

# ENVIRONMENTAL BY-LAWS – THE MISSING LINK OF INTEGRATED ENVIRONMENTAL MANAGEMENT\*

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## **Abstract**

It is often said that local government is the sphere of governance closest to the people and hence all environmental issues. A recent global tendency of subsidiarity and decentralisation from national to local levels supports this argument and aims to achieve sustainable environmental management and land use by the delegation of power to local levels. This can be seen in several pieces of legislation in South Africa, including the *Constitution of the Republic of South Africa, 1996* (hereafter the 1996 Constitution). In reality most South African local municipalities are fondling in the dark with this new found power and suddenly find themselves desperately in need of an effective tool for managing environmental issues. In the search for sustainability, local municipalities tend to focus on the “popular” conservation of natural resources and overlook the basic importance of management through governance, and not only the management of natural resources through effective governance but also the management of their own activities and services through governance. The latter statement was proven by an environmental legal compliance audit of the Potchefstroom Local Municipality and a desktop study conducted by the North-West University that highlighted the lack of environmental legislation on the local level in South Africa. With the use of the Potchefstroom by-law generating project as a case study, this article argues that environmental by-laws may be the crucial, overlooked link for ensuring co-operative and integrated management of environmental issues.

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## 1 Introduction

Since the beginning of urbanisation almost 6000 years ago there has been a need for mutual responsibility and co-operation. This need was first met by the inhabitants acting in concert as co-property owners but later by municipal corporations on their behalf. These corporations became known in the 19<sup>th</sup> century as local government.<sup>1</sup> Urbanisation, therefore, created a need for a local political organisation as well as a local legal structure to provide an authoritative basis for local administration or government within the constitutional arrangements of a particular country and to regulate the conduct of the local community.<sup>2</sup>

Local government in developing countries has been challenged lately as it has never been challenged before. Today, half the world's population lives in towns and cities. Of the additional people expected between 2000 and 2015, nearly one billion will be added to urban areas compared to only about 125 million in rural areas. Virtually all this growth will take place in developing countries. For sustainable<sup>3</sup> urbanisation to be achieved, therefore, the scale of urbanisation must be recognised and urban development process guided and managed in a sustainable manner.<sup>4</sup>

The twenty first century is known to be the first true urban century as more than fifty per cent of the world's population will be living in cities, while up to seventy five per cent of production will occur in urban areas. The current resource need and the pollution and waste generation capacity of cities, combined with their rapid growth rates, are inherently unsustainable when compared to the required supply of resources. The negative impacts of this unsustainable relationship between cities and the general state of the environment culminates in a significant deterioration in the quality of life of urban dwellers, while potential investors are also discouraged from investing in cities of the developing world that are characterised by increasing levels

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<sup>1</sup> For the purpose of this article local government and local municipalities will be interpreted as having the same meaning.

<sup>2</sup> J Meyer *Local Government Law Volume 1: General Principles* (1978) at 2.

<sup>3</sup> Sustainability is defined by ICLEI 1999 as the ability to maintain a desired condition over time, without eroding natural, social or financial resource bases or capital. The objective of urban environmental management should be to manage all activities in such a way that objectives are realised while the integrity of environmental, social and fiscal systems are sustained.

<sup>4</sup> UN-Habitat *Sustainable Urbanisation – Achieving Agenda 21* (2002) at 4.

of environmental degradation.<sup>5</sup> It is, therefore, in the city or town's best interest to invest in responsible environmental management. It is increasingly acknowledged that city administrations need to become as innovative as their counterparts in the private sector have been to reduce their ecological footprint pre-actively, to improve the quality of life of their citizens and to grow their local economic base. As part of this innovation, cities and towns must ensure that they participate in co-operative governance by embracing their duties and responsibilities with regard to environmental management. There are numerous tools and initiatives available to achieve the above mentioned.

It is argued in this article that environmental by-laws are governance tools that local government can use to ensure an environment that is not harmful to peoples' health or well being.<sup>6</sup> Furthermore, this article explains the need for co-operative governance between the different spheres of governance in Integrated Environmental Management (IEM) and sustainable development. This article aims to give an overview of the Potchefstroom by-law generating project in order to explain the role of by-laws in local IEM and the role of local government in IEM.

## **2 Co-operative environmental governance and IEM: A South African Perspective**

Governance can be defined as the "structure of rule making, rule application and rule adjudication in a given society." This concept is not new, but it may mean different

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<sup>5</sup> JG Nel *Sustainability at the Local Level – Transferring Private Sector Initiatives and Instruments to Local Authorities* Paper delivered at the Konrad Adenauer Stiftung Colloquium on Local Government and the Law (2001) at 2.

<sup>6</sup> Section 24 of the Constitution states that:

Everyone has the right -

- (a) to an environment that is not harmful to their health or well-being; and
- (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -
  - (i) prevent pollution and ecological degradation;
  - (ii) promote conservation; and
  - (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

things to different people and depends on the level of governance implied.<sup>7</sup> In essence, governance can be seen as the exercise of economic, political and administrative authority to manage a country's affairs at all levels.<sup>8</sup> The 1996 Constitution specifically defines spheres of government versus tiers of government to promote interaction, co-operation, synergy and more importantly, effective and efficient governance.<sup>9</sup> Key to efficient governance is the harmonisation of good governance tools, not only the harmonisation of good governance tools themselves but also the harmonisation of governance tools between the different spheres of government. These governance tools may include the formulisation of policies, strategies, guidelines, procedures, legislation, regulations and by-laws. If harmonisation between these governance tools and between the different spheres of governance is achieved, then co-operative governance may be achieved. This article focuses specifically on by-laws as a governance tool.

The term "co-operative governance" is used increasingly in the context of Integrated Environmental Management (IEM) and has recently been the origin of many heated debates in South Africa. Central to these debates is the issue of the horizontal and vertical fragmentation of environmental legislation, including by-laws.<sup>10</sup> In fact, if harmonisation cannot be achieved by aligning environmental legislation between the different spheres of governance, co-operative governance in South Africa will remain an idealistic "pie in the sky". A fundamental element of an integrated approach to environmental management and governance is the clarification, simplification and

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<sup>7</sup> See Global Development Research Centre (GDRC) 'Understanding the concept of governance' at <http://www.gdrc.org/u-gov/governance-understanding.html>. [Date of access 14 August 2004].

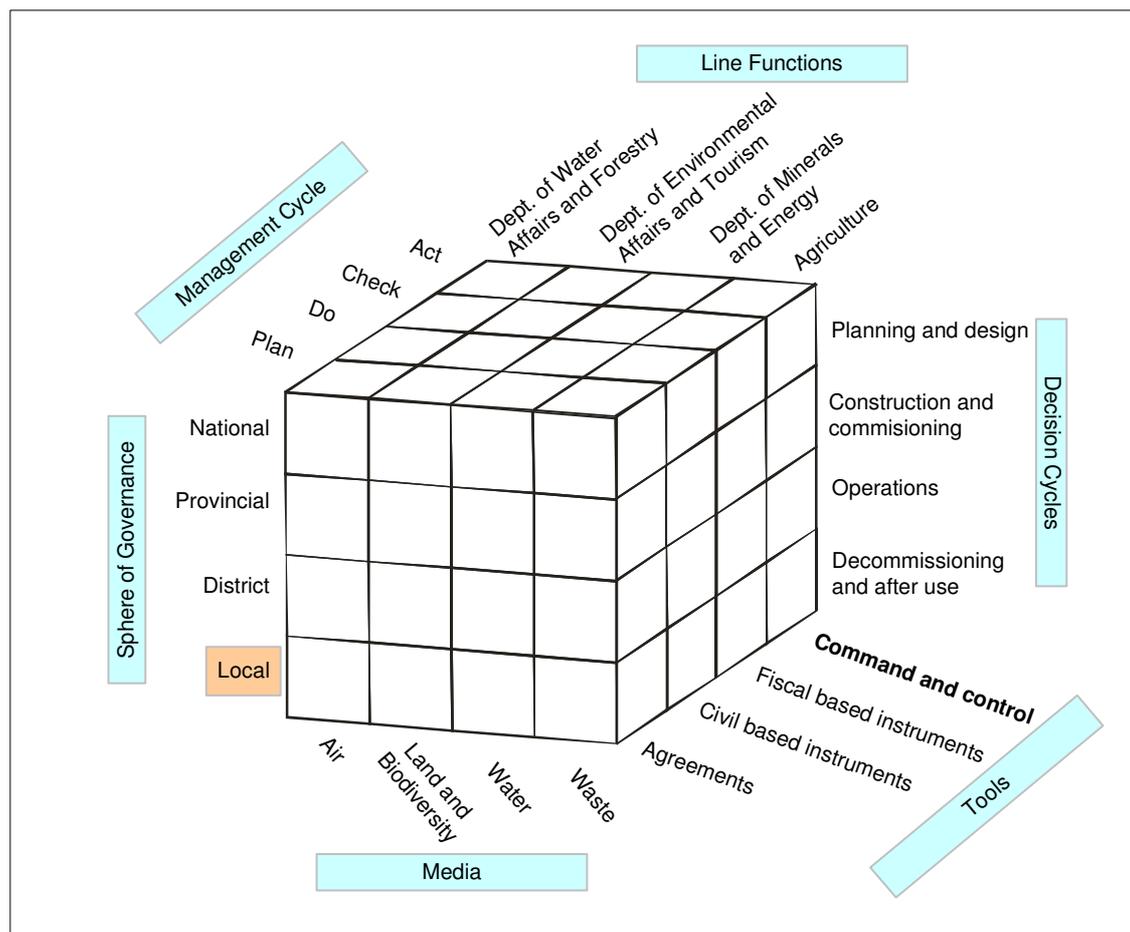
<sup>8</sup> See JG Nel and W Du Plessis 'Unpacking Integrated Environmental Management: A Step Closer to Effective Co-operative Governance?' in the *International Association for Impact Assessment South Africa Affiliate Annual National Conference Proceedings* (2003) at 89. Nel and Du Plessis 2003 defines environmental governance as:

the collection of legislative, executive and administrative functions, processes and instruments used by any organ of state to ensure sustainable behaviour by all as far as governance of activities, products, services, processes and tools are concerned.

<sup>9</sup> J Hattingh *et al* 'Obstacles to Successful Implementation of Governance Tools' (2003) *International Association for Impact Assessment South Africa Affiliate Annual National Conference Proceedings* at 128.

<sup>10</sup> See Nel and Du Plessis *op cit* n8 at 90.

alignment of existing and new legislation. It has been argued on numerous occasions that co-operative governance constitutes a prerequisite for IEM. In other words: the two terms are interrelated and dependant upon one another, with the subsequent effect that an aligned, integrated and effective environmental management system is created which may ultimately guide development, land use and environmental considerations on a road towards sustainability.<sup>11</sup> Figure 1 gives a holistic perspective on what needs to be integrated in IEM.



**Figure 1.** A Comprehensive IEM Model<sup>12</sup>

<sup>11</sup> LJ Kotze 'Co-operative Environmental Governance: Towards the Establishment of an Integrated Authorisation System in the North West Province' (2003) *International Association for Impact Assessment South Africa Affiliate Annual National Conference Proceedings* at 166.

<sup>12</sup> Adapted from Nel and Du Plessis op cit n8 at 95.

According to Nel and Du Plessis, the figure entails *inter alia* that environmental considerations should be integrated with decision and planning processes from a very early stage i.e. the pre-feasibility stage of planning and design processes and that all post planning phases of decision cycles should be accounted for. Integration should also include integration of the entire Plan-Do-Check-Act elements of

Special consideration should be given to the interrelations and interdependence of national, provincial, district and local spheres of governance on the Y axis in this model. One of the fatal flaws of co-operative governance and, therefore, IEM in developing countries such as South Africa is that decision-making, monitoring, enforcement and judicial responsibilities of environmental and land-use matters often lie with higher governmental departments. In the past, national, provincial and district authorities have absorbed the responsibilities, power and functions of local governments in South Africa with regard to environmental management and land-use matters. An area of the co-operative governance programme which needs improvement is that of local government. Since 1994, however, more power and responsibilities have been delegated to local authorities including the mandate to empower themselves with command and control tools such as by-laws. The mandate of local authorities to write environmental by-laws will be discussed in more detail in Section 5.1 of the article. In the next section the importance of decentralisation and the principle of subsidiarity will be discussed in the context of integrated environmental management.

### **3 Decentralisation of government and the principle of subsidiarity**

Decentralisation is the process of transferring powers and resources to local authorities representative of and accountable to, and administrators responsive to their constituents.<sup>13</sup> Decentralisation is one of today's most important trends and can be considered as a *sine qua non* not only in the development of local self government, but with regard to society as a whole. The following positive characteristics of decentralisation support the latter statement:<sup>14</sup>

- Decentralisation is one possibility for relieving the overburdening of central institutions.

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the classical Deming management cycle. Other elements of integration entails integration of all the environmental media to prevent intra-media impact transfer of impacts.

<sup>13</sup> A DeGrassi 'Constructing Subsidiarity, Consolidating Hegemony: Political Economy and Agro-Ecological Processes in Ghanaian Forestry' World Resources Institute (2002) at 6. De Grassi defines decentralisation after consulting Agarwal and Ribot (2000).

<sup>14</sup> P Kuklis 'The Principles of Subsidiarity' FDI – CEE Publications Online (2004) at 1.

- Decentralisation allows for focused problem solving because it provides knowledge of the specifics of local problems and shorter communication channels.
- Decentralisation creates the space and time needed for central authorities to solve essential and conceptual issues.
- It facilitates both more economical and more effective management of public affairs.
- Decentralisation is one of the most effective factors in helping develop the area of governance of public affairs.

Because of the abovementioned characteristics decentralisation is considered “the greatest factor of social change”. Strong support for decentralisation is embodied in the principle of “subsidiarity” that is, that decision-making, implementation, monitoring, enforcement and judicial resources are best conducted at the lowest level of government.<sup>15</sup> Pius XI supports the principle of subsidiarity strongly in his argument that “it is an injustice and at the same time a grave evil and disturbance of right order to assign to a greater and higher association what lesser and subordinate organisations can do”.<sup>16</sup> This argument is also valid in terms of environmental management as local government can play a significant role in environmental management. It is not advisable however, that higher associations withdraw completely from lower associations. Indeed the key to successful decentralisation

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<sup>15</sup> See De Grassi op cit n13 at 6. De Grassi argues that subsidiarity may actually raise more questions than it solves. While control by accountable and representative lower-level officials is justified, in principle, by increased efficiency, capacity development, responsiveness, and incorporation of local preferences, knowledge, resources and creativity, higher-level co-ordination is also justified by scale effects, transaction costs of decision making, positive or negative externalities across time and space, and equity concerns. It is argued that while subsidiarity may seem to be portend the desirability of decentralisation, the concept also raises crucial questions of who decides what is “practicable” (and hence what are the limits of decentralisation), on which criteria, with which evidence, and through which process. He continues to argue that by deciding where to allocate powers and resources thus inherently involves “the politics of the possible,” and consequently the principle of subsidiarity can and has been used across the political spectrum equally to justify higher-level intervention or non-intervention.

<sup>16</sup> JP Hochschild ‘The Principle of Subsidiarity and the Agrarian Idea’ at <http://www.nd.edu/~ndphilo/papers/Subsidiarity.html> [Date of access 14 August 2004].

and the principle to subsidiarity<sup>17</sup> is that higher associations should support lower associations in fulfilling their functions. Care should, however, be taken by governments that higher associations do not to absorb the power and function of lower associations. In this context, the relevance of co-operative governance is imperative for determining the role and responsibilities of local governments in IEM.

#### **4 The role of local government in IEM**

Local government has a crucial role and responsibility in addressing environmental management issues. As the sphere of government closest to the people, local government can best understand and reflect local needs and priorities and monitor local trends and emerging issues.<sup>18</sup> This argument is supported by the legal framework that directs environmental co-operative governance and management in South Africa. The same legal framework gives local government certain responsibilities and powers pertaining to environmental management.<sup>19</sup> Local government administrations in South Africa, therefore, have a complex relationship with environmental law. Local governments, like all citizens of a country must control their own activities and need to demonstrate compliance to legal requirements. They have, on the other hand, also both legislative functions and legal enforcement powers and duties.<sup>20</sup>

Local governments have four general areas of environmental influences, namely governance, own activities, services and conservation. These will be briefly discussed below.

The governance function involves three aspects namely, development of environmentally related legislation at the local level, executive mandate to implement legislative arrangements and a law enforcement function. Local government is, therefore, responsible for the development of new local by-laws to ensure that all the relevant environmental aspects are governed within a legislative framework. Local governments also have an executive function (including co-governance arrangements)

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<sup>17</sup> *Subsidium* is Latin for “help” or “assistance”<sup>9</sup>

<sup>18</sup> UN-Habitat ‘Sustainable Urbanisation – Achieving Agenda 2’ *DFID Publications London* (2002) at 28.

<sup>19</sup> Refer to section 5.1 of the article.

<sup>20</sup> *Nel op cit* n5 at 6.

coupled with enforcement. This refers specifically to environmental aspects such as air pollution, land use management, water management and waste management, etc.<sup>21</sup>

Local government is involved in a whole range of internal activities and owns or operates extensive infrastructure that needs to be managed. These own activities and government assets also require an environmental responsibility towards effective environmental management and compliance.<sup>22</sup>

Local government provides a range of infrastructure 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.<sup>23</sup>

Conservation is an important function in terms of environmental responsibility since local municipalities own large tracts of land with high conservation value. The general conservation function also entails provision of a general healthy environment conducive to a high quality of life with access to recreational facilities, clean air and water, as well as ample functional open space.<sup>24</sup>

It should be noted that the competence and environmental responsibility of local governments are influenced by a range of factors which may include appointed officials, elected politicians and civil society. Figure 2 illustrates this more clearly.

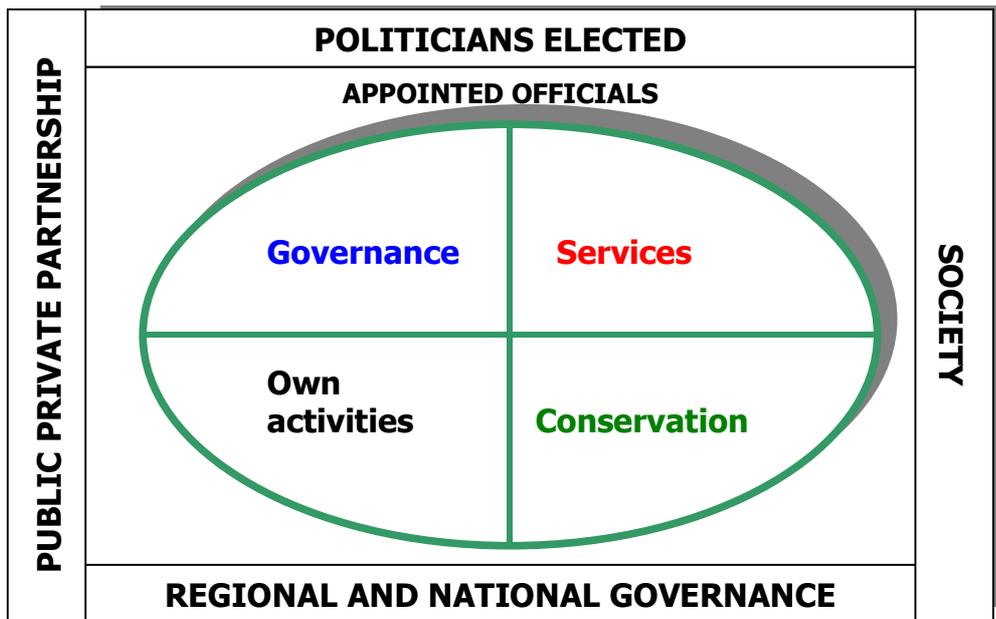
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<sup>21</sup> Potchefstroom Local Municipality ‘Integrated Environmental Programme’ Report drafted by the North-West University, Potchefstroom campus (2002) at 11.

<sup>22</sup> Op cit n21 at 11.

<sup>23</sup> Op cit n21 at 11.

<sup>24</sup> Op cit n21 at 11.



**Figure 2:** The Framework for IEM at the local government level

One of the best tools available for establishing the extent to which local governments are competent in fulfilling their constitutional and other legal duties as co-regulator within a matrix dispensation of co-operative governance is by means of an initial legal review.<sup>25</sup> The legal review should also assist in determining to what extent the local government's own activities and services are conducted in an environmentally responsible manner and highlight if environmental related services and conservation measure are implemented and maintained. All these factors should be evaluated under the four areas of control and influence to ensure that a complete and correct picture is generated by the review.<sup>26</sup> This was done in Potchefstroom, South Africa in 2002. The following section will give a brief overview of the Potchefstroom Integrated Development Plan (IDP) and the outcomes of the legal review with regard to environmental by-laws.

<sup>25</sup> For the purpose of this article an initial environmental review and an environmental legal audit will have the same meaning.

<sup>26</sup> Op cit n21 at 11.

## 5 The Potchefstroom by-law generating project

The initial legal review of the Potchefstroom Local Municipality has its origins in the Potchefstroom IDP.<sup>27</sup> According to the *Municipal Systems Act* 3 of 2000 ( hereafter referred to as the *Municipal Systems Act*), all municipalities (i.e. Metros, District Municipalities and Local Municipalities) have to undertake an integrated development planning process to produce integrated development plans (IDPs). Chapter 3 of the *National Environmental Management Act* 107 of 1998 (hereafter referred to as the NEMA) section 16(4)(a) and (b) encourages municipalities to support their relevant provincial Environmental Implementation Plans (EIPs).<sup>28</sup>

The legal compliance audit clearly indicated that the Potchefstroom Local Municipality was in dire need to improve their governance function so as to improve its ability to meet their constitutional and other legal duties within a matrix dispensation of co-operative governance (refer to Figure 2). The lack of efficient and up-to date bylaws was identified as one of the key reasons why Potchefstroom Municipality did not meet its governance function. It was, therefore, imperative that Potchefstroom Municipality should generate new environmental by-laws not only to improve their own government function but also to improve co-operative governance and integrated environmental management. The Potchefstroom city council requested the Centre for Environmental Management and the Faculty of Law of the North-West University to generate appropriate environmental by-laws for the city council.

The project consisted of a planning and research phase (phase 1) as well as an implementation phase (phase 2). In the planning and research phase of the project,

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<sup>27</sup> The IDP is a strategic planning instrument which guides and informs all planning, budgeting, management and decision-making in a South African municipality.

<sup>28</sup> The function of environmental implementation plans (EIPs) and environmental management plans (EMPs) are defined in the *Guidelines for Preparation of First Edition EIPs and EMPs*. EIPs and EMPs are primarily statutory instruments for the promotion of co-operative governance around environmental management, through the alignment of governmental policies, plans, programmes and decisions in respect of the environment. EIPs and EMPs are therefore particularly important in South Africa, due to the highly fragmented nature of environmental management, both horizontally between departments and vertically between spheres of government.

the extent of local authorities' power to legislate on matters affecting the environment was reviewed and the current Potchefstroom situation pertaining to existing by-laws was determined. The next section of the article gives an overview of legislation mandating South African local municipalities to generate environmental by-laws to govern environmental matters.

## *5.1 Phase 1 of the project: Planning and Research*

### *5.1.1 The desktop study to determine the legal mandate to generate environmental by-laws*

As part of subsidiarity and decentralisation, the 1996 Constitution delegates power and duties to local governments. The Constitution clearly sets out the responsibilities of local government with respect to sustainable development. Section 151 states that a municipality has the right to govern, on its own initiative, the local government affairs of its community, whereas section 152(1)(d) identifies the promotion of a safe and healthy environment as one of the objectives of a municipality. There is also a mandate upon local governments to ensure that this objective is achieved in section 152(2) of the act. The powers of municipalities are set out in the Constitution section 156(2) which states that a municipality may make and administer by-laws for the effective administration of the matters which it has the right to administer.<sup>29</sup>

The NEMA supports the “assisting” role of national government in section 46(2) in that it states that “Any municipality may request the Director-General (of Environmental Affairs and Tourism) to assist it with the preparation of bylaws on matters affecting the environment and the Director-General may not refuse such a request unreasonably.”

The Municipal Systems Act takes note that municipal councils, which are organs vested with legislative powers in municipalities, have as one of their objects the promotion of a safe and healthy environment in a municipality (section 4(2)(i) of the Systems Act). A municipal council can, therefore, pass by-laws, which will give effect to section 4(2)(i) (Section 11(1) and (3)). It must be noted that such a function

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<sup>29</sup> Section 152 and 156 of the 1996 Constitution.

cannot be delegated to another structure or organ within a municipality, but it must only be performed by a municipal council (Section 160(2)(a)).

Section 11(3)(e) of the *Municipal Structures Act 32 of 2000* (hereafter referred to as the Municipal Structures Act) states that “A municipality exercises its legislative or executive authority by implementing applicable national and provincial legislation and its by-laws.

It is, therefore, clear that the Constitution, the NEMA, the Municipal Systems Act and the Municipal structures act mandates local municipalities in South Africa to generate environmental by-laws.

### 5.1.2 *The desktop study to determine the current situation of Potchefstroom pertaining to environmental by-laws*

In order to obtain all information on local environmental by-laws applicable to the Potchefstroom scenario, extended desktop studies were done, experts consulted as well as municipal co-operation established where municipal by-law information could be accessed. It was found that Potchefstroom currently has environmentally related by-laws in the following limited areas (refer to Table 2).<sup>30</sup> **Table 1.** The current by-law situation in Potchefstroom

<b>By-law</b>	<b>Classification of By-law</b>
Standard Drainage By-law (1977)	Water & Waste
Standard Streets and Miscellaneous By-laws (1973)	Miscellaneous
Standard Electricity By-laws (1985)	Miscellaneous
Uniform Public Health By-law (1951)	Health & Safety
Municipality of Potchefstroom: Public Health By-laws (1959)	Health & Safety
By-laws relating to storage, use and handling of flammable liquids and substances (1982)	Health & Safety
By-law relating to Offensive Trades (1980)	Health & Safety
Town lands By-laws (1985)	Construction and Planning

<sup>30</sup> Wessels *et al* ‘Strengthening Co-operative Governance by Improving Environmental By-laws – A Potchefstroom Case Study’ in *IAIAsa Conference Proceedings: Co-operative Governance in South Africa: The Search for the Holy Grail* in September (2003) at 348.

<b>By-law</b>	<b>Classification of By-law</b>
Control of temporary advertisements(1973)	Construction and Planning
Cemetery By-laws (1972)	Miscellaneous
Standard Water-Supply By-Laws (1973)	Water
By-laws for the regulation of parks, gardens (1966)	Biodiversity
Refuse, solid waste and sanitary By-laws (1977)	Solid Waste
Standard Street Trading By-laws	Miscellaneous

The following conclusions were made from the results of the desktop study:

- Since the year 1985, no new by-laws pertaining to the environment have been introduced by the Potchefstroom Local Municipality, of which the situation is similar to that of most local municipalities in South Africa.
- Many of the by-laws available to Potchefstroom are currently outdated, and do not reflect the current environmental situation in Potchefstroom. They should, therefore, be upgraded in order to be relevant to the current situation. The performance potential of current arrangements is, therefore, not only crippled by the limitation of areas covered by by-laws, but also by the need to upgrade, expand and write new applicable by-laws.
- The results from the desktop study support the argument that outdated by-laws and by-laws which are not implemented may hamper the ability of a local government to meet its constitutional and other legal duties.

The planning and research phase of the project was followed by an implementation phase. In this phase, draft by-laws were generated to fill the gaps identified in the planning and research phase of the project. In the following section a brief description will be given of what by-laws were generated in the implementation phase of the project and what the purpose and scope of these by-laws are.

## ***5.2 Phase 2 of the project: Drafting the environmental by-laws***

At a workshop held in August 2003 by government, environmental specialists and the public, it was decided that five draft environmental by-laws should be generated that will ensure the administration of environmental affairs within the jurisdiction of Potchefstroom Local Municipality. These by-laws are:

- Scheduled and Offensive Trades By-laws
- Air Quality By-laws
- Biodiversity By-laws
- Waste Management By-laws
- Water Management By-laws.

A “Working Group” for each by-law was established and was tasked with the identification all the relevant issues that should be included in the by-laws and the writing of the by-laws. Each working group consisted of two specialists (one law specialist and one environmental specialist), a political representative and a member of the public. The contents of these by-laws will not be discussed in detail. It is, however, important to highlight the purpose and scope of each by-law to understand how these by-laws integrate and interrelate with each other.

### *5.3.1 Draft Scheduled and Offensive Trades By-laws*

These by-laws provide for the control and regulation of all scheduled trades and related activities, products, services and facilities within the Potchefstroom municipal area in order to promote sustainable development, the protection of the environment and the health and safety of the citizens of Potchefstroom. These by-laws should be read in conjunction with the Air Quality, Biodiversity, Water Management and Waste Management by-laws of the Potchefstroom City Council.<sup>31</sup>

### *5.3.2 Draft Air Quality By-laws*

These by-laws reform the law regulating air quality in the Potchefstroom jurisdictional area in order to protect and enhance the quality of air in Potchefstroom, taking into account the need for sustainable development, to provide for local norms and standards regulating air quality monitoring, management and control by the Potchefstroom Local Municipality, for specific air quality measures and for matters incidental thereto.<sup>32</sup>

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<sup>31</sup> Potchefstroom City Council ‘Draft Schedule and Offensive Trades By-Laws’ *Unpublished* 2003 at 2.

<sup>32</sup> Potchefstroom City Council ‘Draft Air Quality By-laws’ *Unpublished* 2003 at 2.

### 5.3.3 *Draft Biodiversity By-laws*

These by-laws provide within the framework of the National Environmental Management Act, 1998, and the National Environmental Management: Biodiversity Bill, 2003<sup>33</sup> for the management, regulation and conservation of Potchefstroom's biodiversity; the protection of species and ecosystems that warrant local protection; the sustainable use of indigenous biological resources and the fair and equitable sharing of benefits arising from bio-prospecting of genetic material derived from indigenous biological resources.<sup>34</sup>

### 5.3.4 *Draft Waste Management By-laws*

These by-laws provide for integrated waste management through the fundamental reform of existing by-laws relating to waste; to repeal certain by-laws and to provide for matters connected therewith.<sup>35</sup>

### 5.3.5 *Draft Water Management By-laws*

These by-laws consolidate the provisions applicable to water services within the Potchefstroom municipal area and make specific provision for every phase of water services and for other matters incidental thereto.<sup>36</sup>

## 5.4 *The integration and interrelation of the draft by-laws*

The main challenge of drafting the by-laws was to ensure the integration of the draft environmental by-laws themselves and the correlation and alignment of these by-laws with national and provincial legislation. If this were not achieved, the fragile relationship of integration and co-operative governance would have been severed and, therefore, the purpose of the exercise would have been defeated. This challenge was met by intensive research of existing national, provincial and local legislation relating to each individual identified issue in the by-laws. Each by-law, therefore, must be

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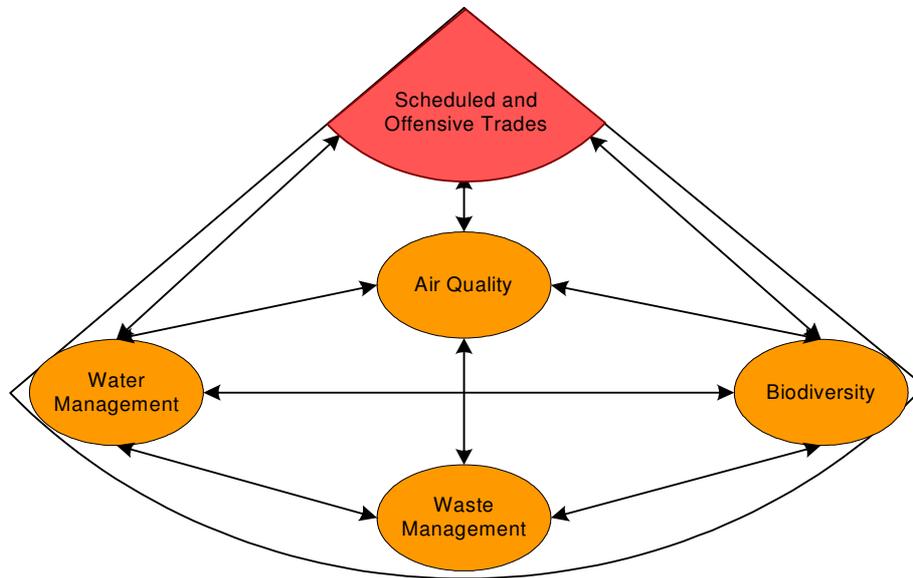
<sup>33</sup> The National Environmental Management: Biodiversity Bill, 2003 was replaced by the National Environmental Management: Biodiversity Act (Act 10 of 2004)

<sup>34</sup> Potchefstroom City Council *Draft Biodiversity By-laws* (Unpublished) 2003.

<sup>35</sup> Potchefstroom City Council *Draft Waste Management By-laws* (Unpublished) 2003.

<sup>36</sup> Potchefstroom City Council *Draft Water Management By-laws* (Unpublished) 2003.

read in conjunction with each other as well as relevant national and provincial legislation. Figure 3 illustrates the integration and interrelation of the draft by-laws to each other.



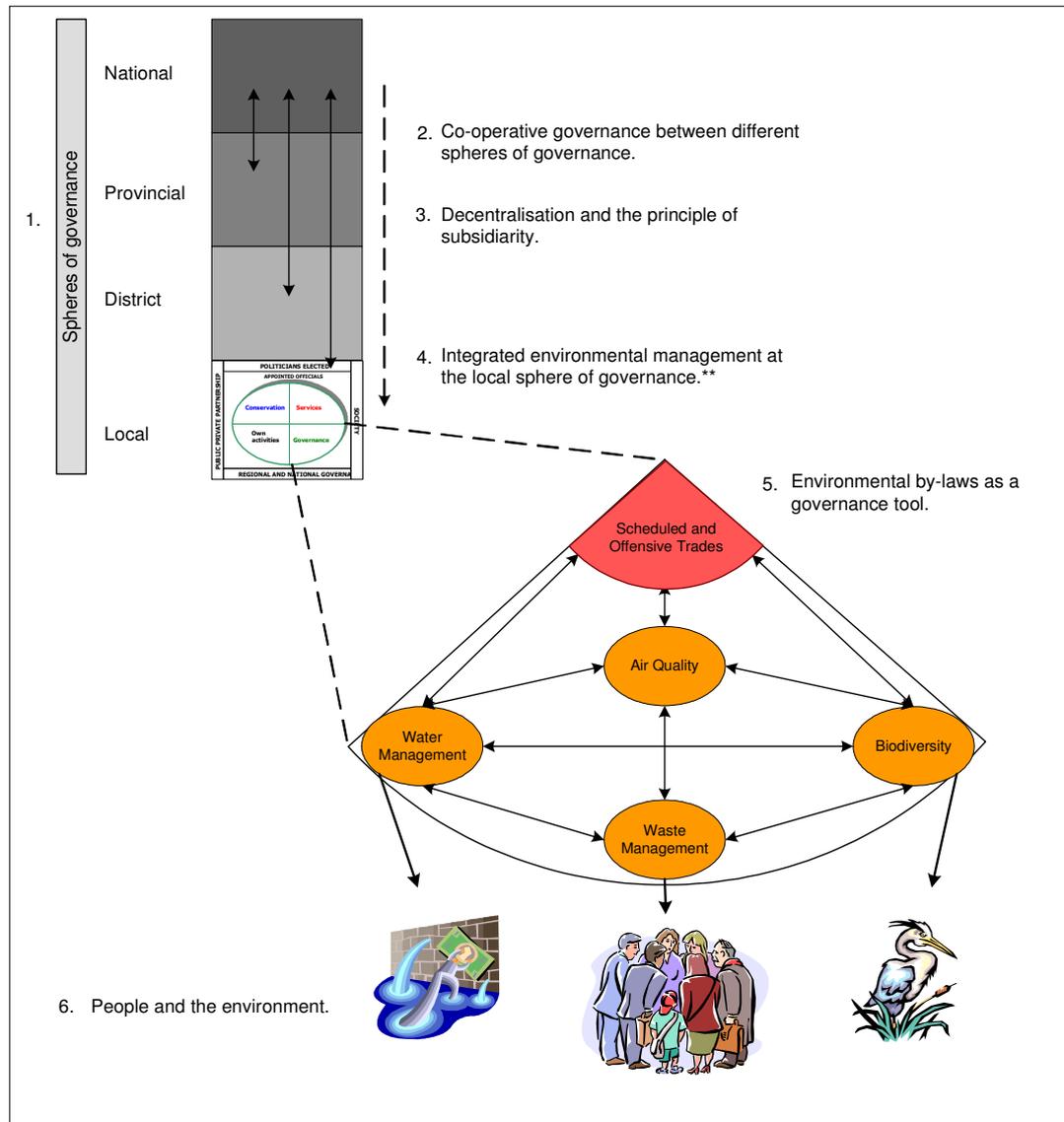
**Figure 3.** The Framework for the Integration and the Interrelation of the Potchefstroom by-laws

The strong correlation between the Scheduled and Offensive Trades By-laws and the other environmental by-laws can be seen in Figure 3. The Scheduled and Offensive Trades By-laws play a crucial role in the integration of environmental by-laws in that they identify the trades that may pose significant threats to the elements of the environment. This by-law will give the municipality the power to prosecute and to regulate offensive traders within the Potchefstroom jurisdictional area. If the Scheduled and Offensive Trades By-laws are used in correlation with the other by-laws, the environmental impacts on the environmental media will be minimised. This is a small but crucial step in the quest for IEM and sustainable development.

## 6 The role of by-laws in Integrated Environmental Management

In this article the relationship between successful co-operative environmental governance and IEM has been explained. Furthermore, the positive aspects of decentralisation and the need for subsidiarity in the quest for IEM were discussed in Section 2 of the article before explaining the role of local government in IEM. It was

mentioned in Section 4 of the article that the governance function of local government in the framework for IEM involves three aspects. Two of these aspects are the development of environmental related legislation and the enforcement of this legislation. Figure 4 aims to bring all the above mentioned together in order to explain the role of by-laws in the IEM model.



**Figure 4.** The Role of Environmental By-laws in IEM

Figure 4 illustrates that efficient environmental by-laws as a governance tool can influence people and the environment as local government is the sphere of government closest to the people and hence environmental issues.<sup>37</sup> By-laws give

<sup>37</sup> Refer to nr. 5 and 6 of Figure 4.

local government the power to control specific environmental issues and problems in its jurisdictional area which may have been overlooked by national and provincial governance tools. Furthermore, by-laws can strengthen existing national and provincial environmental legislative requirements. By-laws may also be used to prosecute offenders and to control certain identified scheduled and offensive trades. As stated before, environmental by-laws should integrate with each other as well as national and provincial legislation. If this can be achieved, and if by-laws are administered and enforced efficiently, environmental by-laws may be the most efficient governance tool in IEM.

## **7. Conclusion**

It has been argued in this article that environmental by-laws may be the missing link of integrated environmental management and co-operative environmental governance. The principle of subsidiarity and decentralisation supports this argument in that decision-making, implementation, monitoring, enforcement and judicial resources can be conducted best at the lowest level of government, as local government is the sphere of governance closest to the people and hence environmental issues. The Constitution and other national legislation mandates local government to generate and administer their own by-laws. The Potchefstroom case study proved however, that environmental by-laws are governance tools in South Africa that is often neglected due to poor administration at the local governance level. It is, therefore, critical that local governments should review their existing environmental by-laws and the administration thereof in order to identify gaps in their role as co-regulator of environmental issues. If these gaps are filled by updating existing by-laws and by generating new by-laws, local governments will be able to play a significant role in integrated environmental management and sustainable development.

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\*\* Refer to Figure 2 on page 9 for clarification of the framework for IEM at the local level of government.