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**THE PROMOTION AND PROTECTION OF PUBLIC HEALTH IN SOUTH AFRICA  
THROUGH ENVIRONMENTAL LEGISLATION WITH SPECIFIC REFERENCE TO  
AIR POLLUTION**

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**NOVEMBER 2001**

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THROUGH ENVIRONMENTAL LEGISLATION WITH SPECIFIC REFERENCE TO  
AIR POLLUTION**

**BY: MBULUNGENI NEPFUMBADA**

**SUBMITTED IN PART FULFILMENT OF THE REQUIREMENTS FOR THE  
DEGREE OF PUBLIC HEALTH LAW IN THE SCHOOL OF LAW IN THE  
FACULTY OF LAW, ECONOMICS AND MANAGEMENT AT UNIVERSITY OF  
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**NOVEMBER 2001**

DECLARATION

The Registrar (Academic)  
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Dear Madam

I, Mbulungeni Nepfumbada

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Hereby declare that the dissertation entitled

The Promotion and the Protection of Public Health in South Africa through Environmental  
Legislation with Specific Reference to Air Pollution

Is the result of my own investigation and research and that it has not been submitted in part or  
in full for any other degree or to any other University.

.....  
(Signature)

.....  
Date

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## List of Abbreviations

<b>CAER:</b>	Community Awareness and Emergency Response
<b>CAPCO:</b>	Chief Air Pollution Control Officer
<b>CSIR:</b>	Council of Scientific and Industrial Research
<b>ECA:</b>	Environment Conservation Act
<b>EIA:</b>	Environmental Impact Assessment/ Environmental Impact Analysis
<b>EMCA:</b>	Environmental Management Co-operation Agreement
<b>EMS:</b>	Environmental Management Systems
<b>EPA:</b>	Environmental Protection Agency
<b>FCCC:</b>	Framework Convention on Climate Change
<b>ISO:</b>	International Organization of Standardisation
<b>NAPAC:</b>	National Air Pollution Advisory Committee
<b>NEMA:</b>	National Environmental Management Act
<b>NGO:</b>	Non-Governmental Organization
<b>NOx:</b>	Nitrogen Oxide
<b>POP:</b>	Persistent Organic Pollutant
<b>SADCEA:</b>	South Durban Community Environmental Alliance
<b>SO<sub>2</sub>:</b>	Sulphur Dioxide
<b>UNEP:</b>	United Nations Environmental Protection
<b>USA:</b>	United States of America
<b>VOC:</b>	Volatile Organic Compound
<b>WHO:</b>	World Health Organization

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# CHAPTER

## 1

### ANALYSIS OF AIR POLLUTION LEGISLATION AND CASE LAW

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#### 1.1. Introduction

The Constitution of South Africa<sup>1</sup>, (the Constitution) envisages in the Bill of Rights<sup>2</sup> 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.<sup>3</sup>

There are other statutes that support the Constitution, for example, the National Environmental Management Act (NEMA).<sup>4</sup> This Act states in its preamble that:

“ Whereas many inhabitants of South Africa live in an environment that is not harmful to their health and well-being; everyone has the right to an environment that is not harmful to his or her health or well-being; and everyone has the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation.”

Both the Constitution and NEMA are not only concerned with the environment but also with the health and well-being of South Africans. The World Health Organization (WHO) has defined health, as ‘more than the absence of disease and infirmity, it is a state of complete physical, mental and social well-being.’ Environmental health in broad term is concerned with factors in the environment associated with health, well-being and disease, including physical, chemical and biological conditions.

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<sup>1</sup> Act 108 of 1996.

<sup>2</sup> Chapter 2 of the Constitution.

<sup>3</sup> Section 24.



The term 'environment', according to Rabie, is widely used and it means various things to different people hence reference to 'environment problems' should indicate that impaired interrelationships between human beings and their physical surroundings are the central concern.<sup>5</sup>

NEMA defines the term environment as:

The surroundings within which humans exist and that are made up of:

- i. the land, water and atmosphere of the earth;
- ii. micro-organisms, plant and animal life;
- iii. any part or combination of (i) and (ii) above and the interrelationships among and between them; and
- iv. the physical, chemical and aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.<sup>6</sup>

There are many aspects of the environment that may affect physical or mental health either in a positive or negative way. Amongst those is pollution. Several statutes and authors define the concept 'pollution'. Thus, for example, the National Water Act<sup>7</sup> defines pollution as follows:

- ' the direct or indirect alteration of the physical, chemical or biological properties of a water resource so as to make it:
- (a) less fit for the beneficial purpose which it may reasonably be expected to be used;
  - (b) harmful or potentially harmful-
    - (aa) to the welfare, health or safety of human beings;
    - (bb) to any aquatic or non-aquatic organisms;
    - (cc) to the resources quality; or
    - (dd) to property'

One of the main environmental factors prevailing in South Africa which predispose the country to extensive environmental degradation is air pollution. According to Thankamma Jacob, air pollution is the most crucial form of pollution, from the public health point of view. This, he says, is because 'on average, an individual breathes 22 000 times a day, inhaling 16kg of air, which contributes about 80% of the daily intake by weight. It therefore

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<sup>4</sup> 107 of 1998.

<sup>5</sup> Fuggle & Rabie, *Environmental Management in South Africa* (1992) at 4.

<sup>6</sup> Section 1.

follows that life subsists so long as breath lasts. Without the substance of breath, life in a creature is impossible. To the system of breath owes the functional operation of life'.<sup>8</sup> Petrie *et al* define air pollution as '... the anthropogenic discharge of matter (gas, liquid, or solid) to the atmosphere at levels which have undesirable effects on the human, natural and physical environment'.<sup>9</sup>

## 1.2. Air Pollution Control Legislation

The legal source for environmental law in South Africa is in the first instance found in the Constitution. The Constitution fundamentally altered the legal environment in South Africa, and all laws must be interpreted within the context of the Constitution. Apart from the Constitution there is NEMA and the Environment Conservation Act (ECA),<sup>10</sup> which are of fundamental importance. These sources will be discussed separately below.

### A. The Constitution of the Republic of South Africa<sup>11</sup>

In 1996, South Africa adopted a new Constitution, which contains a Bill of Rights. The Bill of Rights is one of the most substantive and forward-looking legal frameworks within which fundamental political and social change can be effected. The Constitution sets out legislative and executive authority of different spheres of government within a framework of co-operative governance.

This legislation is relevant to pollution for two reasons. Firstly, the Bill of Rights contains a number of rights relevant to integrated pollution and waste management. If an Act or a particular statutory provision does not uphold these rights, it is rendered unconstitutional. Secondly, the Constitution provides the legal basis for allocating powers to different spheres of government, and is thus relevant to the institutional regulation of integrated pollution and waste management.<sup>12</sup>

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<sup>7</sup> 36 of 1998.

<sup>8</sup> Air Purifiers that Pollute, *The Hindustan Times*, August 5, 1989.

<sup>9</sup> Fuggle and Rabie, *Environmental Management in South Africa*, at 417.

<sup>10</sup> 73 of 1979.

<sup>11</sup> 108 of 1996.

The most pertinent fundamental right in the context of integrated pollution is the environmental right in section 24 of the Constitution which provides 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 ecological sustainable development and use of natural resources while promoting justifiable economic and social development’.

This section of the Bill of Rights guarantees the people of South Africa the right to an environment that is not detrimental to human health or well-being, and specifically imposes a duty on the State to promulgate legislation and other steps to ensure that the right is upheld and that, among other things, pollution and ecological degradation is prevented.<sup>13</sup>

The environmental right albeit under the Interim Constitution<sup>14</sup> was first considered in the *Minister of Health and Welfare v Woodcarb (Pty) Ltd. and Another*.<sup>15</sup> In this case, the Minister of Health and Welfare sought an interdict preventing a saw-milling plant carrying on operations on the ground that certain provisions of the Atmospheric Pollution Prevention Act,<sup>16</sup> had not been complied with. In finding that the respondent had been operating the burning process without the required certificate, the court stated that the generation of smoke in these circumstances, in the teeth of the law as it were, is an infringement of the right of the respondents neighbours’ right to an environment which is not detrimental to their health or well-being as enshrined in the Interim Constitution.

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<sup>12</sup> Discussion Document on Integrated Pollution Control and Waste Management at 22.

<sup>13</sup> *Ibid.*

<sup>14</sup> Act 200 of 1993.

<sup>15</sup> 1996 (3) SA 155 (N).

<sup>16</sup> 45 of 1965.

## B. National Environmental Management Act<sup>17</sup>

The object of the NEMA is to provide for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance, and procedures for co-ordinating environmental functions exercised by organs of state, and to provide for matters connected therewith.

Chapter 7 of this Act deals with compliance and enforcement. Under this chapter, section 28 imposes a duty of care and remediation of environmental damage. Section 28 (1) provides that 'every person who causes, or has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment'.

The measures required in terms of subsection (1) may include measures to:

- investigate and evaluate the impact on the environment;
- inform and educate employees about the risks of their tasks and the manner in which their tasks must be performed in order to avoid causing significant pollution or degradation of the environment;
- cease, modify or control any act, activity or process causing the pollution or degradation;
- contain or prevent the movement of pollutants or causant of degradation;
- eliminate any source of pollution or degradation; or
- remedy the effects of pollution or degradation.<sup>18</sup>

The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the

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<sup>17</sup> 107 of 1998

<sup>18</sup> Section 28(3).

environment.<sup>19</sup> NEMA has adopted the 'polluter pays principle',<sup>20</sup> and the idea behind this principle is that the costs of pollution should be borne by the generator of the pollution rather than the society at large.

Where the person fails to comply with the principles of NEMA, one can choose to lay a charge and if the government does not prosecute, the polluter can be prosecuted privately. Those with *locus standi* can go to court to stop any person from carrying on the pollution. If there is a duty on someone to do something, such as cleaning up pollution, interested persons can approach the court for an order compelling such a person to do what is their duty.

### C. Environment Conservation Act<sup>21</sup>

The objects of this Act were to provide for the effective protection and controlled utilization of the environment, and for matters incidental thereto.<sup>22</sup> The control of air pollution is covered in Part V of the Act. This Part deals with the control of activities, which may have detrimental effect on the environment. Section 21(1) empowers the Minister to identify those activities which in his or her opinion may have substantial detrimental effects on the environment, whether in general or in respect of certain areas.

The activities which have been identified which relate to air pollution include, land use and transformation; agricultural processes; transportation; energy generation and distribution; and also chemical treatment.<sup>23</sup> Section 22(1) prohibits the undertaking of such identified activities except by virtue of a written authorization issued by the Minister or by a competent authority or local authority or an officer designated by the Minister. Section 22(2) states that authorisation shall only be issued after consideration of reports concerning the impact of the proposed activity and of alternative proposed activities on the environment.

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<sup>19</sup> Section 2(4)(p).

<sup>20</sup> Glazewski, *Environmental Law in South Africa* (2000) at 20.

<sup>21</sup> 73 of 1986.

<sup>22</sup> Long title to the Act.

<sup>23</sup> Section 21(2).

The Minister or the competent authority has discretion to either grant or refuse the authorization as he or she or it deems necessary. The main function of the report is to determine the impact of the particular proposed activity on the environment and health.

Provision for regulations regarding such reports is made in Part VI of the Act.<sup>24</sup> Section 26 gives the Minister or a competent authority powers to make regulations regarding the activities identified in Section 21(1) or those activities prohibited in terms of section 23(2) concerning the scope and content of the environment impact report. General regulatory powers provide that any regulations made under Part VI may provide that an officer, local authority or government institution may by notice, call upon a person contravening a provision of this Act to take certain steps or to cease certain activities within a specified period.<sup>25</sup>

Section 28(e) states that any regulation made under Part VI may provide that any person who contravenes, or fails to comply with, any provision thereof, shall be guilty of an offence and liable on conviction to a fine not exceeding R100 000 or to imprisonment for a period not exceeding 10 years or to both such fine and imprisonment, and to a fine not exceeding three times the commercial value of anything in respect of which the offence was committed, and, in the event of a continuing contravention, to a fine not exceeding R250,00 or to imprisonment for a period not exceeding 20 days or to both in respect of everyday on which such contravention continues.

It is submitted that although the fines and penalties imposed seem to be high, they however, do not necessarily stop or deter polluters from polluting. This is because most of these polluters are financially secure and can therefore afford to pay such fines. Such industries may not be significantly affected by large amounts of fines. A more strict punishment is required such as the closure of non-compliant industries.

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<sup>24</sup> Section 24- 28A.

<sup>25</sup> Section 28.

#### D. Atmospheric Pollution Prevention Act<sup>26</sup>

This is the central Act regulating air pollution in South Africa. The Act is administered by the Minister of Environmental Affairs and Tourism through the Chief Directorate: Environmental Quality and Protection. The administration of this Act was transferred from the Department of Health in 1995.

The Act consists of six parts, Part I deals with institutional aspects including establishment of the National Air Pollution Advisory Committee (NAPAC)<sup>27</sup> and the appointment of the Chief Air Pollution Control Officer (CAPCO).<sup>28</sup> The other four parts form the core of the Act. Part II deals with the control of noxious and offensive gases, Part III deals with the control of smoke pollution, Part IV deals with the control of dust pollution and Part V deals with the control of vehicle emissions. Part VI contains some general provisions including a provision relating to the disclosure of information. Regulation of the four types of air pollution is outlined below.

##### *PART I: Establishment of National Air Pollution Advisory Committee and Appeal Board and Appointment and Powers of Officers*

The Act provides for the establishment of a NAPAC, which consists of not less than seven and not more than eleven persons appointed by the Minister. One of the members of this committee may be designated by the Minister as the chairman and another one as the vice-chairman of the committee.<sup>29</sup> The functions of the committee include advising the Minister on all matters relating to the control, abatement and prevention of air pollution; studying and reporting to the Minister upon measures taken outside the Republic for the control of air pollution; stimulating interest in the problem of air pollution and for that purpose arranging for the delivery of lectures and addresses. Other functions include the holding of discussions and the displaying of pictures, cinematograph films or exhibitions relating to that problem; and advising the Minister generally in regard to any matter relating to air

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<sup>26</sup> 45 of 1965.

<sup>27</sup> Section 2(1).

<sup>28</sup> Section 6(1).

<sup>29</sup> Section 2(1) and (2).

pollution as to which the committee considers it necessary to advise the Minister or which he may refer to the committee for its advice.<sup>30</sup>

The Act also makes provision for the appointment of a sub-committee on the recommendation of the committee. The sub-committee will advise and assist the committee in the performance of its functions under this Act.<sup>31</sup> The Minister may establish an Air Pollution Appeal Board to hear and determine appeals from decisions of any regional appeal board.<sup>32</sup> In terms of section 5(2), the board shall consist of three members who shall be appointed by the Minister after consultation with the committee and shall be persons who are suitably qualified to perform the functions devolving upon them.

The Minister is empowered in terms of section 6(1)(a) to appoint an air pollution control officer who shall exercise the powers and perform the functions assigned to the chief officer under this Act. The Minister may appoint as many persons as he considers necessary to be inspectors.<sup>33</sup> The chief officer and inspectors must be persons who are technically qualified to exercise control over atmospheric pollution by virtue of their academic training in the natural sciences or engineering and their practical experience in industry together with a knowledge of the problems concerning atmospheric pollution relating thereto.<sup>34</sup>

The chief officer and inspectors are vested with the powers to enter without prior notice, premises where a scheduled process is or is suspected to be carried on in order to examine any suspected process in which any noxious or offensive gas is used or produced.<sup>35</sup> The officers may also require from the person in charge of any such premises, the production of the registration certificate or provisional registration in terms of section 7(1)(b).

Persons who falsely hold themselves as chief officers or inspectors, or refuse or fail to answer any question lawfully put to them by the chief officer or an inspector, or refuse or fail to comply with any lawful requirement of the chief officer or an inspector in the

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<sup>30</sup> Section 3.

<sup>31</sup> Section 4.

<sup>32</sup> Section 5(1).

<sup>33</sup> Section 6(1)(b).

<sup>34</sup> Section 6(3).

<sup>35</sup> Section 7(1)(a).



exercise of such powers or the performance of such duties or functions, shall be guilty of an offence, as contemplated in section 7(2) of the Act.

*PART II: Control of Noxious and Offensive Gases*

Noxious or offensive gases are defined in the definition section as 'a group of compounds which when in the form of certain gases may be declared noxious or offensive gases'.<sup>36</sup> The second schedule of the Act lists a number of processes which may not be operated within a controlled area unless the operator possesses a valid registration certificate allowing him to carry on that process in the premises specified in the certificate.

This part of the Act is aimed at regulating industrial pollution. The objectives of the Department of National Health and Population Development with regard to industrial pollution include the effective control of industries, limiting of sulphur dioxide and nitrogen oxide levels to acceptable levels, the limit of volatile hydrocarbon levels to acceptable levels, the elimination of visible particle emissions from industries, the limitation of specific noxious emissions from specialised industries, the monitoring of all sources of emissions as far as possible and the monitoring of environmental pollution levels by industries as part of the national monitoring programme.

The Department of Health has also listed several key elements in the application of its air pollution control policy. These include:

- sound physical planning practices for the siting of new industry;
- the installation of advanced air cleaning equipment in all new plants;
- the regular reviewing of emission standards;
- a programme for the upgrading of the existing equipment; and
- regular inspection of all industries.<sup>37</sup>

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<sup>36</sup> Section 1.

<sup>37</sup> Press Release, Department of National Health and Population Development, 17 September 1990.

The regulation is centred around scheduled processes. Scheduled process means any works or processes specified in the second schedule.<sup>38</sup> Since 1968, the whole of South Africa has been declared a controlled area with regard to the production of noxious or offensive gases. The Act prohibits a person from carrying on a scheduled process in or on any premises unless he is a holder of a current registration certificate.<sup>39</sup> Before a person can be granted an application, the chief officer must be satisfied that the best practicable means are being adopted for preventing or reducing to a minimum the escape to the atmosphere of noxious or offensive gases likely to be produced by the scheduled process in question.<sup>40</sup>

This issue was addressed in the case of the *Minister of Health v Drums and Pails Reconditioning CC t/a Village Drums and Pails*<sup>41</sup> The applicant Minister, who administered the Act prior to the Minister of Environmental Affairs and Tourism in 1995, brought a successful application for an interdict prohibiting the respondent industry concerned from carrying on a chemical waste incineration process. The process entailed the burning of second hand drums containing noxious and offensive gases as defined in the Act. The court dismissed the respondent's contention that it had not in fact been operating the incinerator and held that respondent had not obtained a valid registration certificate as required under section 9 of the Act and granted the interdict.

The term 'best practicable means' includes the provision and maintenance of the necessary appliances to that end, the effective care and operation of such appliances, and the adoption of any other methods which, having regard to local conditions and circumstances, the prevailing extent of technical knowledge and the cost likely to be involved, may be reasonably practicable and necessary for the protection of any section of the public against the emission of poisonous or noxious gases, dust or any such fumes.<sup>42</sup>

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<sup>38</sup> Section 1.

<sup>39</sup> Section 9.

<sup>40</sup> Section 10(2).

<sup>41</sup> 1997 (3) SA 867 (N).

<sup>42</sup> Section 1.

The most pressing problem regarding smoke control in South Africa at present is the products of combustion in less affluent residential areas where the past attempts at realising a solution have failed because of factors such as the origin, location, and structure of the townships, inadequate planning for energy and transport requirements, socio-economic factors, coal as a primary energy source and a lack of education regarding the dangers of air pollution.<sup>43</sup> The smoke could be from industry and residential and rural areas. Smoke is defined as including 'soot, grit and gritty particles emitted in smoke'.<sup>44</sup>

There are three different levels of smoke control. The first relates to the enforcement of the provisions of the Act. This includes the installation of fuel-burning appliances, siting of new equipment and the control of smoke or other products of combustion causing nuisance. This level applies to smaller local authorities in country regions where industrialisation is not as highly developed. The second level regulates smoke problems of a more serious nature and includes exercising control over pollution emanating from boilers and space heating appliances in flats, offices, light industries and burning of waste. The third level applies mainly to residential areas in which smoke control zones are established. In these areas, no one may permit the emission of smoke of a density or content which obscures light to an extent greater than twenty percent.<sup>45</sup>

This part of the Act, with the exception of section 14A, only applies in areas in which the Minister has, after consultation with the Minister of Trade and Industry, by notice in the gazette declared to be applicable.<sup>46</sup> The local authorities are given powers to be exercised in respect of any area under their jurisdiction subject to the provisions of subsections (4) and (6).<sup>47</sup> In terms of section 14A, no person is allowed to manufacture or import any fuel-burning appliance for use in a dwelling house, which does not comply with the requirements prescribed by regulations under section 44. A person must first obtain written authority for the manufacture or import thereof from the chief officer.

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<sup>43</sup> Discussion Document on Integrated Pollution Control and Waste Management at 14.

<sup>44</sup> *Ibid.*

<sup>45</sup> Fuggle & Rabie (note 5 above) at 442.

<sup>46</sup> Section 14 (1).

<sup>47</sup> Section 14 (3).

The chief officer has discretion to refuse or grant the authority for the manufacture or import of any fuel- burning appliance.<sup>48</sup> Contravention of this provision is an offence in terms of section 14A (3).

Section 15 prohibits the installation of fuel burning appliance in or on any premises unless such appliance is so far as reasonably practicable capable of being operated continuously without emitting dark smoke or smoke of colour darker than may be prescribed. The term 'fuel burning appliance' means any furnace, boiler or other appliance designed to burn or capable of burning liquid fuel or gaseous fuel or wood, coal, anthracite or solid fuel, or used to dispose of any material by burning or to subject solid fuel process involving the application of heat.<sup>49</sup> The local authority is also given powers in terms of section 16(1) to reject any plan which provides for the construction of any chimney which would carry smoke, among others, unless the height is as far as is reasonably practicable sufficient to prevent smoke from becoming prejudicial to health or a nuisance to occupiers of premises in the surrounding areas.

Section 16(2) sets out the criteria that the local authority must consider when approving plans. This includes, the purpose for the chimney, the position and nature of any other buildings, the levels of land in the surrounding areas, and any other matter, which the local authority thinks must be considered. Section 17 sets out the procedure where smoke or other products of combustion cause nuisance. An occupier of premises may make a representation to the local authority and if the local authority is satisfied that smoke emanating from that premise is a nuisance to the said occupier, it may serve notice on the person responsible calling him to abate the nuisance. Such a notice must be within a period determined by the local authority after consultation with the chief officer. This section also elaborates on the procedures for serving and complying with the notice and provides for a criminal sanction where it is not carried out.<sup>50</sup>

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<sup>48</sup> Section 14A (2).

<sup>49</sup> Section 1.

<sup>50</sup> Section 17(3)-(7).

The local authorities have been granted general powers to make regulations for the control of smoke.<sup>51</sup> The regulations may include prohibitions on smoke emissions which is of a darker colour or greater density,<sup>52</sup> on the installation or the alteration or extension of fuel burning appliance which do not comply with the requirements stipulated, and their removal.<sup>53</sup> They may also prohibit the use or sale of solid fuel in a dwelling house which does not comply with the stipulated requirements,<sup>54</sup> prescriptions on the keeping of records regarding fuel burning appliances,<sup>55</sup> powers and functions of the inspectors.<sup>56</sup> The regulations may require the installation and maintenance of record-keeping apparatus,<sup>57</sup> prescription of requirements in respect of heating and cooking facilities in building<sup>58</sup> and also the effective control of emission of smoke and other related matters.<sup>59</sup>

Failure to comply with the regulations may result in penalties not exceeding a fine of R200, 00 for the first offence or an imprisonment for a period of six months and in the case of second or subsequent offence, a fine of R1000, 00 or imprisonment for a period of one year.<sup>60</sup> For the regulation to be effective, it has to be approved by the Minister on the recommendation of the committee and also after consultation with the Minister of Trade and Industry. It also has to be promulgated by the Minister by notice in the Gazette.<sup>61</sup> Section 19 sets out procedures to be followed in the event of contravention of regulations.

#### *PART IV: Dust Control*

A prevalent form of air pollution in South Africa is dust, caused mainly by intense mining activities.<sup>62</sup> Control of dust pollution lies mainly with the National Department of Environmental Affairs and Tourism through the chief officer. This part of the Act provides for the abatement of dust at two main sources namely; dust arising from waste mine-dumps

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<sup>51</sup> Section 18(1).

<sup>52</sup> Section 18(1)(a).

<sup>53</sup> Section 18(1)(b).

<sup>54</sup> Section 18(1)(d).

<sup>55</sup> Section 18(1)(e).

<sup>56</sup> Section 18(1)(f).

<sup>57</sup> Section 18(1)(g).

<sup>58</sup> Section 18(1)(h).

<sup>59</sup> Section 18(1)(l)(k).

<sup>60</sup> Section 18(4).

<sup>61</sup> Section 18(5).

<sup>62</sup> Glazewski, (note 20) at 727.

and dust emanating from industrial processes not covered by Part II of the Act. Industrial processes covered by this part of the Act include sandblasting operations, dry powder spray-painting, woodworking and carpentry shops, and the handling of various chemicals in dry powder form.

Dust is controlled by empowering the chief officer to prescribe steps which must be taken to reduce dust generated by industrial processes and which is causing nuisance to persons in the vicinity.<sup>63</sup> Another legislative sanction that applies to dust control is dumping. In terms of section 28(1)(b), it is prohibited to deposit or cause to or permit to be deposited on any land a quantity of matter which exceeds 20,000 cubic metres in volume. The Minister is also empowered to make regulations concerning dust and such regulations may be delegated for administration to any person so authorised by the Minister. The objectives of the department are aimed at limiting dust from mine-dumps to a minimum; eliminating health hazards from asbestos mine-dumps; and limiting dust from non-scheduled process to acceptable levels.<sup>64</sup>

#### *PART V: Control of Vehicle Emissions*

This part only applies to areas under the jurisdiction of a local authority. The Minister may declare such jurisdiction to be applicable by notice in the Gazette after consultation with the committee and the Premier of the province in which such area is situated.<sup>65</sup> This part is dedicated to 'air pollution by fumes emitted by vehicles' but must also be seen in the context of the Road Traffic Act,<sup>66</sup> which contains provisions regarding vehicular emissions.

Vehicle emissions from transport trucks using diesel fuel and domestic vehicles contribute significantly to air pollution. People are increasingly relying on private vehicles for ownership and use and this exacerbates the problem. Local authorities with varying degrees of success have controlled diesel vehicle emissions, but certain technical difficulties in testing remain. Petrol vehicle emissions on the other hand have not been controlled to date but the extent and nature of emissions have been monitored regularly.

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<sup>63</sup> Section 28(1)(a).

<sup>64</sup> Fuggle & Rabie, (note 5 above) at 446.

<sup>65</sup> Section 36(1).

<sup>66</sup> 29 of 1989.

The introduction of lead-free petrol in 1996 enables considerations of further control strategies.<sup>67</sup> The objectives of the department are to minimize visible smoke from vehicles; gradually removing lead from petrol; limiting hydrocarbon emissions; and employing advanced technology to limit noxious emissions and implementing an efficient monitoring network.<sup>68</sup>

If after consideration of a report, the Minister is of the opinion that the local authority has not exercised its powers satisfactorily, he may, after consultation with the Minister of Finance and the local authority concerned, direct that the powers be exercised by the chief officer.<sup>69</sup> In terms of section 39(1)(a), the Minister may make regulations prohibiting the use of any vehicle on a public road in the area of a local authority listed in the notice, which emits noxious and offensive gases, which are of a darker colour or greater density than an amount specified in the regulations.

A local authority may empower an official to stop the driver of any vehicle on a public road situated in a listed local authority and carry out an examination of the vehicle. Alternatively, he may serve a notice on the registered owner of the vehicle to make it available for the required examination. If, after examination of the vehicle, the official is satisfied that the vehicle is emitting noxious or offensive gases contrary to the regulations, he shall notify the owner of the vehicle to take the necessary steps to prevent the emission and to make the vehicle available for re-examinations.<sup>70</sup> In terms of section 37 of the Act, failure to comply with the regulations is a criminal offence.

#### **E. Road Traffic Act<sup>71</sup>**

For the control of petrol emissions, reliance is also placed on this Act. In terms of this Act, it is an offence for any person driving a vehicle on a public road to cause or allow the engine thereof to run in such a manner that it emits smoke or fumes which would not be

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<sup>67</sup> Discussion Document on Pollution Control and Waste Management at 15.

<sup>68</sup> Fuggle & Rabie, (note 5 above) at 448.

<sup>69</sup> Section 36(4).

<sup>70</sup> Section 40(1).

<sup>71</sup> 29 of 1989.

emitted if the engine were in good condition or ran in an efficient manner.<sup>72</sup> The Minister may issue regulations regarding the emission of exhaust gas, smoke, fuel, oil, visible vapours, sparks, ash or grit from any vehicle operating on a public road. Until now, no such regulations have been passed and no scientific tests have been developed for petrol driven vehicles.<sup>73</sup>

Apart from the Atmospheric Pollution Prevention Act and the Road Traffic Act, there are several provincial Ordinances, in particular local government Ordinances, such as the Local Government Ordinance, 17 of 1939 (Gauteng) and the Local Government Ordinance 25 of 1974 (Natal), which prohibit the generation of air pollution in the form of burning, offensive or unpleasant smells and empower a municipality to promulgate by-laws concerning air pollution prevention.<sup>74</sup>

### **1.3. International Instruments Regulating Air Pollution**

South Africa is party to over 50 international conventions, which are either directly or indirectly relevant to the environment. There are several conventions that relate directly to atmospheric pollution and climate change. These include:

#### *(i) The 1985 Vienna Convention for the Protection of the Ozone Layer*

This Convention was initiated by United Nations Environmental Protection (UNEP) in response to scientific evidence that ozone depletion was a serious enough problem to warrant international regulation.<sup>75</sup> It is a framework convention, meaning that it spells out obligations in general terms leaving it for later negotiations to detail more precise obligations. Under this Convention countries agree in general terms to reduce their respective outputs of ozone-depleting substances into the atmosphere. South Africa ratified the Convention in January 1995.

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<sup>72</sup> Section 101(1)(k).

<sup>73</sup> Fuggle & Rabie, (note 5 above) at 449.

<sup>74</sup> Discussion Document on Integrated Pollution Control and Waste Management at 24.

<sup>75</sup> *International Conventions and Agreements on Environmental Issues* (1999), [http://www.environment.gov.za/int\\_conventions99.htm](http://www.environment.gov.za/int_conventions99.htm).



(ii) *The 1989 Montreal Protocol on Substances that Deplete the Ozone Layer*

This Convention arose out of the need for specific control measures than suggested in the Vienna Convention. South Africa adopted the Convention in 1990 as a developed country and has phased out all the agreed ozone-depleting substances since then. It is believed that if this Protocol did not exist and the world consumption of ozone depleting substances kept on growing, we would in due course have reached the point when the ozone layer was depleted to such an extent over non-tropical areas of the world that life as we now know it would not be possible.<sup>76</sup> If all countries co-operate by complying with the requirements of the Protocol, the already damaged ozone layer will be repaired and the problems relating to it would have been averted.

(iii) *The 1992 United Nations Framework Convention on Climate Change (the FCCC)*

The FCCC, like the Vienna Convention, is a framework convention, under which important details were negotiated at the third Conference of the Parties at Kyoto, Japan in December 1997. The Convention acknowledges that human activities have been substantially increasing the atmospheric concentrations of greenhouse gases, that these increases enhance the natural greenhouse effect, and that this will result on average in an additional warming of the earth's surface and atmosphere and may adversely affect natural ecosystem and mankind.<sup>77</sup> Accordingly, the ultimate objective of the Convention is to stabilize greenhouse gas concentration in the atmosphere at a level that would prevent dangerous interference with the climate system of the world.<sup>78</sup>

There is foreign aid helping South Africa address issues of climate change, and this has been valuable. For example, the Global Environment Facility has been involved in enabling South Africa to report back to the United Nations on climate change. The Netherlands government and South Africa have signed an agreement on low-cost, energy efficient housing.

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<sup>76</sup> Ibid.

<sup>77</sup> Preamble to the Convention.

<sup>78</sup> Article 2.

(iv) *Proposed Convention on Persistent Organic Pollutants (POPs)*

This proposed Convention is still under negotiation (at the time of writing). It is meant to take international action to minimize risks associated with POP chemicals already identified and proven to pose a threat to the human health through their toxicity and persistence. It is to further identify additional POPs as candidates for future international action. For South Africa, this implies that various dangerous and highly toxic chemicals will be reduced and phased out in co-operation with the international community.

#### 1.4. Conclusion

The enforcement of legislation relating to air pollution is very difficult. There are certain significant deficiencies perceived in the current air pollution control and there are a number of factors which contribute to this problem. Firstly, air pollution is not considered adequately in planning the placement of industries and residential areas; control equipment is poorly maintained, and often non-operational. In addition, there is a lack of transparency in all aspects of emissions, ranging from the extent of emissions, through the width of implications of best practicable means, to control strategies.<sup>79</sup> Secondly, there is some fragmentation within the government due to too many departments involved in enforcing different issues of the Atmospheric Pollution Prevention Act. There must be a single body responsible for pollution control, as this will reduce fragmentation and duplication.

The Atmospheric Pollution Prevention Act does not in any way involve the public in decision-making where they are affected. The communities in the past were denied participation and access to effective education and training. This impacted particularly harshly on poor communities with few social rights and little access to legal procedures to protect their environment. In addressing environmental issues, the Reconstruction and Development Programme recognizes the need for the government departments to work together towards the provision of safe and healthy living environment and a participatory decision-making process around environmental issues which empowers communities to manage their environment.<sup>80</sup>

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<sup>79</sup> Discussion Document on Integrated Pollution and Waste Management at 15.

<sup>80</sup> *Ibid.*

The Act not only requires updating but also with all the deficiencies mentioned above, the entire fragmented spectrum of pollution control needs to be reviewed. It would be more desirable if there could be a new legislation which will replace the current atmospheric pollution legislation. A new Act could ensure strict compliance and restoration of air quality in South Africa. The Deputy Minister of the Department of Environmental Affairs and Tourism has initiated a legal review of all legislation pertaining to environmental management.<sup>81</sup>

Minimum standards, compliance monitoring, regulation and enforcement relating to environmental impacts of industries in South Africa are inadequate and uneven. Provision for rehabilitation and remediation of environmentally degraded areas need to be improved. Criminal sanction is too lenient and must be tightened.<sup>82</sup> The Act should also include training of environmental health professionals whose main duties and responsibilities are the identification, assessment management, communication and remediation of health risk resulting from environmental factors.<sup>83</sup>

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<sup>81</sup> Ibid.

<sup>82</sup> *Issues for Environmental Policy*, [http://www.polity.org.za/govdocs/green\\_papers/enviro2.htm](http://www.polity.org.za/govdocs/green_papers/enviro2.htm).

<sup>83</sup> Sexton & Perlin, *The Federal Environmental Health Workforce in the USA* (1990) at 80.

## CHAPTER

### 2

## IMPACT OF AIR POLLUTION ON PUBLIC HEALTH

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### 2.1. Introduction

The history of South Africa has shaped the nature of government and the environmental policies it has pursued. Apartheid policies have impacted negatively on the environment. Some of the sources of environmental hazards and degradation that affect people today can be traced back to those policies. Issues such as the influx control legislation, the Group Areas Act, and education and labour policies, have engineered the differentiation by race, of exposure to environmental hazards in South Africa.<sup>1</sup> For example, the location of black people in townships and informal housing settings predisposed this group to a wide range of environmental health threats, such as ambient and indoor air pollution, noise, overcrowding, and insufficient supplies of safe water.

Environmental disasters, such as industrial pollution have degrading effects on people and the environment. Those affected by the environmental injustices of the past are the poorest and the most vulnerable sectors of our society. The highest levels of air pollution at ground level are found in black townships. These communities bear the greatest impact from industrial pollution because many of them live near the industrial areas. Those in sectors such as mining, mineral refining, chemicals and nuclear energy are especially vulnerable due to potential exposure in the workplace. Chemical production plants are located in poor and marginalized communities and these communities seldom have the capacity to attain research, scientific, technical, legal or lobbying services to remove these environmental threats from their residential areas.

South Africans generally suffer from air pollution caused by particulates, sulphur dioxide, nitrogen oxide, volatile hydrocarbons, carbon monoxide and dioxides, as well as obnoxious odours. Sources of these gases include pollution from mines, agriculture, domestic waste, industries, non electrified areas, vehicle emissions, crop- spraying, smokers, low grade coal, domestic cooking, the burning

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<sup>1</sup> Mathee, Swanepoel & Swart. *Environmental Health Services*, <http://www.hst.org.za/sahr/09/chap20.htm>.

of garden refuse, burning of sugar cane, veld fires and veld burning, dust from roads and uncontrolled industrial emissions.<sup>2</sup>

In South Africa there are at least three air pollution hotspots namely, Merebank south of Durban, Cape Town and the Vaal. Cape Town experiences seasonal episodes of brown haze during the autumn and winter months from April to August. There have been concerns that the brown haze may be intensifying. The primary emissions in the greater Cape Town area range from nitrous oxides, sulphur dioxides, hydrocarbon particulates and the pollution sources are primarily from petrol, diesel, coal and oil combustion.<sup>3</sup> The Vaal triangle on the other hand, is known as the industrial heart of South Africa. It is one of the most diverse areas for industrial processes in the country. This region is notorious for its atmospheric stability during winter resulting in poor dispersion and dilution of air pollution. Apart from major industrial activities ranging from chemical, petrochemical processes, power generation (coal-fired power stations) and metallurgical processes, there are approximately 700 000 people using coal as a primary domestic energy source.<sup>4</sup> Soweto, the largest black township in South Africa, is subjected to a severe pollution crisis as a result of domestic coal burning.

For the purposes of this study, attention will be focused on the Merebank area, the types of gases emitted in the air and the effect they have on human health and the environment.

## 2.2. Case Study (Merebank)

Merebank is a suburb located 16 kilometres south of Durban. This suburb is surrounded by the airport and a complex range of chemical processing industries in close proximity to the community. Around this area, there is Sapref refinery, which is the largest, and is a profitable joint venture of the huge Shell and BP corporations. On the other side, there is Mondi Paper Mill, which is one of the largest single-site paper mills in the world. It is known for having a notorious history of dumping toxic waste upon local South Durban residents. Recently, residents were victorious in

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<sup>2</sup> Discussion Document on Integrated Pollution and Waste Management at 13.

<sup>3</sup> Ibid at 14.

<sup>4</sup> Ibid.

closing the toxic ash dump, which is currently being rehabilitated.<sup>5</sup> Another refinery around the Merebank area is the Engen refinery, which is known for polluting the air with noxious crude oil smell. These industries are responsible for the pollution of air in Merebank and around other parts of South Durban. The airport and heavy-duty traffic contribute to the deafening noise in this area. The main pollutants in this area are particulates, sulphur dioxide, chromium vapours and toxic chromium, toxic waste dumps, heavy traffic flow, obnoxious odours and noise.<sup>6</sup>

Because of the wide range of industries around Merebank, it has not been easy to determine exactly what each industry has been emitting all this time. For years, the community has been lobbying to get the industries to reveal what they were emitting without much success. As a result of the lack of such information, the community had no idea of the dangers that they faced from local industries. In the past ten years there were surveys conducted which revealed a high incidence of chest-related ailments that can be attributed to the high levels of sulphur dioxide and other chemical contaminants in the atmosphere.<sup>7</sup> The study was conducted among Merebank children and it showed that they were ten times more likely to develop respiratory problems than children outside the area.

Recently there were outcries by the Merebank community about the rate of leukemia (blood cancer) among young children. The *Mercury Newspaper* responded to the complaints by conducting its own research into the allegations. There were at least 11 recent cases of cancer in young children in Merebank alone. These cases were then compared to the National cancer statistics over the past 10 years, and it was calculated that the rate of leukemia among the Merebank children under the age of 10 was at least 24 times higher than the national average.

Due to the lack of information on what was causing this escalating rate of cancer among the Merebank children, the communities who live adjacent to refineries were given the power to

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<sup>5</sup> Ground Work Quarterly Newsletter Vol.1, No.1, December 1999.

<sup>6</sup> *Call for action over pollution*, The Mercury, September 12, 2000.

<sup>7</sup> Discussion Document on Integrated Pollution Control and Waste Management at 14.

monitor their own environment using the sampling 'buckets' developed by community groups in the United States of America. This was done for the first time in South Africa where all the communities who live adjacent to the refineries were given the opportunity to really discover for themselves what it is they were breathing all these years, and also to see if there is any link between the air they breathe and the cancer.<sup>8</sup>

The communities were trained to sample the air and have it tested for certain pollutants. The training is based on a simple 25 litre- bucket with a seal and a small vacuum pump that creates a vacuum in the bucket when turned on. A small valve is turned on for about 5 minutes to fill the vacuum with an air sample required. The air bag inside the bucket is then sent to a laboratory for testing.<sup>9</sup> This process will help the communities to challenge air emission data calculations provided by industries. This sampling of air was a result of the fear the community had that industries were not reporting correct levels of pollution. Their fear was confirmed when the Shell and BP refinery (Sapref) admitted that it had over the past four years, been under-reporting the sulphur dioxide levels at the oil refinery by as much as 12 tons a day. Sapref had in fact been emitting 41 tons as opposed to the 29 tons per day of sulphur dioxide that they had been reporting. Sapref has since invited Shell Global Solutions from Europe to assist them in locating and quantifying sources of emissions.

Some of the results, which were recorded from the bucket brigade, were alarming. A variety of chemicals were found in the samples taken from Engen and other refineries. This includes benzene, toluene, carbon disulfide, sulphur dioxide to mention but a few. The levels of benzene found in Durban were 29 parts per billion, and this has been said to be the highest benzene concentration ever detected in a bucket air sample around a petroleum refinery.

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<sup>8</sup> *The Bucket Brigade Coming to South Africa*, Ground Work Quarterly Newsletter Vol. 2, No.1, April 2000 at 3.

<sup>9</sup> *Ibid.*

### 2.3. The effects of toxic gases on health

**Benzene** is associated with leukemia and anemia. Inhalation thereof can cause drowsiness, dizziness, and unconsciousness. It can cause excessive bleeding and can affect the immune system.

**Toluene** is known to be one of the most dangerous chemicals. It affects the human brain and can cause permanent brain damage, vision and hearing problems, tiredness and confusion, loss of muscle control and poor balance. It can also attack kidneys. Chronic inhalation exposure causes irritation of the upper respiratory tract, eyes, sore throat, nausea, skin conditions, dizziness and headaches. It can also cause unconsciousness, and even death. **Carbon dioxide** is the most common and widespread of air pollutants. Exposure to carbon dioxide may impair mental functions, reduce tolerance for exercise and aggravate cardiovascular disease. Exposure at high levels may lead to secondary effects such as decrease in blood PH and changes in fibrinolysis.

**Nitrogen oxide** is a strong oxidant and is also an acid anhydride. Nitrogen dioxide may aggravate respiratory symptoms and illnesses such as asthma. It may cause increased susceptibility to respiratory infections, and may affect pulmonary function. **Sulphur dioxide** and particulate matter on the other hand may aggravate respiratory diseases, including asthma and chronic bronchitis, and may affect lung function.<sup>10</sup>

One school that bears the evidence of these effects is the Settlers Primary School. This school is sandwiched between the Engen refinery (about 750 metres to the north) and Sapref refinery (about one and half kilometers to the south). Between the school and the Sapref refinery is the huge Mondi Paper Mill. About 750 metres to the west of the school are the southern sewage works. The pupils and the educators in this school are traumatized by a host of toxic pollutants on a daily basis. Pupils have experienced dizziness, severe headaches, nausea, chest congestion, stomach cramps, asthma

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<sup>10</sup> *The Bucket Brigade Opens Pandora's Box*, Ground Work Quarterly Newsletter Vol.2, No.3, September 2000 at 14.



attacks, red eyes, sore throats, itchy skin, vomiting, and there have been reports of some pupils collapsing almost every day. It has been reported that the toxic gases do not only affect the health of the pupils and educators in this school, but also impedes on the culture of learning and teaching. It is evident from these effects that the cancer among the Merebank children is directly linked to the chemicals mentioned above. The school has made an appeal to the polluters, the relevant health authorities as well as concerned environmentalists to take actions to ensure that such problems are prevented.

After several reports by the *Mercury Newspaper*, the Minister of Environmental Affairs and Tourism demanded drastic reductions in industrial poison gas and also announced an eight-point strategy to curb air pollution. He accepted the need to conduct a comprehensive study, which compared the human health problems in the area with other, less polluted, neighbourhoods.<sup>11</sup> The Minister also found it imperative to rehabilitate the polluted atmosphere and to make it possible for people to continue to live there and enjoy their fundamental human right to an environment which did not harm their health, which is envisaged in the Constitution.

In terms of the *Mercury Newspaper* article, the Minister proposed several measures, which would help create a healthy living environment in South Durban. These include:

- Revising pollution standards for sulphur dioxide and other poisonous gases to bring them into line with World Health Organization (WHO) standards;
- To protect community health through “drastic reductions” in ground-level industrial pollution and to place “onerous” new restrictions on industry;
- Improving air pollution monitoring systems and reducing the government’s reliance on information supplied by polluters.
- Conducting a health risk assessment based on a survey of chemical pollutants;
- Conducting an epidemiological study which examines the health impacts on people in South Durban and comparing the information with other city areas;
- Improving levels of enforcement and legal sanctions either through steeper fines, jail terms or the closure of companies causing pollution;

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<sup>11</sup> *Moosa demands reduction of Durban Pollution*, the Mercury September 19, 2000.

- A possible ban on burning certain “dirty fuels” by industries;
- New regulations to restrict coal burning for industrial purposes in South Durban.

#### **2.4. Conclusion**

The implementation of the above measures can bring about the change that the communities affected by air pollution in Merebank and around the country have been fighting for all these years. Although the desire of the affected communities is for the closure of these industries, such a step would have serious economic implications for the country and the communities as most of them rely on the industries for their survival. Implementing the measures identified by the Minister will ensure that there is a balance between the activities of the industries and the protection of the public health of the affected communities in South Africa.

## CHAPTER

### 3

## CODES, POLICIES, PRACTICES AND STANDARDS RELATING TO AIR POLLUTION

### 3.1. Introduction

This chapter focuses on the codes, practices, policies and standards relating to air pollution. Attention will also be given to certain environmental programmes established by industries around Merebank for ensuring the protection of public health and environment.

Generally, before any activity is carried out, it is required that an environmental assessment be conducted. The assessment helps in facilitating sound decision-making.<sup>1</sup> At this stage different environmental factors are taken into consideration such as the likely negative impacts on both the environment and human health. Environmental assessments also help in establishing plans for the prevention of potentially significant negative impacts to the environment.<sup>2</sup> Environmental assessments also help in finding alternative ways of dealing with the proposed activity such as the location where the activity is to be carried out. If a proposed activity is likely to have a negative impact on the environment and human health, it could be an alternative to locate it in a different location, and this can be established through environmental assessments.

According to Sadler, as quoted in Glazewski, 'environmental assessment' is a systematic process of evaluating and documenting information on the potentials, capacities, and functions of natural systems and resources in order to facilitate sustainable development planning and decision-making in general, and to anticipate and manage the adverse effects and consequences of proposed undertakings in particular.<sup>3</sup>

After the assessment of a particular activity, the environmental effects of a project are then analysed. This process is referred to as the 'Environmental Impact Analysis' (EIA). According to Fuggle and Rabie, EIA is 'a process contained in impact assessment by which the environmental effects of a project are analysed'.<sup>4</sup> The findings of an environmental impact analysis are contained in an 'environmental impact report'. The Environment Conservation Act (ECA)<sup>5</sup> refers to this as

<sup>1</sup> Glazewski, *Environmental Law in South Africa (2000)* at 269.

<sup>2</sup> Ibid.

<sup>3</sup> Glazewski, (note 1 above) at 271.

<sup>4</sup> Fuggle and Rabie, *Environmental Management in South Africa (1992)* at 764.

<sup>5</sup> 73 of 1986.

reports concerning the impact of proposed activities on the environment.<sup>6</sup> An environmental impact report is defined as 'a report describing the process of examining the environmental effects of a development proposal, the expected impacts and the proposed mitigating measures'.<sup>7</sup>

Another term, which is used often, is 'Environmental Impact Assessment' (EIA). This term is defined as 'the administrative or regulatory process by which the environmental impact of a project is determined'.<sup>8</sup> The EIAs were first promulgated in the government gazette in terms of the ECA in 1997. The Minister of Environmental Affairs and Tourism listed certain activities which would be subject to EIA. This was done in line with the country's responsibilities in respect of a number of international treaties and conventions that it is part of.<sup>9</sup> Although EIAs have been around for several years, they were never made compulsory in terms of the ECA and there have never been specific requirements or regulations in this regard.

Subsequent to this promulgation, the EIA Regulations became enforceable in 1998. The regulations concern the implementation of Sections 21, 22 and 26 of the ECA. Section 21 deals with the identification of activities which will probably have detrimental effect on the environment.<sup>10</sup> Section 22 focuses on the prohibition on undertaking of such identified activities, whilst section 26 deals with regulations regarding environmental impact reports. The objectives of these sections are:

- to ensure that the environmental effects of activities are taken into consideration before decisions in this regard are taken;
- to promote sustainable development, thereby achieving and maintaining an environment which is not harmful to people's health or well-being;
- to ensure that identified activities which are undertaken do not have substantial detrimental effects on the environment;
- to prohibit those activities that will;
- to ensure public involvement in the undertaking of identified activities; and

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<sup>6</sup> Section 22(2).

<sup>7</sup> EIA Regulations, Draft Guideline, Department of Environmental Affairs and Tourism, 1997.

<sup>8</sup> Fuggle and Rabie, (Note 4 above) at 764.

<sup>9</sup> *Environmental Impact Assessments Become Compulsory*. <http://www.polity.org.za/govdocs/pr/1997.html>.

<sup>10</sup> EIA Regulations, Guideline Document, *Implementation of Sections 21, 22 and 26 of the ECA*, April 1998, <http://www.environment.gov.za/docs/1998/eia.htm>.

- to regulate the process and reports required to enable the Minister or his designated competent authority to make informed decisions on activities.<sup>11</sup>

The regulations are aimed at providing the applicant, business and industry, NGOs, the public, labour organisations and the authorities on national, provincial or local government level with a uniform basis for implementing these sections. The regulations also aim at providing background information regarding the legislation controlling environmentally harmful acts; assisting applicants with the preparation, completion and submission of applications and required environmental reports; and assisting authorities in determining their roles and responsibilities as decision-makers.<sup>12</sup>

When a proposed project is authorised, the industry concerned must also establish an environmental management plan. This must contain *inter alia*, a description of policies, plans and programmes that may significantly affect the environment. The objectives of such plans must be to achieve, promote and protect the environment.<sup>13</sup> Environment can be protected through co-operation agreements and also compliance with emission standards.

### 3.2. Regulatory instruments

There is a wide range of management instruments, which can be used for integrated pollution. These regulatory instruments include command-and-control instruments, which draw on direct controls and permits, and also voluntary agreements.

#### A. **Command-and-control instruments**

They involve direct regulation and rely primarily on the application of regulatory instruments, such as standards, permits and land-use controls.<sup>14</sup> Standards define environmental targets and establish the permissible amount or concentration of particular substances discharged into air, water and on land. Standards may also include technological specifications for the performance or design of equipment and facilities and the standardisation of samples and analysis methods. Permits on the other hand, are tied to standards and are also subject to the fulfillment of specific conditions. They

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<sup>11</sup> Ibid.

<sup>12</sup> Ibid.

<sup>13</sup> Section 13 of NEMA.

<sup>14</sup> White Paper on Integrated Pollution and Waste Management for South Africa.  
<http://www.polity.org.za/govdocs/notices/2000/noi0227b.html>.



facilitate the enforcement of integrated pollution by including all pollution and waste management obligations in one authorisation. Permits can be withdrawn in cases of non-compliance, or changed as environmental or economic circumstances shift.<sup>15</sup> If a permit holder does not meet permit conditions, such a holder can be fined or prosecuted.

There are several types of standards, which are used to provide a reference for evaluation or a target for legislative action or control, and these include:

- *Ambient environmental quality standard*

This establishes the maximum concentration of specified pollutants allowed in the ambient air or water.

- *Effluent or emission standard*

This establishes the legal limit on the total quantity or concentration of a pollutant that can be discharged from a particular pollution source. This may include maximum effluent concentrations for a period of 24 hours, and may also include monitoring requirements and standards.

- *Technology-based standard*

This is a type of emission standard that specifies a technology that a firm must use to comply with environmental laws, for example, a power station may be required to add sulphur scrubbers to control its emissions.

- *Performance standard*

This is a type of emission standard that defines a performance measure and allows discharges the flexibility to select the best means to meet this measure, for example, car manufacturers may be required to produce cars that limit exhaust emissions to specified levels.

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<sup>15</sup> Ibid.

- *Product standard*

It establishes a legal limit on the total quantity or concentration of pollutants that can be emitted into the environment per unit of output, for example, an amount of chlorine per kilogram of paper pulp produced. This standard can also prohibit the addition of certain substances to products; for example, the addition of lead can be prohibited in paint to protect children from lead exposure.

In the context of air pollution, universal standards are referred to as 'ambient air quality standards' and standards set at source are referred to as 'emission standards'. An ambient standard is a goal for the surrounding air and is expressed in concentration units, for example 80 micrograms of sulphur dioxide per cubic meter of air over a period of time.<sup>16</sup> The position in South Africa is that the government has drafted an air quality standard (i.e. for ambient air) and this is still under discussion at the moment. This standard will ensure that industries improve their performance as far as pollution emission is concerned.

A number of specific standards have been adopted in South African environmental legislation including Best Practical Environmental Option, Best Available Technology Not Entailing Excessive Cost, 'reasonably practical', fitness for purpose, prescribed performance standards, and nuisance. Those standards applicable to atmospheric pollution include the following:

- *Best Practicable Means*

In respect of the control of noxious or offensive gases, the Atmospheric Pollution Prevention Act<sup>17</sup> precludes any person from carrying on a process listed in Schedule 2 of the Act without a registration certificate, which may either be final or provisional. In issuing a registration certificate, the Chief Officer must satisfy himself or herself that the best practical means are being used to prevent or minimize the escape into the atmosphere of noxious or offensive gases. If satisfied, he/she will then issue the certificate. The Best Practical Means test takes no account of the environment or alternative technology but simply considers what is practical in the given circumstances.

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<sup>16</sup> Glazevski. (Note 1 above) at 731.

<sup>17</sup> 45 of 1965.

- *Performance Standards*

Performance Standards are found in some aspects of water law, atmospheric pollution control and occupational health and safety law. For example, there are general standards gazetted under the Water Act<sup>18</sup> and smoke emitted by fuel-burning appliances is controlled by performance standards, which are laid down by the Chief Officer in terms of section 14 of the Atmospheric Pollution Prevention Act.<sup>19</sup>

- *Nuisance*

This is the standard adopted for the control of pollution by dust. Pollution by dust is regulated by the declaration of an area to be a dust control area. Within that area a person who carries on an industrial process, which in the opinion of the Chief Officer causes, or is liable to cause, a nuisance must take steps prescribed for preventing the dust from being dispersed or causing a nuisance. The difficulty with this standard is that it is not an objective one but depends on the Chief Officer's subjective view of what amounts to a nuisance.

## **B. Voluntary agreements**

Voluntary agreements have been used in many developed countries as an important complimentary approach to pollution reduction. Voluntary agreements can be used to achieve performance in excess of compliance with minimum standards and can include setting pollution reduction targets and penalties for non-compliance.<sup>20</sup> These agreements however, do not necessarily replace direct government control. For example, voluntary pollution reduction programmes, such as the USA's 33/50 programme, have led to large reductions in toxic substance releases. This programme has been one of the USA Environmental Protection Agency's (EPA) most successful initiatives at reducing the emissions of toxic substances. It operates on an entirely voluntary basis with companies setting their own reduction targets in consultation with the EPA.<sup>21</sup> Companies that meet these targets receive beneficial publicity from the EPA. The programme does not replace any other pollution controls but has nevertheless encouraged significant reductions.

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<sup>18</sup> 56 of 1956.

<sup>19</sup> 45 of 1965.

<sup>20</sup> Discussion Document on Integrated Pollution and Waste Management at 8.

<sup>21</sup> *Ibid* at 55.



Voluntary agreements allow for the harnessing of private sector energy in pollution control and are used to facilitate the involvement of communities, labour, and environmental Non-Governmental Organisations in pollution reduction initiatives.<sup>22</sup> In South Africa such agreements are in a form of Environmental Management Co-operation Agreement (EMCA). This is defined as 'a co-regulatory instrument, whereby an interactive relationship between the regulator and the regulated is established to improve the environmental performance of the regulated beyond or in compliance with legal requirements'.<sup>23</sup> Co-regulatory instruments include a variety of policy approaches and initiatives.

The National Environmental Management Act (NEMA)<sup>24</sup> makes specific provision for a negotiated environmental agreement for the purpose of promoting compliance with the principles laid down in NEMA.<sup>25</sup> The principles aim to facilitate environmental management in South Africa, through the sustainable development that is defined by principles such as the precautionary principle, trusteeship, holistic planning, internalization of externalities, public participation in decision-making, integrated environmental management, environmental justice, conflict resolution, and others.<sup>26</sup>

The EMCA also deals with environmental policy-making involving voluntary approaches, which can either take the form of *self-regulation* or *co-regulation*. In terms of the self-regulatory approach, business brings about the necessary improvements to *inter alia*, reclaim the agenda setting of their business from other stakeholders, secure its acceptance in the market place and to develop a competitive advantage. The regulatory approach on the other hand, is an interactive relationship between the regulator and the regulated. Normally, the regulator will prescribe the environmental objectives, while the regulated industry will choose the methods in achieving the objectives.<sup>27</sup>

South Africa's first environmental management co-operation agreement was launched between South Durban Community Environmental Alliance (SADCEA) and Engen refinery. In terms of this agreement Engen undertook to improve on the standards laid down by law for the protection of the environment. The agreement sets out measurable targets for fulfilling this undertaking including

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<sup>22</sup> Ibid.

<sup>23</sup> Environmental Management Co-operation Agreements, A Guide to their Design and Use, June 2000 at 10.

<sup>24</sup> 107 of 1998.

<sup>25</sup> Section 35

<sup>26</sup> Section 2.

<sup>27</sup> White Paper on Integrated Pollution Control and Waste Management for South Africa (Note 14 above).

dates for achievement of targets.<sup>28</sup> It also includes periodic monitoring and reporting on performance against targets. This agreement did not come easy. It took four years of international and national community campaigning before Engen agreed to reduce their pollution. Engen established an Environmental Improvement Programme as part of the agreement. The programme addresses the following major points:

- *Sulphur Dioxide (SO<sub>2</sub>) Emission Reduction*

This will entail the reduction of 65% from the current permit level for the entire site of 72 tons per day to 25 tons per day within 5 years.

- *Particulate Emission Reduction*

A new plant is to be installed which will result in a reduction of more than 70% in particulate emissions from the Catalytic Cracking unit within 5 years. In addition the reduction in heavy fuel oil firing of more than 80% necessary for SO<sub>2</sub> reduction reasons will result in major reduction in particulate emissions from combustion sources. A programme to reduce flaring incidents and to improve flaring conditions will reduce black smoke and particulate emission from this site.

- *VOC's/Hydrocarbons/Fugitive Emissions Reduction*

Various projects and studies are to be completed which will result in major reductions in emissions of this type. In addition, systems will be put in place to ensure that any incidents that occur that result in significant abnormal releases of hydrocarbon or odorous material from relief valve discharge or any other source will be thoroughly investigated and corrective action will be taken as appropriate.

- *Nitrogen Oxides (NOX) Emission Reduction*

The programme of installing "Staged Air" low NOX burners in the remaining fired heaters and boilers not yet filled with these burners is to be completed within five years.

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<sup>28</sup> *Environmental Improvement Programme*, Revision 5, 13 August 1998.

- *Flare Issues Improvement*

Various projects and studies are underway which result in reductions in noise and emissions from the refinery flares. With regard to noise, further studies are to be performed to see what additional noise control methods can be implemented to achieve even better performance.

- *Community Awareness and Emergency Response (CAER)*

Special emphasis is to be focused on performing risk analyses, including those required under the newly enacted Major Hazard Installations Regulations, which are acceptable to the public and in developing ways of communicating risk information with the public. This risk analysis programme will not only focus on the refinery plant itself but also on movement of product and chemicals to and from the site.

- *Measurement and Reporting of Emissions*

A detailed programme is proposed to improve measurement and calculation of the emissions from the refinery complex. Annual report will be produced detailing emissions and the progress of this programme's periodic audits of the emission measurements and calculations procedures will be conducted.<sup>29</sup>

### **C. Self-regulation**

Apart from voluntary agreements and command-and-control instruments, there is another system of regulation, which is self-regulation. This is self-discipline imposed by industries without direct intervention by the state/regulator. This involves industry voluntarily choosing both the environmental target and the provisions of accomplishing compliance. Examples of self-regulatory instruments are the International Organisation of Standardisation (ISO) 14000 series of standards and the chemical industry's Responsible Care Programme.<sup>30</sup> The ISO 14000 series of standards is a family of standards covering a wide range of aspects relating to corporate environmental management.

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<sup>29</sup> *Ibid.*

<sup>30</sup> *Environmental Management Co-operation Agreements, A Guide for their Design and Use*, June 2000 at 7.

<sup>31</sup> *Responsible Care and the Environment*, <http://www.sasol.co.za/care/content.asp>.

Locally such initiatives as the Responsible Care Programme of the chemical industry provide examples of voluntary programmes that encourage pollution reduction, open access to information, and the involvement of local environmental management. Sasol is one of the industries that signed a pledge to implement the Responsible Care Programme in 1994.<sup>31</sup> The focus of the performance improvement programmes is in areas of safety and health of people, pollution prevention and waste management, transportation, storage and distribution, community awareness and emergency response and overall product stewardship. Corrective actions to prevent pollution and waste minimisation at the factories are facilitated through management guidelines known as Transcare, which ensure that the transportation of chemicals and hazardous materials also considers the concerns of communities through which the products are transported.<sup>32</sup>

The Environmental Management System (EMS), such as the ISO 14001 series, is also an important aspect of improving environmental performance of industry.<sup>33</sup> Some of the industries that have adopted this series of standards include *inter alia*, Sasol, Mondi and Sapref. For Sasol, all business divisions in the Sasol Group are obliged to implement and maintain the requirements of the ISO 14001 environmental management standard.

Mondi Paper Mill has established its own EMS and attained accreditation to the ISO 14001 environmental management system standard.<sup>34</sup> For Mondi, setting up the EMS involved evaluating every section of the mill and every process for its impact on environment and then developing a standard set of procedures to be followed. Once the significant impacts had been established, the steering committee, which was tasked with guiding the process of achieving ISO 14001 certification, had to develop procedures and work instructions to address these impacts. The technical requirements from the ISO standard were then incorporated and co-coordinated with the different section inputs to create the EMS.

Once all the requirements of the standard were addressed and the Mondi Paper EMS was in place, the SABS sent a team of auditors to evaluate the compliance of the EMS with the requirements of the ISO 14001, as well as the effectiveness of its implementation. Once the SABS was satisfied that Mondi's EMS complied with all the requirements of the standard their Approvals Board certified

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<sup>32</sup> Ibid.

<sup>33</sup> Discussion Document on Integrated Pollution Control and Waste Management at 55.

<sup>34</sup> *Clear Demonstration of Environmental Commitment*, Daily News, August 11, 2000 at 11.

Mondi to the ISO 14001.<sup>35</sup> The Mill also holds an ISO 900 quality management system certified by the Bureau Veritas Quality International and the South African Bureau of Standards.

Mondi's decision to comply with an international standard that requires continuous improvement in environment performance is a clear indication of its commitment to the area within which it operates (Merebank) as well as to the relevant authorities and communities. Mondi also has many inherent environmentally friendly or minimum impact aspects to the mill. For example, pulp production is achieved by the groundwood and thermo-mechanical methods that are essentially chemical-free, the mill is also a very significant recycler of waste paper and a quarter of the process water used is reclaimed sewage.<sup>36</sup> The recycling of waste paper is conducted through a sophisticated recycled fibre and deinking plant installed in 1991.

Sapref on the other hand recently admitted under-reporting of emission due to miscalculations. The refinery was under an obligation to provide a plan of how it was going to improve all aspects of its environment. As from the beginning of this year, 2001, the Sapref refinery adopted the ISO 14001 standard.<sup>37</sup> Its performance is measured against what it does and what it is going to do. In this case the scope of the ISO 14001 defines the areas, activities, products and services that are part of the refinery and are included for certification to ISO 14001.

Some of the issues covered under air pollution management include monitoring and measuring of environmental aspects, recording of smoke emissions, daily verification and recording of sulphur dioxide emissions, incident reporting and analysis, as well as audit procedure.<sup>38</sup> Other issues to be managed include the reduction of fire emission into the atmosphere, reduction of gas leak emission into the atmosphere, reduction of odour emission into the atmosphere and also the reduction of noise.

The permit that Sapref operates under does not allow the refinery to exceed 50 tons of sulphur dioxide per day. The refinery has a number of plans to improve its environmental performance. For example, this year the target is not to exceed 37 tons per day. This is done by using fuel gas instead of fuel oil as a source of energy. By the end of 2002 the refinery would have finished installing a plant that will enable it to reduce sulphur dioxide emissions to about 20 tons a day. Inside the refinery sulphur dioxide emissions are calculated from individual stacks on a continuous basis, and

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<sup>35</sup> Ibid.

<sup>36</sup> Ibid.

<sup>37</sup> Information Supplied by Nelson Mbatha, Environmental Technologist for Sapref Refinery.

<sup>38</sup> Ibid

any sharp increase in sulphur dioxide can be picked up and attended quickly by making some changes in the processes.<sup>39</sup> One of the plans for improving accuracy of sulphur dioxide emissions is the installation of sulphur dioxide monitors by the end of 2002.

### 3.3. Conclusion

The air quality standards in South Africa are deteriorating mostly due to an increase in industrialisation and urbanization. There is a need for a universal standard for acceptable universal levels of pollution. There are no overall standards of air cleanliness set and the degree of industrial air pollution tolerated will depend almost entirely upon the discretion of the chief officer.<sup>40</sup>

It is evident from the way the law addresses the problem of air pollution that some of the air pollution standards are inadequate to meet the demands and exigencies of modern day industrial society. There is a need for specific standards to control and monitor air pollution generally. These must be seen against the backdrop of the emerging environmental norms, in particular the precautionary principle, the essence of which says that lack of scientific certainty as to a reason for effects of a proposed action should not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Although there are guidelines for issuing permits to the industries, those guidelines are simply guidelines and therefore do not appear as legally enforceable conditions in the registration certificate as issued under the Atmospheric Pollution Prevention Act.<sup>41</sup> Such guidelines allow industries a leeway to virtually emit as they please. This is also evident from the case of Sapref refinery, which admitted under-reporting the levels of sulphur dioxide at their plant.

The lack of a comprehensive system of measuring and monitoring air quality in South Africa poses a serious problem in particular with access to information. The introduction of an air quality standard could be the solution to South African air pollution problem. The government must introduce improved, legally binding air emission standards in order to bring emission levels to levels that are acceptable internationally and levels that are not harmful to the environment and human health system for South Africa.

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<sup>39</sup> Ibid.

<sup>40</sup> Glazewski, *Environmental Law in South Africa* (2000) at 731.

<sup>41</sup> 45 of 1965.

There are no uniform standards regulating industrial activities to be complied with in South Africa. The Atmospheric Pollution Prevention Act gives too much power to the industries to regulate themselves, which gives them a leeway to emit as they please. It also makes it difficult for the industries to comply with the relevant legislation. The South African Bureau of Standards ISO series of standards are currently voluntary and should be made compulsory for the effective compliance and enforcement of legislation. Having an EMS in place in industries will greatly facilitate the effective and efficient implementation of environmental agreements and legislation nationally and internationally.<sup>42</sup>

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<sup>42</sup> Environmental Management Co-operation Agreements, Discussion Document, June 2000 at 10.

## CHAPTER

### 4

## CONCLUSION AND RECOMMENDATIONS

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### 4.1. Introduction

In this concluding chapter, an attempt will be made to address the lacunae in the existing legislative framework. Recommendations will then be made on how the law can be made more effective to promote health and protect the public against air pollution.

It is generally recognised that the quality of air we breathe is a fundamental element in the protection and promotion of human health. The entitlement of all South Africans to an environment that is not harmful to their health and well being under the new Constitution seems particularly pertinent in the context of air pollution. As mentioned earlier, the problem of air pollution has been around for a very long time, but the law has done very little to regulate activities carried on by industries which lead to such pollution. Instead of regulating such activities, the law has given the polluters the leeway to cause more pollution by giving them powers to regulate themselves. There is a lot that the government needs to do to ensure that the environmental right envisaged in the Constitution, is fully realised and that those who violate such right are punished.

The Department of Environmental Affairs and Tourism has weak legislative authority, exercising little executive power, and lacks an adequate complement of professional and technical staff to carry out its mandate. It is highly reliant on the cooperation of other departments and the private sector, whose mandates are not the stewardship of the environmental wealth of the country.<sup>1</sup> The South African government has the potential of putting in place the essential elements of an agency system without trying to convert the Department of Environmental Affairs and Tourism into such an agency.

In the longer term, a stronger agency bringing together some parts of the existing national government departments, especially those responsible for environmental monitoring, may be better able to play the

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<sup>1</sup> Van Ameringen, *Building a New South Africa*, Vol.4 at 28.



catalytic role necessary to move South Africa from environmental control toward pollution prevention based on the Precautionary Principle, which is fundamental to sustainable development. Below are some of the recommendations which could make the South African law more effective to promote and protect the public health against air pollution.

#### 4.2. Recommendations

- *Atmospheric pollution legislation reform*

With the increase in industrialisation and the serious effects air pollution has on human health and well-being, the current air pollution legislation, in particular the Atmospheric Pollution Prevention Act,<sup>2</sup> is not effective whatsoever. This Act is outdated and there is a need for a new Act. The new constitutional dispensation requires a number of readjustments particularly as regards the role of the nine provinces in regulating air pollution, and the current Act does not meet these adjustments.

A new framework air pollution Act is accordingly recommended which would firstly, put administration of air pollution laws in line with the new Constitution. Secondly, a new Act would more easily accommodate South Africa's obligations under international conventions, which it has entered into. For example, such Act could empower the Minister to pass regulations to give effect to the Framework Climate Change Convention by stipulating reductions in specific greenhouse gases within certain times.<sup>3</sup> A new Act could also re-examine the application of scientific standards, and provide that permits for scheduled processes should be subjected to periodic review from time to time. The criminal provision of the current Act is very weak and therefore needs to be tightened. The new Act should look at the Environment Conservation Act for reference as far as penalties are concerned.

In order to achieve this goal of passing a new Act, we need to have qualified persons who will ensure that this goal is realised. There is therefore a need for a group of competent individuals who will undertake a comprehensive review of atmospheric pollution legislation. Among their tasks, the group would review legislation in light of the new Constitution, particularly the fundamental right to an

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<sup>2</sup> 45 of 1965.

<sup>3</sup> Glazewski (note 1 above) at 735

environment that is not detrimental to one's health or well being, and the right of access to information required for the protection or exercise of one's rights. This important new approach to human rights and the environment is likely to lead to systemic changes in the legal provisions for access to information and legal standing of communities and groups, such as environmental NGO's and civil society in pursuing cases of infringement on environmental quality.<sup>4</sup> The Constitution makes provision for people to approach a competent court if a right in the Bill of Rights has been infringed or threatened.<sup>5</sup>

- *Environmental Protection Agency*

The enforcement of the environmental legislation is also difficult due to fragmentation within the government. There are too many departments involved in enforcing different issues of the environment. There is a great need for a neutral body, which will be impartial to all spheres of government and all organs of state, and to the general public. This would mean that the existing monitoring, enforcement, and extension sections of several government departments be consolidated into a new agency for environmental monitoring and extension.<sup>6</sup> The agency would report to the Minister of Environmental Affairs and Tourism.

The agency might include, *inter alia*, air pollution inspectors from the Department of Environmental Affairs and Tourism. In addition to having strong regulatory powers, the new agency should take the lead in developing a consensus - building process for environmental management and cleaner production that brings industry, labour, and civil society structures together to establish targets and plans for continuously improving the environmental performance of all sectors, including the government.<sup>7</sup>

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<sup>4</sup> Van Ameringen, (note 1 above) at 34.

<sup>5</sup> Ibid at 31.

<sup>6</sup> Ibid at 33.

<sup>7</sup> Section 38.

- *Community Participation*

Environmental legislation and enforcement have largely been put in place during a period when there was little or no public involvement. Key issues for public participation are now part of the public debate, including the right of the public and workers to know and the legal standing of people and organisations. In the old government black people in particular were not part of decision-making and policy-formulation processes. Public participation entails on-going communication between parties concerned to enable them to learn about and better understand the views and positions of the other.<sup>8</sup> Communities should also be educated about air pollution and become involved in monitoring, including being informed about the correct authorities to whom to report suspected problems.

- *Access to environmental information*

Section 32 of the Constitution provides that everyone has the right of access to any information held by the state; and any information that is held by another person and that is required for the exercise or protection of any rights. This may include the right to an environment that is not harmful to health or well being of everyone. Suitable information, and open access to this information, is one of the most powerful tools available to enhance civil society involvement in pollution control. The types of information that should be available will include:

- (a) the amount and types of pollution generated and released into the atmosphere by point source polluters at the state level. This should include industrial site specific data;
- (b) estimates of the total release of non-point source pollutants of concern, such as from motor vehicles, residential coal fires; and
- (c) the levels of pollutants concerned in the ambient environment.<sup>9</sup>

The data must be transformed into usable information by being made readily understandable to those without technical backgrounds. It should also be easily accessible to those without sophisticated information technology. The collection of information on clean technology, best available technologies

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<sup>8</sup> Ibid at 26.

<sup>9</sup> Discussion Document on Integrated Pollution Control and Waste Management in South Africa at 58.

for pollution control and other information that can assist in pollution reduction should be undertaken. Such information should be made accessible to interested parties.

- *Labour*

Pollution affects workers, communities and the physical environment alike, although in different ways and to differing degrees. Workers have been fighting workplace pollution long before environmental pollution became the public issue it is today. This is mainly because workers tend to be at the front-line of pollution problems, and the first to be exposed to hazardous production processes.<sup>10</sup> For example, the workers at the Cape Asbestos Company (now Cape PLC) have been exposed to asbestos for years. Both the workers and the community had no idea that asbestos could kill. These people are now suffering from asbestosis related diseases. Many have died through the years from asbestosis. Others died from mesothelioma (a type of cancer caused by exposure to asbestos).<sup>11</sup> At present a lack of job security and information inhibits workers from playing a major role in protecting the environment.

For these reasons the workers need to be integrally involved in the solutions to pollution control problems. In particular labour must be able to participate in plant level environmental management and environment audits when these are required. It must have the right to divulge information to the public, media or government which concerns illegal pollution on the part of an employer (so-called whistle-blower protection). This right should be specifically protected by law. Workers should refuse to pollute in the case of illegal or deliberate pollution, as an extension of the legal right to refuse dangerous work.<sup>12</sup> Workers must also have the right to full knowledge about the nature and extent of pollution of their place of work and be involved in national, and international, processes setting broad pollution control policy, specially where this may have an effect on the economy and on employment.

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<sup>10</sup> Ibid at 4.

<sup>11</sup> Tara Turkington, *Where breathing can kill you*, Truelove Magazine, August 2000 at 84-87.

<sup>12</sup> Discussion Document on Integrated Pollution Control and Waste Management in South Africa at 5.

- *Environmental Ombudsman*

This functionary will act as an advocate for the environment, with the authority to carry out investigations into alleged infringements of the environmental rights of South African citizens, including those involving government bodies and departments. The office should be independent of other government departments, highly responsive, and visible. It should be able to call on the technical resources of government departments and bodies such as the Council of Scientific and Industrial Research (CSIR). It should report to the President and, through that office, annually to parliament so that it can table public reports on its activities and major findings.

- *National Integrated Pollution Control Body*

This body will be responsible for environmental protection through integrated pollution control. Its initial responsibility would therefore be to facilitate interdepartmental integration in spheres of pollution through the establishment of the necessary structures, procedures and legislation.<sup>13</sup> The body could be responsible for ensuring that all South Africa's international obligations with respect to pollution control are met. This body could also serve as one of the receiving points for complaints or queries from members of civil society regarding pollution issues. It would therefore be responsible for managing incoming complaints or queries, initiating appropriate action and reporting the results of the action to the complainant and any other party with a need to know the results. Other responsibilities could include the following:

- (i) Establishment of procedures

This may include the establishment of methods of ensuring environmental protection and pollution control at national level; the establishment of procedures for the setting of national, regional and local standards; the establishment of methods and routes of permit and/or authorization application at all three levels of government; and the establishment of procedures of permit and/or authorization application, evaluation and approval at all three spheres of government.<sup>14</sup>

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<sup>13</sup> Ibid at 39.

<sup>14</sup> Ibid at 43.

(ii) Technical

Certain functions may need to be performed by this body in addition to policy setting and co-ordination between national departments.<sup>15</sup> These could include ensuring the formulation of national environmental standards; evaluation and approval of permits and/or authorization of applications which have national significance. Other functions could include the issuing of permits and/or authorization with specific conditions for those activities which have national significance; gathering, processing and dissemination of pollution data in the national interest; formulation of measures to identify pollution sources which cannot be controlled by permits or authorizations for example, air pollution in informal settlements and identify measures which can be used in these instances to control pollution.

(iii) Auditing and Review.

Here the body will ensure protection of environment from pollution at a national level; ensure that the established procedures are followed at provincial and local levels, and that these are reviewed and modified as required. The body will also check compliance with permit and/or authorization conditions for those activities which have national significance, and ensure that South Africa meets its obligations in terms of international pollution control agreements.

- *A strengthened Department of Environment*

Finally, there must be inter-departmental and inter-sectoral collaboration on matters relating to the environment. The Ministry of Environmental Affairs and Tourism should be consulted by other departments before any action is taken that will affect the environment and natural resources.<sup>16</sup> This will strengthen and empower the Ministry of Environmental Affairs and Tourism. In essence, air pollution must be addressed immediately, which must include issues related to electrification, the reduction of industrial emissions, the introduction of efficient public transportation systems, adequate enforcement of legislation, the provision of adequate health services, and the surfacing of roads.

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<sup>15</sup> Ibid.

### 4.3. Conclusion

The impact of activities carried on by industries on human health and the environment are of such a serious nature that if not dealt with effectively, there will be more deaths and more diseases among those communities living closely to the industries. Although industries make a large contribution to the economy of South Africa, consideration of their disadvantages must also be taken into account. It is often a desire for many South Africans that the industries not complying with necessary requirements for carrying on activities should be closed down.

What could be done however, is to create strict standards and control measures, which every industry would adhere to. Closure of industries that do not comply with such standards should be the last remedy if all fail. If these recommendations are taken into consideration and also applied, South Africa will surely be many steps ahead as far as environmental conservation is concerned. Every person could begin to experience the true enjoyment of rights envisaged in the Constitution, and this would create a healthy population.

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<sup>16</sup> Ibid at 38.

## **BIBLIOGRAPHY**

### **BOOKS**

- Fuggle R.F, Rabie M.A, *Environmental Management in South Africa* (Cape Town: Juta & Co, Ltd 1992)
- Glazewski J, *Environmental Law in South Africa* (Durban: Butterworths 2000)
- Henderson P, *Environmental Law of South Africa Vol.1* (Cape Town: Juta & Co, Ltd 1995).
- Kidd M, *Environmental Law: A South African Guide* (Cape Town: Juta & Co, Ltd 1997).
- Van Ameringen M, *Building a New South Africa: Environment, Reconstruction and Development Vol.4* (Ottawa International Development Research Centre 1995).

### **REPORTS AND OTHER**

#### *OFFICIAL DOCUMENTS*

- Departments of Environmental Affairs and Tourism & Water Affairs and Forestry, *Discussion Document on Integrated Pollution and Waste Management for South Africa* 1999.
- Departments of Environmental Affairs and Tourism & Water Affairs and Forestry, *Draft White Paper on Integrated Pollution Control and Waste Management* 2000.
- Department of Environmental Affairs and Tourism, *Environmental Impact Assessment: Draft Guideline* 1997.
- Department of Environmental Affairs and Tourism, *Guideline Document on Environmental Impact Assessment: Implementation of sections 21, 22 and 26 of the Environment Conservation Act 73 of 1979* (April 1998).
- Department of Environmental Affairs and Tourism, *Discussion Document on Environmental Management Co-operation Agreements: A Guide for their Design and Use* (June 2000).
- Department of Environmental Affairs and Tourism, *International Conventions and Agreements on Environmental Issues* (December 1999).



## NEWSLETTERS AND MAGAZINES

- Groundwork Quarterly Newsletter Vol.1. No.1 (December 1999).
- Groundwork Quarterly Newsletter Vol.2. No.1 (April 2000).
- Groundwork Quarterly Newsletter Vol.2. No.3 (September 2000).
- Turkington T. *Where Breathing Can Kill You*, Truelove Magazine (August 2000).

## WEBSITES

- [www.engen.co.za](http://www.engen.co.za)
- [www.environment.gov.za](http://www.environment.gov.za)
- [www.hst.org.za](http://www.hst.org.za)
- [www.polity.org.za](http://www.polity.org.za)
- [www.sasol.co.za](http://www.sasol.co.za)

## TABLE OF CASES

- *Minister of Health v Drums and Pails Reconditioning CC t/a Village Drums and Pails* 1997 (3) SA 867 (N).
- *Minister of Health and Welfare v Woodcarb (Pty) Ltd and Another* 1996 (3) SA (N).

## TABLE OF STATUTES

### NATIONAL LEGISLATION

- Atmospheric Pollution Prevention Act 45 of 1965.
- Environment Conservation Act 73 of 1979.
- National Environmental Management Act 107 of 1998.
- National Water Act 36 of 1998.
- The Constitution of the Republic of South Africa Act 108 of 1996.
- The Interim Constitution of the Republic of South Africa Act 200 of 1993.

- The Road Traffic Act 29 of 1989.

#### *ORDINANCES/PROVINCIAL LAWS*

- Local Government Ordinance 17 of 1939 (Gauteng).
- Local Government Ordinance 25 of 1974 (Natal).

#### INTERNATIONAL CONVENTIONS

- The 1985 Vienna Convention for the Protection of the Ozone Layer.
- The 1989 Montreal Protocol on Substances that Deplete the Ozone Layer.
- The 1992 United Nations Framework Convention on Climate Change.
- The Proposed Convention on Persistent Organic Pollutants (POPs).