the municipality as a governing organ of state, as a governed entity, as an operator with activities, products, services and facilities that may impact on the environment, as well as conservation function (MLM, 2004).

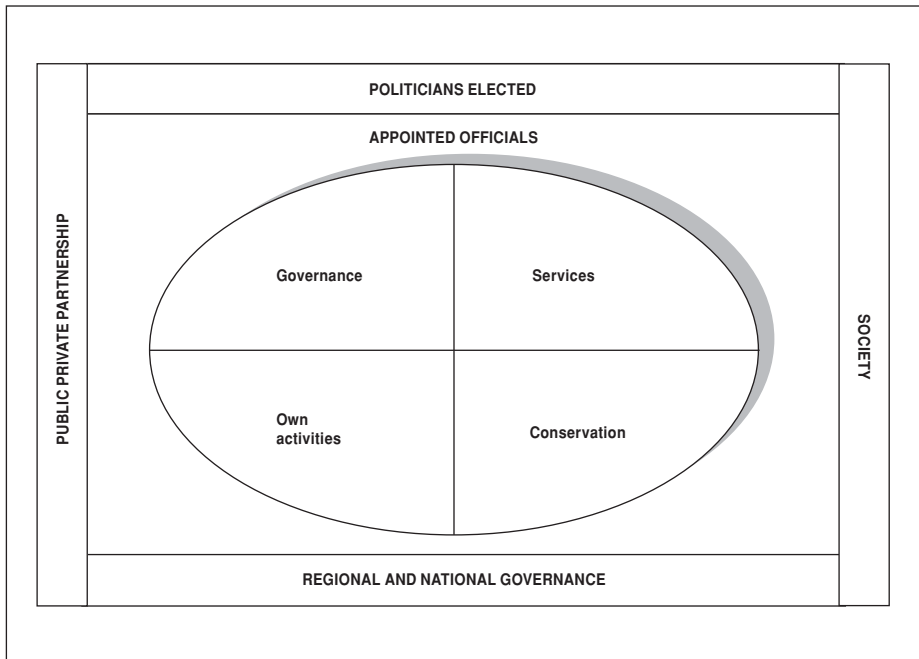
Governance function

The governance function involves four aspects:

- development of environmentally related legislation in the local sphere;
- executive mandate to implement legislative arrangements;
- law enforcement function; and
- good governance in line with the *Batho Pele* principles.

A municipality is responsible for the development of relevant local by-laws to ensure that all the relevant environmental aspects are governed within a legislative framework that is in line with national and provincial principles. A municipality also has an executive function (including co-governance arrangements) that is linked with law enforcement functions. This refers specifically to environmental aspects such as air pollution, land use management and waste management. Protecting the global common good is also an important element of this function.

Figure 1: Framework for environmental management at the local level



Source: Adapted from Nel: 2007

Controller or influencer of activities, products, services and facilities

The municipality is involved in a whole range of activities, handling of products and rendering of services. It is also either the owner or user of facilities that have or may have significant impacts on the environment. These activities and assets also require environmental management and compliance. Improved eco-efficiency, linked with socio-economic development, poverty reduction and legal compliance are the key issues at stake.

Municipality as a governed institution

The municipality provides a range of infrastructure and services and, in recent years, is also required to facilitate economic development and other *soft* functions. The services invariably demand effective environmental management practice to mitigate and control the potential impacts associated therewith. Many of these services are governed by the national and provincial spheres of government and hence require legal compliance from municipalities. Another issue is efficient, regular and cost-effective rendering of these services in order to ensure viable and healthy communities.

Conservation

Conservation is an important function in terms of environmental and heritage resource management responsibilities, since municipalities own or influence large tracts of land with high conservation value as well as important heritage resources. The general conservation function also entails provision of a generally healthy environment that is conducive to a dignified quality of life with access to recreational facilities, clean air and water, as well as ample functional open space. Biodiversity management is also an important function.

The above model (figure 1) indicates that the manner in which municipalities operate greatly influences the manner in which development occurs. For this development to be sustainable the following core principles must be adhered to (Carter, 2001):

- equity;
- democracy;
- precautionary measures;
- policy integration; and
- planning.

These principles are similar to the requirements of an *Integrated Development Plan* (IDP). The IDP, being a statutory tool that directs planning in municipalities, can thus be seen as an important vehicle that can promote the principles of sustainable development. Swanson (2004) argues that South Africa has adopted an approach to sustainable development that integrates sustainable development principles into the heart of the government planning cycle. Since the aims of the integrated development planning framework are closely

aligned with many of the principles of sustainability, it provides the municipalities with the base for IDP of activities that will have long socio-economic benefits and that will not degrade the quality of the environment (SACN, 2006).

Although the IDP can be seen as a tool to promote sustainable development, it needs to be developed by the municipality in a manner that differs from traditional planning principles where emphasis is mainly on socio-economic development. Administrators in the local sphere are currently challenged with major socio-economic problems and these are often exacerbated by environmental concerns and impacts such as:

- pollution;
- waste;
- uncontrolled resource consumption;
- urban decay; and
- continual decrease in the quality of urban life.

Many municipalities have realised that their current activities and the practices that are taking place in their areas of jurisdiction may be environmentally unsustainable and a paradigm shift is necessary. For a municipality to be sustainable, environmental issues must be addressed as an integral part of the planning and operation of the IDP.

An environmental strategy and policy is a starting point for municipalities to integrate environmental aspects into their operations. An environmental management system (EMS) has been recognised as an important tool to operationalise environmental strategies and policies to improve environmental management performance of organisations.

ENVIRONMENTAL MANAGEMENT SYSTEMS

Background

An EMS can be described as a method of incorporating environmental care throughout the organisational structure. EMS includes strategic planning, organisational structure and implementation of the environmental policy as an integral part of the institution's processes. An EMS is a useful tool to implement so that an institution complies with legislation, address stakeholder pressure and improve the corporate image, as well as raise awareness of environmental issues. Therefore, EMS can be described as a problem-identification and problem-solving tool, based on continual improvement that can be implemented in different ways (Good practices, 2007). An EMS integrates environmental thinking into all levels and processes of an organisation and enables environmental concerns to become integral to overall performance (Pawar and Risetto, 2001).

Implementing an EMS has many advantages. According to Pawar and Risetto (2001), gains realised by a municipality through an EMS may include:

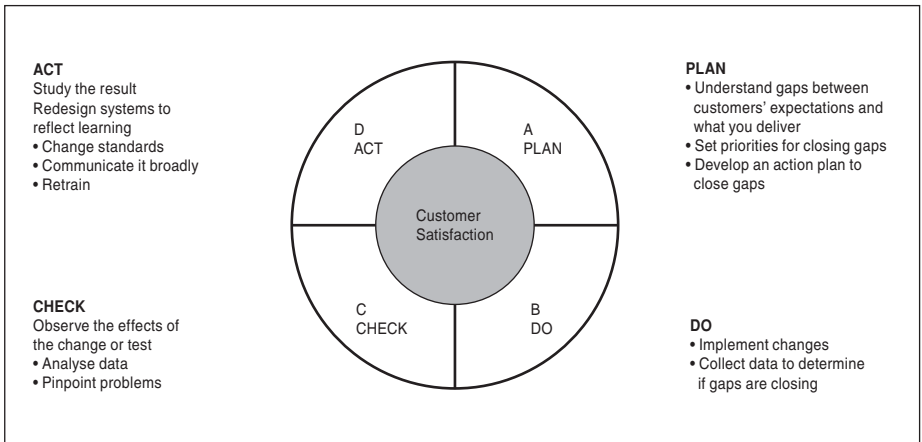
- increased operational and administrative efficiencies;
- cost savings, including economic and environmental ones;
- improved public health and environmental protection;

- reductions in risk and liability;
- improved tracking of all types of permits (health, water, fire and building);
- streamlined processes for regulatory compliance;
- enhanced interaction with community stakeholders;
- improved internal and external communication and education;
- higher levels of employee participation and stewardship;
- innovations in environmental solutions; and
- better public relations.

Elements of an EMS

Virtually every EMS in operation today is comprised of tools derived from the Deming model of *Total Quality Management* set out in the ISO 9000 Quality Management Series. It includes the Plan, Do, Check, Act (PDCA) principles and is illustrated in Figure 2.

Figure 2: The PDCA cycle



Source: Gemi in MLM, 2004

An EMS is closely associated with the *Deming cycle*, where different elements of the EMS can be associated with the PDCA cycle. This can be seen in Figure 3 below.

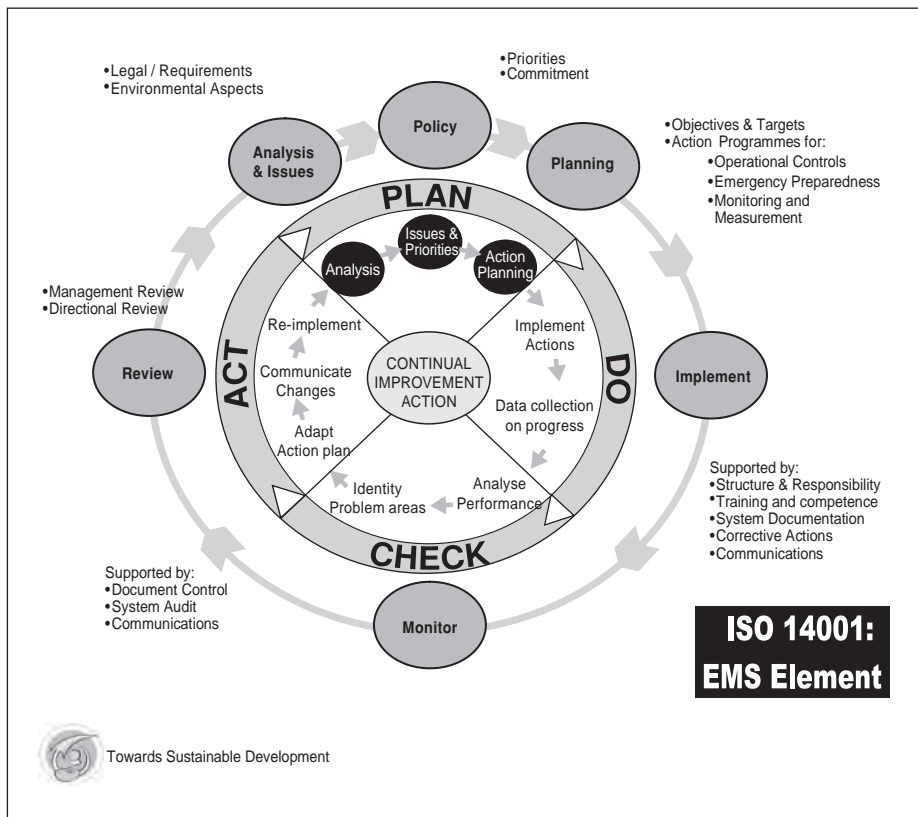
An EMS, such as ISO 14001, has information regarding the following elements (ISO 14001, 1996):

- environmental policy;
- environmental aspects;
- legal and other requirements;
- objectives and targets;
- environmental management programmes;
- structure & responsibility;
- training, awareness and competence;
- communication;

- environmental management system documentation;
- document control;
- operational control;
- emergency preparedness and response;
- monitoring and measurement;
- non-conformance and corrective and preventative action;
- records;
- environmental management system audit; and
- management review and continuous improvement.

Municipalities, like other organisations, are characterised by complex decision-making frameworks and pathways. Roles, responsibilities and authorities are equally complex and often not clearly defined and differentiated. However, an EMS can be successfully implemented within the organisation based on the PDCA cycle and the elements of an EMS.

Figure 3: Elements of an EMS and the PDCA cycle



Implementation of the EMS

An EMS can be implemented against the PDCA cycle discussed above. For this to take place, the following need to be addressed:

Plan

The municipality needs to ask the fundamental questions: “Where are we now?” and “Where do we want to go?” Answering these questions involves the following:

- The **initial environmental review** involves understanding the organisation’s existing environmental position in relation to the requirements of the EMS. It is necessary for the municipality to map out the scope of the EMS, including the business processes, and to understand and document their environmental aspects and impacts.
- Based on the information gathered during the initial environmental review, the organisation then needs to generate an *environmental policy* stating how the organisation plans to respond to current and anticipated environmental issues. Senior management in consultation with all levels of the organisation must generate the policy.
- Based on the significant environmental aspects identified during the initial review and on the goals outlined in the policy statement, the organisation must formulate specific *objectives and targets*. They must be measurable and auditable.
- The next step involves the formulation of an *environmental management programme* that defines all the activities that need to take place in order to achieve the stated objectives and targets. These include the formulation of clear roles, responsibilities and authorities in order to achieve the objectives and targets.

Do

- *Responsibilities and procedures* should ideally be defined by the people who are charged with their implementation and adopted by senior management. Sufficient resources, including *training*, must be provided to achieve the objectives and targets. A management representative must also be appointed.
- Included under this phase is the establishment and maintenance of appropriate *communications* with internal and external interested parties and stakeholders. Another aspect is the writing of instructions to ensure the *control of critical tasks, activities and services*. Also important is the establishment of an *emergency preparedness and response* programme, as well as a system of operational controls to ensure maintenance of the EMS.
- The organisation must establish and maintain a system of *documentation* and a system of keeping *records* of environmental performance.

Check

- The organisation must have tools to answer the question: “How are we doing?” These *monitoring and control* tools usually include requirements for records on environmental emissions, waste and performance. They also include *corrective and preventive actions*

and *environmental audit* procedures and programmes. The purpose of this phase is to assess the organisation's actual environmental performance against its stated policies, objectives and targets.

Act

- Action must be taken to correct any challenges or shortcomings that have been identified in the previous phase.
- A periodic *management review* will assist in ensuring that the organisation is responsive to changing circumstances. The ultimate aim is to continue improving the organisation's environmental performance. Opportunities for improvement may be found in improved implementation of e.g. existing programmes and policies, technological innovation, new processes and training.

The PDCA model is a dynamic one. When the organisation has identified changes that may or should be made to the EMS it will inevitably return to the planning phase to introduce those changes into the environmental policy and management programme.

Challenges and Barriers of implementing EMS

There are a number of barriers to the implementation of EMSs by municipalities. It is important to be aware of these in order to find ways of addressing them effectively. The challenges are discussed to enable decision-makers to do suitable planning before an EMS is implemented.

Lack of public and political awareness and support

Inadequate public awareness often results in either inadequate public pressure on officials and politicians or inadequate public support for initiatives to address environmental issues that often result in inaction and a disregard for environmental issues. One of the key characteristics of municipalities across the world is the fact that environmental management is not a priority when compared to issues such as e.g. housing, employment and crime.

Lack of political interest

If elected politicians do not show commitment to EMS implementation, implementation staff will be unsupported and they will have neither the motivation nor access to the required resources they need to drive development and implementation of policies. The EMS will then not be seen as a priority by council, top managers and other employees. The inevitable result will be inadequate resource allocations. There may be no wider acceptance of the EMS, often leaving a few officials and perhaps some consultants to drive unambiguous targets.

Lack of political commitment is often the result of inadequate awareness or knowledge of environmental issues. Implementation of any EMS should, therefore, be accompanied by targeted and appropriate information campaigns in order to source and sustain political and senior administrative support for the project.

Lack of senior management interest

Often environmental issues are not seen as a priority, especially for municipalities in developing countries where basic human needs and poverty reduction dominates the agenda. This is compounded by problems associated with motivating funds and resources for processes and initiatives that deliver medium to long term benefits.

Lack of awareness, motivation and public involvement

ISO 14001:1996 does not require public participation as is required by the IDP, EIA and LA21 processes. ISO 14001:1996, however, demands that management must consider interested and affected party perspectives when objectives and targets are set. Strictly speaking, management and political leaders may use information sourced by means of other participative processes when objectives and targets are generated. It is, however, inconceivable that an EMS process is to be launched in a municipality without engaging the public. It is suggested that a dedicated public participation process be launched using established structures and forums that are *inter alia* linked to the IDP processes.

The scope of an EMS in the local sphere may initially be inwardly focused, i.e. addressing issues that affect the activities, products, services and facilities of the municipality itself. However, as the EMS matures, environmental issues may be extended to address issues related to behavioural patterns of civil society. Such issues may include separation of waste at source, littering campaigns, transport reforms and public energy efficiency, campaigns. An aware and involved community is of paramount importance to roll out the EMS to address those issues as well.

It is recommended that the municipality initially focuses its EMS on the activities, products and services that it controls as well as those that it may readily influence, such as contractors and service providers.

Challenges related to structure and management

The structure and management arrangements of municipalities may be complex. This reality often challenges implementation of an EMS as some of the following issues need to be addressed:

- Is one EMS to be implemented or are numerous smaller EMSs to be implemented?
- Who takes responsibility for the EMS?
- How are administrative barriers to be overcome?
- Who has both capacity and skills to initiate, drive and sustain an EMS?

A general problem associated with a typical municipal structure is that the decision-making process is often slow, involving various levels. This can be frustrating to those implementing an EMS, especially those seeking to improve the link between politicians, urban managers and departments. Another challenge to the MLM is the fact that it has a very well-defined IDP that is rolled out in a devolved way to lower levels within the organisation. Some leaders may fail to appreciate the difference between these elements of the IDP and an EMS based on ISO 14001:1996.

Departmentalism

In the past environmental instruments has been the sole responsibility of the environment, planning, parks, and engineering or health departments. On occasion, environmental initiatives or activities have been regarded as *against economic development*, with the environmental department or officer having to campaign for implementation. Environmental issues have often been dealt with according to media (e.g. water and waste) or professional disciplines (e.g. air quality (health), habitat preservation (parks), water, waste and sanitation (civil engineers)). This fragmentation means that an integrated approach to environmental management may be compromised. Some kind of alignment and co-ordination of the EMS effort across departmental divides is essential. Strategies to overcome departmentalism are, therefore, a key element of EMS planning at the local level.

Lack of resources

Lack of resources may be pertinent to municipalities in developing countries where most resources are often channelled into programmes to meet basic human needs. Funding from foreign and local donors to finance EMS implementation must be investigated.

Lack of information about EMSs

Lack of information may often be the most basic barrier to implementing an EMS in the local sphere. In most instances municipalities rely on consultants to facilitate implementation of an EMS. Two approaches are normally used.

The *first* approach is where consultants are retained to deliver a turn key EMS solution to municipalities. Experience has shown that these management systems are not very sustainable as no skills are transferred to staff members and when funding ceases, the EMS normally collapses.

The *second* approach that has proven to be more sustainable is when a consultant facilitates a process of learning by employees. This solution, however, demands access to human resources and skills. The general strategy would be that a *Project Implementation Team* (PIT) is established. The PIT consists of staff members from:

- the functions for which the EMS is to be implemented;
- records;
- legal experts;
- planners;
- trainers; and
- technical experts.

A *Project Management Team* (PMT) consisting of political and managerial officials as well as the consultant then oversees the PIT. The task of the PMT is to ensure strategic guidance and management of the project. The combined deployment of the PMT and PIT

teams increase the possibility of a sustained and successful project, while real capacity is built in the organisation to manage and maintain the EMS.

Lack of technical and professional employees

Inadequate skills and other non-monetary resources are also obstacles to the implementation of an EMS in municipalities. The strategy to implement an EMS in the MLM should be linked to a capacity building programme as explained in the second model above.

Off-focus implementation of an EMS

Off-focus implementation refers to the focus and the purpose of the EMS being lost during implementation or being undefined from the start. This may occur when the municipality is only implementing an EMS for the sake of certification and the reasons and benefits are not clearly understood or passed on to all those involved. This may also result in the problem of the EMS being regarded as a short term project, which will end with certification, instead of being a continuous process, integrated in the municipal management processes.

During the implementation of an EMS, focus may be lost if the interests of the main players, especially the politicians, take over and become dominant or if the main players change, e.g. a change of elected politicians and elected municipal managers after elections. It is the challenge of the implementation team to keep the discussions focussed on creating a better quality of life through managing natural resources and improving environmental performance within economic boundaries and social considerations. Poor government has been identified as a major impediment to municipal based environmental management. Many municipal and metropolitan municipalities lack the institutional capacity to carry out effective environmental planning and management services and to provide effective local level services routinely.

CONCLUSION

Municipalities need to provide services to its citizens, but in a manner that does not compromise the present and future generations. Thus municipalities need to operate in a manner that incorporates sustainable development and includes environmental considerations in decision-making.

The operations and activities of municipalities impact on the environment and public health and can create liability exposure. An *Environmental Management System* (EMS) is a tool that can be used to provide local administrators with effective methodologies for practically and systematically managing its environmental aspects associated with their responsibility as stewards of the environment.

An EMS has various elements that can be linked to the PDCA cycle of the Deming model of quality systems. Although systematic and logical in its approach, an EMS can only be successfully implemented if there is commitment from both officials and politicians. It

is also important that resources are available in the form of finance and staffing. Bearing in mind that it is a requirement that municipalities incorporate environmental issues in planning and the need to address sustainable development, an EMS, if implemented properly, would be a useful tool for local authorities.

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