

IS SOUTH AFRICA SHIFTING TOWARDS INTEGRATED POLLUTION PREVENTION AND CONTROL?

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Summary

In this dissertation I argue that South Africa has moved towards Integrated Pollution Prevention and Control (IPPC) when considering the legislation relating to pollution regulation. However, I assert that the current pollution regulation regime does not fully appreciate the potential for pollutants to be transferred between environmental media of land, air and water, and consider the potential that greater integration could have to manage pollution more effectively, and strive for an environment that is not harmful to health and well-being.

In chapter 1, I discuss how pollution is regulated in South Africa in terms of the environmental right enshrined in the Constitution of the Republic of South Africa, 1996, and the plethora of legislation promulgated to give effect thereto. I explain how this legislation regulates pollution by means of command and control mechanisms including duties of care and various authorisations. Various spheres of government, and numerous departments, with different mandates and powers, administer the plethora of legislation, with the ultimate goal of protecting the environment. I align myself with those who argue that this approach is fragmented, and discuss some of the challenges that may arise as a result thereof.

In chapter 2, I consider the movement towards a more integrated approach to pollution control in order to address the fragmentation. I do so by discussing the concept of IPPC through an analysis of the Policy on Pollution Prevention, Waste Minimisation, Impact Management and Remediation, 2000 (the Policy) and how it claims to introduce IPPC through legislative reform and co-operative governance. Legislation regulating pollution enacted subsequent to the Policy appears to be contrary to the integrated approach envisaged by IPPC.

In chapter 3, I discuss the concept of co-operative governance as an integral part of pollution regulation. I argue that co-operative governance, due to the structure of government, is not the optimal strategy to achieve the integrated regulation of pollution. I also consider the one environmental system regarding mining matters, as a model approach to the integrated regulation of pollution in South Africa.

In chapter 4, I conclude by considering the future possibilities for integration in the regulation of pollution in South Africa, to minimise significant pollution and degradation of the environment, and prevent harm to the health and well-being of those affected the most by the effects of pollution.

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Declaration of Originality

I, **Donné Prinsloo**, student number 17386952, declare that:

1. I understand what plagiarism is and am aware of the University's policy in this regard.
2. I declare that this mini-dissertation is my own original work. Where other people's work has been used (either from a printed source, internet or any other source), this has been properly acknowledged and referenced in accordance with departmental requirements.
3. I have not used work previously produced by another student or any other person to hand in as my own.
4. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as his or her own work.

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Date: 15 November 2019

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Introduction

This dissertation explores the regulation of pollution, and asks whether such regulation adopts a sufficiently integrated approach. Pollution is understood broadly to include any change in the environment caused by any number of substances, which has an adverse effect on human health and natural ecosystems.¹ Pollutants can exist in different states and move between air, land and water having devastating effects on the environment, human health and well-being.² Pollution is also an inevitable consequence of social and economic development.³ For example, the mining of coal has significant adverse impacts upon the environment, and the use of coal for electricity generation is a prominent pollution concern in South Africa.⁴ In 2014 South Africa produced 260 million tons of coal, the majority of which, 110 million tons, was used by Eskom for electricity generation.⁵ The mining of coal releases methane, which is a greenhouse gas and a major contributor to climate change.⁶ A significant portion of the mined coal requires washing in order to achieve a particular standard for use, and this process results in millions of tons of waste that is disposed of on

¹S 1 of the National Environmental Management Act 107 of 1998 (hereafter NEMA) defines pollution as 'any change in the environment caused by-

(i) substances;

(ii) radioactive or other waves; or

(iii) noise, odours, dust or heat,

emitted from any activity, including the storage or treatment of waste or substances, construction and the provision of services, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future.' Further definitions will be discussed in chapter 2 below.

² M. Kidd 'Integrated Pollution Control in South Africa: How easy a task?' (1995) 1 *South African Journal of Environmental Law and Policy* 37 38.

³ C. Bosman 'Integrated Waste Management' H.A Strydom, N.D. King, R.F Fuggle & M.A Rabie (eds) *Environmental Management in South Africa* 2009 2nd ed 699 700.

⁴ Department of Environmental Affairs '2nd South Africa Environment Outlook: A report on the state of the environment' (2016) 14.

⁵Life After Coal Campaign 'Water impacts and externalities of coal power' July 2018 <https://lifeaftercoal.org.za/media/news/water-costs-impacts-of-coal-fired-power-grossly-underestimated-in-electricity-planning> (accessed 28 September 2019) (hereafter the Life After Coal Campaign Report).

⁶ P. Lloyd & A. Cook 'Methane release from South African coalmines' (2005) 105 *The Journal of the South African Institute of Mining and Metallurgy* 483 485. Climate change itself has significant global consequences including rising global temperatures, rising sea levels, flood, drought, associated food security risks etc. R. Mwebaza 'The impact of climate change in eastern Africa' in R Mwebaza & L Kotzé (eds) *Environmental Governance and climate change in Africa: Legal Perspectives* (2009) 3; Anonymous 'The effects of climate change' <https://climate.nasa.gov/effects/> (accessed 15 October 2019).

land in 'slimes dams'.⁷ The waste can in turn leach through the soil and contaminate groundwater.⁸ Abandoned and un-rehabilitated mines are the largest source of acid mine drainage in South Africa. Acid mine drainage results from the interaction between coal, other rock materials and oxygenated water, which pollutes water resources with toxic heavy metals.⁹ The toxic heavy metals can bio-accumulate in humans and animals through contaminated drinking water, ingesting contaminated plants, and through dermal absorption in air and water.¹⁰ Burning of coal at power stations releases fine particulate matter and gases containing harmful substances, including sulphur dioxide, nitrogen dioxide, and carbon dioxide.¹¹ The Mpumalanga province, home to the majority of South Africa's power stations, is said to have the 'highest levels of air pollution in the world, topping nitrogen dioxide levels across six continents'.¹² The emissions containing harmful substances are inhaled, resulting in health impacts ranging from shortness of breath and sinusitis, to bronchitis, pneumonia, cardiovascular diseases and ultimately premature deaths.¹³ Ash produced from the burning of coal contains toxic heavy metals that can produce toxic leachate when it comes into contact with any water.¹⁴ They can settle on and contaminate soil, plants and water which bio-accumulates when ingested by animals and humans.¹⁵ The significant impacts that the mining, and the use of coal for energy

⁷Life After Coal Campaign Report (note 5 above).

⁸Life After Coal Campaign Report (note 5 above).

⁹T.S. McCarthy 'The impact of acid mine drainage in South Africa' (2011) 107 (5/6) *South African Journal of Science*; Anonymous 'Effects of mining on the environment and human health' 22 August 2018 <https://www.environment.co.za/mining/effects-of-mining.html> (accessed 28 September 2019).

¹⁰Life After Coal Campaign Report (note 5 above); The Federation for a Sustainable Environment highlight that one of the main issues associated with mine residue deposits in South Africa is AMD and that an estimated 1.6-million people live in informal settlements next to mine residue deposits, the majority of which are radioactive; K. King 'AMD still poses a threat' 4 January 2019 <https://www.bizcommunity.com/Article/196/608/185893.html> (accessed 19 August 2019).

¹¹Life After Coal Campaign Report (note 5 above).

¹²L. McDaid: Groundwork 'The health impacts of coal: the responsibility that coal-fired power stations bear for ambient air quality associated health impacts' 20 May 2014; M. Kekani 'Mpumalanga tops world nitrogen dioxide air pollution charts' 30 October 2018 <https://mg.co.za/article/2018-10-30-mpumalanga-tops-wrorld-nitrogen-dioxide-air-pollution-charts> (accessed 19 November 2018).

¹³For more discussions on the health impacts from coal fired power stations see M. Matooane, J. John, R. Oosthuizen and M. Binedell 'Vulnerability of South African Communities to air pollution' paper presented at the 8th World Congress on Environmental Health 22 – 27 February 2004; Dr. M. Holland 'Health impacts of coal fired power plants in South Africa' 31 March 2017; Dr. H.A. Grey 'Air quality impacts and health effects due to large stationary source emissions in and around South Africa's Mpumalanga Highveld Priority Area (HPA)' 3 June 2019.

¹⁴Life After Coal Campaign Report (note 5 above).

¹⁵Life After Coal Campaign Report (note 5 above).

generation, has on air quality, water resources and human health, as pollutants moving from one environmental media to another, has come under heavy scrutiny.¹⁶

This dissertation will argue that given the tendency of pollution to move and spread amongst the environmental media of land, air and water, the effective regulation of pollution entails an integrated approach, both in terms of the legislation regulating pollution, and the relevant officials administering the legislation. It asks the question whether and to what extent South Africa is moving towards Integrated Pollution Prevention and Control (IPPC). IPPC has at its core an understanding that the environment, being the surroundings in which we exist,¹⁷ functions as a single, integrated and interdependent whole, and if the environment is to be utilised and protected effectively, such utilisation and protection must occur within a legal and administrative framework that acknowledges this integration and interdependence.¹⁸

IPPC entails adopting:

a national practice or system which takes into account the effects of activities and substances on the total environment, as well as the whole commercial and environmental life cycles of substances when assessing the risk they pose and when developing and implementing controls to limit their release.¹⁹

¹⁶Life After Coal Campaign Report (note 5 above); Centre for Environmental Rights 'Environmental groups take government to High Court over violation of Constitutional right to clean air' 10 June 2019 <https://cer.org.za/news/environmental-groups-take-government-to-high-court-over-violation-of-constitutional-right-to-clean-air?fbclid=IwAR2jS3Kt0rXDsh28J-Kwzs9-P2Wc3yOfDeI8QCo8JD0XEpttAM8hBeKHwRg> (accessed 15 October 2019); S. Kings 'How Eskom's coal kills' 20 June 2014 <https://mg.co.za/article/2014-06-19-power-stations-are-deadly-internal-report-reveals> (accessed 19 June 2019); L. Gernholtz 'For communities in South Africa, climate change is now' 17 September 2019 <https://mg.co.za/article/2019-09-17-00-for-communities-in-south-africa-climate-change-is-now/?fbclid=IwAR1J-2Z67RxZUXrKJ726fVaLtyMI6Ao3pk-RbUbxH7O1AfN2JV1wLFFnY> (accessed 15 October 2019); J. Cock 'South Africa must end its coal habit. But it's at odds about when and how' 2 March 2019 <https://www.fin24.com/Opinion/south-africa-must-end-its-coal-habit-but-its-at-odds-about-when-and-how-20190301> (accessed 15 October 2019).

¹⁷NEMA defines '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 of combination of (i) and (ii) and the interrelationships among and between them;
and

(iv) The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.'

¹⁸J. Glazewski *Environmental Law in South Africa* (e-book updated 2018) para 20.6.1.

¹⁹Glazewski (note 18 above); M. Kidd (note 2 above) 37. Kidd defines IPC as *'the range of organisational and legislative changes that enable institutions to deal with the connected nature of environmental problems.'*

In 2000, the Department of Environmental Affairs and Tourism (as it was known then), introduced the White Paper on Integrated Pollution and Waste Management for South Africa: A Policy on Pollution Prevention, Waste Minimisation, Impact Management and Remediation (the Policy).²⁰ The purpose of the Policy is to develop, implement and maintain an integrated pollution and waste management system to prevent pollution, minimise waste, and control and remediate the impacts of pollution.²¹ The Policy was intended to bring about IPPC, in the form of Integrated Pollution and Waste Management (IPWM), to eliminate the fragmented and uncoordinated manner in which pollution and waste was dealt with in existing apartheid era environmental legislation.²²

In this dissertation, I argue that although steps have been taken towards IPPC, including the Policy, the manner in which pollution continues to be regulated in South Africa does not fully address or respond to the potential of pollutants to be transferred among environmental media.²³ As such, the regulation of pollution is not sufficiently integrated, which hinders its effectiveness. I begin in Chapter 1 by describing how pollution is regulated in South Africa, in terms of the environmental right enshrined in the Constitution, and the legislation promulgated to give effect to the environmental right. Although there are many pieces of legislation which directly and indirectly relate to the regulation of pollution, I specifically focus on NEMA, National Environmental Management: Waste Act 59 of 2008 (hereafter NEMWA), National Environmental Management: Air Quality Act 39 of 2004 (hereafter NEMAQA), and National Water Act 54 of 1998 (hereafter NWA).²⁴ I illustrate how this legislation regulates pollution by means of command and control mechanisms,²⁵ including various duties of care and environmental authorisations. I illustrate that various spheres of government, and numerous departments with different mandates and powers, administer the legislation with the common goal of protecting the environment for the benefit of future and present generations, through reasonable legislative measures that prevent

²⁰Department of Environmental Affairs and Tourism, 'White Paper on Integrated Pollution and Waste Management for South Africa: A Policy on Pollution Prevention, Waste Minimisation, Impact Management and Remediation' GN 227 of 17 March 2000 GG No. 20978 (hereafter the Policy).

²¹The Policy (note 20 above) 11 – 12.

²²The Policy (note 20 above) 5.

²³Kidd (note 2 above) 37.

²⁴See note 38 and 39 below citing further legislation.

²⁵M. Kidd *Environmental Law* (2008) 210.

pollution and ecological degradation. The description illustrates that the regulation of pollution is not integrated, but is fragmented. I discuss some of the challenges that may arise as a result. In chapter 2, I consider the movement towards IPPC in order to address the fragmentation illustrated by the discussion in Chapter 1. I do so by elaborating upon the concept of IPPC, as well as engaging in a critical analysis of the Policy and how it proposes to introduce aspects of IPPC through legislative reform and co-operative governance. Building on the discussion in chapter 1, I illustrate that the Policy's focus is on waste minimisation rather than integration of pollution and waste management, and that the laws enacted after the Policy have failed pursue the objectives of IPPC. In chapter 3, given the fragmentation illustrated by the discussion in chapter 1, I critique co-operative governance in the regulation of pollution, arising from the division of competence across the 3 spheres of government and multiple departments within the 3 spheres. I argue that co-operative governance is not the optimal strategy to achieve IPPC. I propose a more centralised approach, which would be modelled on the one environmental system that was introduced in 2014 in order to achieve the integrated regulation of mining related activities.²⁶ In chapter 4, I conclude by considering the future possibilities for integration in the regulation of pollution in South Africa, to minimise significant pollution and degradation of the environment, and prevent harm to the health and well-being of those affected the most by the effects of pollution. I argue that a more integrated approach would be more consonant with the environmental right.

²⁶National Environmental Management Laws Amendment Act 25 of 2014; T. Humby 'One environmental system: aligning laws on the environmental management of mining in South Africa' (2015) 33(2) *Journal of Energy & Natural Resources Law* 110 116.

Chapter 1

In this chapter, I describe the regulation of pollution in South Africa in pursuit of section 24 of the Constitution of the Republic of South Africa, 1996 with reference to the legislation enacted to give effect to the right, and the officials who administer that legislation.²⁷ I discuss how the various pieces of legislation define pollution, and how this legislation regulates pollution by means of command and control mechanisms including various duties of care and environmental authorisations. I illustrate that the pollution regulation regime is fragmented due to the structure of government as provided for in the legislation, pursuant to which various spheres of government, and numerous departments with different mandates and powers administer the legislation, with the common goal of protecting the environment for the benefit of future and present generations. I further discuss some of the challenges that may arise as a result of fragmentation for example, duplication of administrative procedures, jurisdictional overlap, and a time consuming and confusing governance effort.²⁸

The Constitution

The environmental right provides that everyone is entitled to an environment that is not harmful to health and well-being, and requires that this right should be pursued through reasonable legislative and other measures, that among other things prevent pollution and ecological degradation.²⁹ The right further requires that the environment must be protected through reasonable legislative and other measures that secure ecologically sustainable development and use of natural resources whilst promoting justifiable economic and social development.³⁰ All conduct by both government

²⁷S 24 Constitution states that:

'Everyone has the right –

- (a) To an environment that is not harmful to their health or wellbeing; and*
- (b) To have the environment protected, for the benefit of the present and future generations, through reasonable legislative and other measures that –*
 - i. Prevent pollution and ecological degradation;*
 - ii. Promote conservations;*
 - iii. Secure ecologically sustainable development and use of natural resources while promoting justifiably economic and social development.'*

²⁸L. Kotzé 'Improving unsustainable environmental governance in South Africa: The case for holistic governance' (2006) 1 *Potchefstroom Electronic Law Journal* 2.

²⁹S 24 Constitution.

³⁰ S 24 Constitution.

institutions and natural and juristic persons that impacts upon the environment must be consistent with the environmental right.³¹ The Constitution's commitment to providing a safe and healthy environment was reaffirmed in the *Save the Vaal* case where the Supreme Court of Appeal stated:

Our Constitution, by including environmental rights as fundamental, justiciable human rights, by necessary implication requires that environmental considerations be accorded appropriate recognition and respect in the administrative processes in our country. Together with the change in the ideological climate must also come a change in our legal and administrative approach to environmental concerns.³²

The Constitution's commitment to ecologically sustainable development and use of natural resources while promoting justifiable economic and social development arguably gives rise to an inherent conflict between protection of the environment on the one hand, and technological and infrastructure development, which can alleviate social and economic circumstances, on the other.³³ Others argue that ecological sustainability entails ensuring ecological integrity in environmental decision making, thereby minimising and avoiding environmental harm.³⁴ Nonetheless, it cannot be denied that waste is an inevitable outcome of human industrial and commercial activities, the potential consequence of which is pollution of groundwater, surface water, air, and soil from the release of any unwanted, rejected or disposed of material or substance into the environment.³⁵ This pollution can negatively affect human health and well-being, and its impacts are often disproportionately borne by poorer communities, depending on circumstances such as level of toxicity and length of exposure to the pollutant.³⁶ The focus of this dissertation is not the causes of pollution, rather, this dissertation acknowledges that pollution exists, causes harm to

³¹I. Currie and J. de Waal *The Bill of Rights Handbook* (2005) 5th ed 522.

³²*Director: Mineral Development, Gauteng Region and Another v Save the Vaal Environment and Others* (1999) 2 All SA 381 (A).

³³A. du Plessis & R. Alberts 'Cooperative environmental governance: at the coal face of sustainable infrastructure development in South Africa' (2014) 29 *South African Public Law* 441 446. *Fuel Retailers Association of Southern Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province and Others* 2007 (10) BCLR 1059 (CC).

³⁴K. Bosselmann 'Strong and weak sustainable development: Making differences in the design of law' (2006) 13 *South African Journal of Environmental Law & Policy* 39.

³⁵Bosman (note 3 above) 700.

³⁶Bosman (note 3 above) 699; R. Stein 'Regulation of Waste Management in South Africa – A Case for Integration' (1997) 4 *South African Journal of Environmental Law and Policy* 253 265.

the environment, human health and well-being, and is transferred amongst various environmental media, and concentrates on the regulation thereof.³⁷

In giving effect to the environmental right, the pollution regulation regime in South Africa is vast.³⁸ I focus on NEMA as the framework legislation for environmental governance in South Africa, NEMWA as the principal legislation regulating pollution arising from waste on land, NEMAQA as the principal legislation regulating air pollution, and the NWA as the principal legislation regulating in-land water pollution. These laws are supported by an array of subordinate legislation, provincial ordinances, municipal by-laws, and a number of international instruments, all of which give further content to the legislation and have bearing on the regulation and management of pollution in South Africa.³⁹ Next I consider how pollution is defined in terms of the relevant legislation to illustrate that multiple definitions exist and are potentially confusing.

³⁷Kidd aptly points out that it is unrealistic to aim at the complete prevention of pollution since total elimination of pollution would require the elimination of civilisation. M. Kidd *Environmental Law* (2011) 2nd ed 142.

³⁸Legislation which has an impact on pollution regulation includes: Mineral and Petroleum Resources Development Act 28 of 2002 which regulates mining activities (Department of Mineral Resources); National Environmental Management Integrated Coastal Management Act 24 of 2008 relating to marine and coastal pollution, Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act 36 of 1947 which regulates the use of inter alia pesticides and fertilisers (Department of Agriculture, Forestry and Fisheries); the Nuclear Energy Act 131 of 1993, National Nuclear Regulator Act 47 of 1999, and the National Radioactive Waste Disposal Institute Act 53 of 2008 which regulate radioactive materials (National Nuclear Regulator).

³⁹Examples of sub-ordinate legislation relevant to the regulation of pollution include: Environmental Impact Assessment Regulations GNR982 of 4 December 2014; National Greenhouse Gas Emission Reporting Regulations GNR275 of 3 April 2017; Norms and Standards for the Scrapping or Recovery of motor Vehicles GN925 of 29 November 2013; Norms and Standards for the Storage of Waste GNB926 of 29 November 2013. International instruments which have an impact upon pollution regulation, include the Basel Convention which is aimed at, inter alia, ensuring that the Transboundary movement and disposal of hazardous waste is consistent with the protection of human health and the environment; the Convention on Prevention of Marine Pollution by Dumping of Wastes and Other Matter is aimed at the protection of the marine environment and providing international control of pollution of the sea; the Minamata Convention on Mercury is aimed at reducing the adverse impacts of mercury and its compounds on human health and the environment, regarding the use and international transport thereof; the Stockholm Convention on Persistent Organic Pollutants is aimed at protecting human health and the environment from persistent organic pollutants; and the UN Framework Convention on Climate Change is aimed at stabilising greenhouse gas concentrations in the atmosphere. Ratification to these international instruments requires parties to comply with their terms and manage waste in a manner that does not endanger human health, well-being or the environment, and in terms of section 39 of the Constitution, they may be considered by the courts when required to interpret the environmental right.

Defining Pollution

The concept of pollution is reflected and defined in multiple pieces of legislation, including NEMA, NEMAQA and NWA.

NEMA defines 'pollution' as

any change in the environment caused by –

- (i) substances;
- (ii) radioactive or other waves; or
- (iii) noise, odours or heat,

emitted from any activity, including the storage or treatment of waste or substances, construction and the provision of services, whether engaged in by any person or an organ of state, where that change has an adverse effect on human health or well-being or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future.⁴⁰

This is a broad and encompassing definition that arguably covers pollution across all environmental media. However, NEMWA, NEMAQA and the NWA include definitions of more specific or narrower forms of pollution. These specific and narrower definitions of pollution relate to the environmental media each piece of legislation focuses on, but common to all of the definitions is that there must be an adverse change to the relevant media.

'Waste' is defined in NEMWA as

- (a) any substance, material or object, that is unwanted, rejected, abandoned, discarded or disposed of, or that is intended or required to be discarded or disposed of, by the holder thereof regardless whether or not it can be reused, recycled or recovered and includes all wastes as defined in Schedule 3 to this Act; or
- (b) any other substance, material or object that is not included in Schedule 3 that may be defined as a waste by the Minister by notice in the Gazette.⁴¹

⁴⁰S 1 NEMA. NEMWA adopts the same definition of pollution as that contained in NEMA.

⁴¹S 1 NEMWA. The definition goes on to set out the circumstances under which waste ceases to be a waste:

- (i) *'Once an application for its re-use, recycling or recovery has been approved or, after such approval, once it is, or has been re-used, recycled or recovered;*
- (ii) *Where approval is not required, once a waste is, or has been re-used, recycled or recovered;*
- (iii) *Where the Minister has, in terms of section 74, exempted any waste or a portion of waste generated by a particular process from the definition of waste; or*
- (iv) *Where the Minister has, in the prescribed manner, excluded any waste stream or a portion of a waste stream from the definition of waste.'*

Schedule 3 defines various forms of waste, according to categories of hazardous and general wastes, including wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard, wastes from organic chemical processes, wastes from thermal processes, oil wastes and wastes of liquid fuels, wastes from human or animal health care, and food wastes.⁴² Although not all waste will, or has the potential to, cause pollution, a great deal of waste does indeed cause pollution.⁴³ Whether or not waste causes pollution will depend on the inherent characteristics of the waste itself, and the vulnerability of the receiving environment.⁴⁴ NEMWA acknowledges that waste may contaminate land.⁴⁵ With reference to the contaminated land provisions contained in Part 8 of Chapter 4 of NEMWA, 'contaminated' means

the presence in or under any land, site, buildings or structures of a substance or micro-organism above the concentration that is normally present in or under that land, which substance or micro-organism directly or indirectly affects or may affect the quality of soil or the environment adversely.

Land that is contaminated will amount to polluted land within NEMA's definition of pollution.

NEMAQA defines 'air pollution' as

any change in the composition of the air caused by smoke, soot, dust (including fly ash), cinders, solid particles of any kind, gases, fumes, aerosols and odorous substances.⁴⁶

As the air forms part of the environment, there is a clear overlap between air pollution under NEMAQA, and pollution of the environment more generally under NEMA.

The NWA defines 'pollution' with reference to water resources as

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 any beneficial purpose for which it may reasonably be expected to be used; or
- (b) harmful or potentially harmful –
 - (aa) to the welfare, health or safety of human beings;
 - (bb) to any aquatic or non-aquatic organisms;

⁴²Schedule 3 NEMWA.

⁴³For example ash from the burning of coal, or waste hydraulic and engine oils.

⁴⁴Bosman (note 3 above) 702.

⁴⁵Through the inclusion of the Contaminated Land provisions contained in Part 8 of NEMWA.

⁴⁶S 1 NEMAQA.

- (cc) to the resource quality; or
- (dd) to property.⁴⁷

As water forms part of the environment, there is a clear overlap between pollution of the environment in terms of NEMA and pollution of water in terms of the NWA. Having illustrated that there are multiple overlapping definitions of pollution, I now illustrate that there are numerous environmental authorisations required to regulate pollution.

Environmental Authorisations

NEMA establishes national environmental management principles which apply throughout the Republic to the actions of all organs of state that may significantly affect the environment.⁴⁸ These principles serve as guidelines in terms of which any organ of state must exercise any function when taking any decision concerning the protection of the environment.⁴⁹ Any other law concerned with the protection or management of the environment must be interpreted, administered and implemented according to the environmental management principles.⁵⁰ The principles require, amongst other things, that sustainable development entail the consideration of all relevant factors including that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied,⁵¹ and that the social, economic and environmental impacts of activities, including disadvantages and benefits, be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.⁵² The principles inform the environmental authorisations and duties of care discussed in this chapter.

South African environmental law makes use of command and control mechanisms to regulate pollution, including by requiring various environmental authorisations under NEMA, NEMWA, NEMAQA and the NWA.⁵³ The purpose of this process is for the

⁴⁷S 1 NWA.

⁴⁸S 2(1) NEMA.

⁴⁹S 2(1)(c) NEMA.

⁵⁰S 2(1)(e) NEMA.

⁵¹ S 2(4)(a)(viii) NEMA

⁵² S 2(4)(i) NEMA

⁵³I use the term 'environmental authorisation' for the specific authorisation required in terms of section 24 of NEMA where it is applicable, and also where applicable, when referring to the any of

state, the public and the person applying for the authorisation to be made aware of the possible pollution impacts of the proposed activity upon the environment, and so that the impacts may be prevented, mitigated and managed accordingly. The significance of an environmental authorisation in the context of pollution control is that it sets out conditions in terms of which an activity may be conducted in order to manage the impacts of pollution, which the command mechanism, and the imposition of consequences for non-compliance therewith, which is the control mechanism.

NEMA lists specific activities that may not commence without obtaining an environmental authorisation in respect of the particular activity, due to the potential for that activity to cause significant pollution to and/or degradation of the environment.⁵⁴ In order to obtain an environmental authorisation, the potential consequences and impacts of the activity upon the environment must be considered, investigated, assessed and reported on to the competent authority.⁵⁵ Commencement with such an activity without an environmental authorisation is an offence, if convicted a person is liable to a fine not exceeding R10 million, or imprisonment for a period not exceeding ten years, or to both such fine or such imprisonment.⁵⁶ An environmental authorisation must contain conditions subject to which the activity must be conducted,⁵⁷ and which provide for the ongoing management and monitoring of the impacts of the activity on the environment throughout the life cycle of the activity.⁵⁸ The environmental authorisation is the control mechanism. Failure to comply with the conditions of an environmental authorisation is also an offence, if convicted a person is liable a fine not exceeding R10 million, or imprisonment for a period not exceeding ten years, or to both such fine or such imprisonment.⁵⁹ The imposition of penalties for failure to comply with these requirements, is the control mechanism.

authorisations required in terms of NEMA, NEMWA, NEMAQA and the NWA. Section 1 of NEMA defines 'environmental authorisation' as the authorisation by a competent authority of a listed activity or specified activity in terms of this Act, and includes a similar authorisation contemplated in a specific environmental management Act.

⁵⁴S 24 NEMA.

⁵⁵S 24(1) NEMA. *Earthlife Africa Johannesburg v The Minister of Environmental Affairs & Others* 2017 (2) All SA 519 (GP).

⁵⁶S 49A(1)(a) read with s49B(1) NEMA.

⁵⁷S 26(d) Environmental Impact Assessment Regulations, 2014.

⁵⁸S 24E NEMA.

⁵⁹S 49A(1)(c) read with s 49B(1) NEMA.

There are three competent authorities responsible for issuing environmental authorisations in terms of NEMA, across two departments, in the national and provincial spheres. The Minister of Mineral Resources is the competent authority responsible for issuing the environmental authorisation where the listed or specified activity is directly related to, prospecting or exploration of a mineral or petroleum resource, or extraction and primary processing of a mineral or petroleum resource.⁶⁰ The Minister of Environment, Forestry & Fisheries is the competent authority if the activity has implications for international environmental commitments or relations, if the activity has a development footprint that falls within the boundaries of more than one province or traverses international boundaries, if the activity is undertaken by a national department, provincial department or statutory body, or if the activity will take place within a national proclaimed protected area or other conservation area under control of a national authority.⁶¹ In all other scenarios the competent authority is the MEC responsible for environmental affairs in the province in which the proposed activity is to be undertaken.⁶² Each of these authorities is empowered to delegate its powers to officials in his/her respective department.⁶³

NEMWA identifies waste management activities which have, or are likely to have a detrimental effect on the environment. In order to prevent, mitigate and manage the potential detrimental effects, a person may only conduct a listed waste management activity, if it is in terms of the relevant norms and standards, or in terms of a waste management licence, which amounts to an environmental authorisation.⁶⁴ Commencement of a waste management activity without a waste management licence or in contravention of the applicable norms and standards is an offence, if convicted a person is liable to a fine not exceeding R10 000 000, or to imprisonment for a period not exceeding ten years, or to both such fine or such imprisonment, in addition to any other penalty or award that may be imposed or made in terms of NEMA.⁶⁵ A waste management licence must contain details such as the amount and

⁶⁰S 24C NEMA.

⁶¹S 24C NEMA.

⁶²S 24C NEMA.

⁶³S 42 NEMA.

⁶⁴S 19 NEMWA.

⁶⁵S 67(1)(a) read with s 68(1) NEMWA.

type of waste that may be generated, handled, processed, stored, reduced, re-used, recycled, recovered or disposed of,⁶⁶ and operating requirements relating to the management of the applicable waste.⁶⁷ The waste management licence is the control mechanism. Failure to comply with the conditions of a waste management licence is also an offence, if convicted a person is liable to a fine not exceeding R10 000 000, or to imprisonment for a period not exceeding ten years, or to both such fine and such imprisonment, in addition to any other penalty or award that may be imposed or made in terms of NEMA.⁶⁸ The imposition of penalties for failure to comply with these requirements, is the control mechanism.

There are three competent authorities, responsible for issuing waste management licences, across two departments in the national and provincial spheres. The Minister of Mineral Resources is the licensing authority where the waste management activity is, or is directly related to, prospecting or exploration of a mineral or petroleum resource, extraction and primary processing of a mineral or petroleum resource, or residue deposits and residue stockpiles from a prospecting, mining, exploration or production operation.⁶⁹ The Minister of Environment, Forestry & Fisheries is the licensing authority where the waste management activity involves the establishment, operation, cessation or decommissioning of a facility at which hazardous waste has been or is to be stored, treated, or disposed of, the waste management activity involves international obligations including the import or export of hazardous waste, the waste management activity is to be undertaken by a national department, provincial department or statutory body, the waste management activity will affect more than one province or traverse international boundaries, or where two or more waste management activities are to be undertaken at the same facility and the Minister is the licensing authority for any one of those activities.⁷⁰ In all other cases, MEC responsible for environmental affairs in the province in which the proposed waste management activity will be carried out is the licensing authority.⁷¹ Each of

⁶⁶S 51(1)(h) NEMWA.

⁶⁷S 51(1)(j) NEMWA.

⁶⁸S 67(1)(h) read with s 68(1) NEMWA.

⁶⁹S 43 NEMWA.

⁷⁰S 43 NEMWA.

⁷¹S 43 NEMWA.

these authorities is empowered to delegate its powers to officials in his/her respective department.⁷²

NEMAQA identifies activities that require an atmospheric emission licence.⁷³ These are activities which result in atmospheric emissions and which have, or may have a significant detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage.⁷⁴ Minimum emission standards must also be established in respect of a substance, or mixture of substances, resulting from a listed activity, and which set out the permissible amount, volume, emission rate or concentration of that substance, or mixture of substances, which may be emitted by a listed activity.⁷⁵ In order to prevent, mitigate and manage the impacts of the substance, or mixture of substances, emitted into the environment, no person may not conduct a listed activity without a provisional atmospheric emission licence or an atmospheric emission licence.⁷⁶ Contravention thereof is an offence, if convicted a person is liable to a fine not exceeding R5 000 000, or to imprisonment for a period not exceeding five years and in the case of a second or subsequent conviction, to a fine not exceeding R10 000 000 or imprisonment for a period not exceeding ten years or in both instances to both a fine and such imprisonment.⁷⁷ A provisional atmospheric emission licence and an atmospheric emission licence must specify the maximum allowed amount, volume, emission rate or concentration of pollutants that may be discharged in the atmosphere, any operating requirements relating to atmospheric discharges, and any other matters which are necessary for the protection or enforcement of air quality.⁷⁸ The atmospheric emission licence is the control mechanism. Failure to comply with a condition or requirement of an atmospheric emission licence is also an offence, if convicted a person is liable to a fine not exceeding R10 million, or imprisonment for a period not exceeding ten years, or to both such fine or such imprisonment.⁷⁹ The

⁷²S 79 NEMWA.

⁷³S 21 NEMAQA.

⁷⁴S 21 NEMAQA.

⁷⁵S 21(3) NEMAQA.

⁷⁶S 22 NEMAQA.

⁷⁷S 51(1)(a) read with s 52(1) NEMAQA.

⁷⁸S 43(1) NEMAQA.

⁷⁹S 51(1)(e) read with s 52(1) NEMAQA.

imposition of penalties for failure to comply with these requirements, is the control mechanism. Section 36 of NEMAQA appoints Metropolitan or District Municipalities as the licencing authority responsible for issuing atmospheric emission licences, alternatively this function may be delegated to a provincial organ of state in terms of section 238 of the Constitution.⁸⁰

The NWA identifies particular activities that require a water use license, such as taking water from a water resource, storing water, discharging waste or water containing waste into a water resource, disposing of waste in a manner which may detrimentally impact on a water resource, or disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process.⁸¹ In order to protect the quality of water, water may only be used in terms of a licence issued in respect thereof, or unless it falls within the defined exclusions, in which case it is considered to be a permissible water use, or if the competent authority has dispensed with the requirement of a licence.⁸² It is an offence to use water otherwise than as permitted under NWA, if convicted a person may be liable, on the first conviction, to a fine or imprisonment for a period not exceeding 5 years, or to both a fine and imprisonment and, in the case of a second or subsequent conviction, to a fine or imprisonment for a period not exceeding 10 years or to both a fine and such imprisonment.⁸³ The competent authority responsible for issuing water use licences is either the Minister of Water and Sanitation, or a catchment management agency where it has been delegated that power or duty by the Minister responsible for water affairs. These powers may be delegated to officials within the department.⁸⁴

In order to illustrate the significance of the various authorisations in the context of regulating pollution, it is useful to consider the example of the development of a coal-fired power station, which inevitably causes pollution to the environment within the definition in NEMA, generates waste and causes contamination within the definitions

⁸⁰S 36 NEMAQA.

⁸¹S 21 NWA.

⁸²S 22 NWA.

⁸³S 151 NWA.

⁸⁴S 63 NWA.

in NEMWA, causes air pollution within the definition in NEMAQA, and causes pollution of water within the definition in the NWA.⁸⁵ Before commencing construction of a power station, a developer would need to obtain four different environmental authorisations from three different departments. The processes to obtain these licences would be aimed at preventing, managing or mitigating pollution of land generated from the coal-fired power station. Accepting that the power station is to be developed and operated by Eskom, a statutory body,⁸⁶ an environmental authorisation and waste management licence would be required from the Minister of Environment, Forestry & Fisheries.⁸⁷ An environmental authorisation aims to ensure that pollution and degradation to the environment from the construction and operation of the coal-fired power station is managed, and a waste management licence aims to ensure that the detrimental impacts of waste generated from the coal-fired power station, for example the disposal of ash, are managed. An atmospheric emissions licence would be required from the relevant metropolitan or district municipality in whose area of jurisdiction the power station is to be constructed.⁸⁸ The processes to obtain an atmospheric emissions licence aims to ensure that the detrimental impacts from the emissions released into the environment, for example from the burning of coal, are managed. A water use licence would be required from the Department of Water and Sanitation. The processes to obtain a water use licence aims to ensure that the detrimental impacts resulting from, for example the storage of contaminated water resulting from the cooling processes, are managed. These environmental authorisations are a command measure aimed at the prevention and management of the impacts of pollution generated by the power station on the specific environmental media to which they relate, and the failure to obtain any one of the environmental authorisations, amounts to an offence in terms of each Act, a control measure. Next I discuss the multiple duties of care which supplement the command and control measures pursuant to the environmental authorisation regime described above.

⁸⁵Life After Coal Campaign Report (note 5 above).

⁸⁶Eskom Conversion Act 13 of 2001.

⁸⁷S 24 NEMA read with GNR983, GNR984, and GNR 985 of 4 December 2014 as amended; s 19 NEMWA read with GNR921 of 29 November 2013 as amended.

⁸⁸S 21 NEMAQA read with GN893 of 22 November 2013, as amended.

Duty of Care

In addition to various environmental authorisations, pollution is regulated through a number of duties of care imposed by the different legislation, all of which require that a person act in such a way that avoids and mitigates harm to the environment. I will discuss section 28 of NEMA, sections 16 and 21 of NEMWA, and section 19 of NWA. All of these duties give effect to the environmental management principles that the polluter pays,⁸⁹ that pollution and degradation of the environment be avoided,⁹⁰ and that a risk-averse and cautious approach be applied.⁹¹

Section 28 of NEMA provides that every person who causes, 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.⁹² Alternatively, if the harm to the environment is authorised by law or cannot reasonably be avoided or stopped, the pollution or degradation of the environment must be minimised and rectified.⁹³ The Director-General, the Director-General of the department of Mineral Resources, or a provincial head of department may, after having given adequate opportunity to affected persons to inform him or her of their relevant interests, direct any person who is causing, has caused or may cause significant pollution or degradation of the environment to cease any activity, operation, or undertaking, investigate, evaluate and assess the impact of specific activities and report thereon, commence taking specific measures before a given date, diligently continue with those measures, and complete those measures before a specified reasonable date.⁹⁴ A person who fails to comply with such a directive commits an offence. In addition thereto, the unlawful and intentional or negligent commission of any act or omission which causes significant pollution or degradation of the environment, or is likely to cause significant pollution or degradation of the environment is an offence.⁹⁵ Similarly the unlawful and intentional or negligent commission of any act or omission which detrimentally affects or is likely to

⁸⁹ S 2(4)(p) NEMA.

⁹⁰ S 2(4)(a)(ii) NEMA.

⁹¹ S 2(4)(a)(vii) NEMA.

⁹² S 28(1) NEMA.

⁹³ S 28(1) NEMA.

⁹⁴ S 28(4) NEMA.

⁹⁵ S 49A(1)(e) NEMA.

detrimentally affect the environment, is an offence.⁹⁶ If convicted a person is liable to a fine not exceeding R10 000 000 or to imprisonment for a period not exceeding ten years, or to both such fine and such imprisonment.⁹⁷

NEMWA imposes two duties of care in relation to waste. The first is a duty of care in respect of waste management upon the holders of waste to take all reasonable measures to avoid the generation of waste, to reduce, re-use, recycle and recover waste, to ensure that waste is treated and disposed of in an environmentally sound manner, to prevent contraventions of the requirements of NEMWA, and to manage waste to prevent harm to health or the environment.⁹⁸ 'Reasonable measures' in this regard may include measures to investigate, assess and evaluate the impact of the waste in question on health or the environment, cease, modify or control any act or process causing pollution, environmental degradation or harm to health, comply with any norm or standard or prescribed management practice, eliminate any source of pollution or environmental degradation, and remedy the effects of the pollution or environmental degradation.⁹⁹ Contravention of the duty of care in respect of waste management is an offence, if convicted a person is liable to a fine not exceeding R10 000 000 or to imprisonment for a period not exceeding ten years, or to both such fine and such imprisonment, in addition to any other penalty or award that may be imposed or made in terms of NEMA.¹⁰⁰ The second duty of care requires that persons who store waste do so in a safe manner, put in place measures to prevent accidental spillage, leaking, waste being blown away, and any nuisances from the storage of the waste, and ensure that the storage of waste does not cause pollution or harm to health.¹⁰¹ Contravention of the duty of care in relation to the storage of waste is an offence, if convicted a person is liable to a fine not exceeding R5 000 000 or to imprisonment for a periods not exceeding 5 years, or to both a fine and such imprisonment, in addition to any other penalty or award that may be imposed or made in terms of NEMA.¹⁰²

⁹⁶S 49A(1)(f) NEMA.

⁹⁷S 49B(1) NEMA.

⁹⁸S 16(1) NEMWA.

⁹⁹S 16(3) NEMWA.

¹⁰⁰S 67(1)(a) read with s 68(1) NEMWA.

¹⁰¹S 21 NEMWA.

¹⁰²S 67(1)(b) read with s 68(2) NEMWA.

NEMAQA imposes a duty upon the state to protect and enhance the quality of air in the Republic and to apply the Act in a manner that achieve the progressive realisation of the environmental right.¹⁰³ It does not impose a duty of care upon polluters similar to those contained in NEMA, NEMWA and NWA.

The NWA imposes a duty of care on an owner of land, a person in control of land, or a person who occupies or used the land, on which any activity or process is or was performed or undertaken, or any other situation exists which causes, has caused or is likely to cause pollution of a water resource, to take all reasonable measures to prevent any pollution from occurring, continuing or recurring.¹⁰⁴ 'Reasonable measures' in this regard may include measures to cease, modify or control any act or process causing pollution, comply with any prescribed waste standard or management practice, contain or prevent the movement of pollutants, eliminate any source of pollution, remedy the effects of the pollution, and remedy the effects of any disturbance to the bed and banks of a watercourse.¹⁰⁵ A catchment management agency may direct any person who fails to take the required measures to commence taking specific measures before a specified date, diligently continue with those measures, and complete them before a given date.¹⁰⁶ No person may unlawfully and intentionally or negligently commit any act or omission which pollutes or is likely to pollute a water resource, and no person may unlawfully and intentionally or negligently commit any act or omission which detrimentally affects or is likely to affect a water resource.¹⁰⁷ If convicted a person is liable on first conviction to a fine or imprisonment for a period not exceeding 5 years, or to both a fine and such imprisonment, and in the case of a second or subsequent conviction, to a fine or imprisonment for a period not exceeding 10 years or to both a fine and such imprisonment.¹⁰⁸

¹⁰³S 3 NEMAQA.

¹⁰⁴S 19(1) NWA.

¹⁰⁵S 19(2) NWA.

¹⁰⁶S 19(3) NWA.

¹⁰⁷S 151(i) and (j) NWA

¹⁰⁸ S 151(2) NWA.

The duty of care imposed by NEMA is broad, in that it covers pollution across all environmental media, and can have a wide application to any circumstances which causes, has caused, or may cause, significant pollution and degradation of the environment.¹⁰⁹ It applies to pollution caused in the present, past and future.¹¹⁰ The duty of care in NWA is similarly worded to that in NEMA, however it is media specific and focuses on water, as it the duty of care in NEMWA, in that it focuses on pollution on land caused by waste. NEMAQA imposes a duty of care upon the state only, which is in contrast to NEMA, NEMWA and NWA which imposes the duty on any person causing pollution.

Applying these duties of care to the example of a coal fired power station, illustrates that the daily operations of the power station must be conducted in a manner that not only ensures compliance with all the conditions of all environmental authorisations obtained by the power station, but also in a manner that ensures compliance with the various duties of care. These duties of care are set out in three pieces of legislation, and administered by two different departments, across the spheres of government.

Fragmentation

The above discussion illustrates that under South Africa environmental law, pollution is regulated through a number of Acts, which, alongside NEMA, are environmental media specific, and which are administered by various spheres of government within a number of different departments. Kotzé describes this phenomenon as legislative and institutional fragmentation.¹¹¹ Legislative fragmentation refers to multiple pieces of legislation applicable to various environmental media, promulgated at a national, provincial and/or local government level. Institutional fragmentation refers to the administration of the legislation by different departments divided amongst the three spheres of government.¹¹²

Kidd argues that a fragmented approach does not efficiently control pollution because it does not sufficiently recognise or address the fact that pollutants are often

¹⁰⁹S 28(1) NEMA.

¹¹⁰S 28(1A) NEMA.

¹¹¹Kotzé (note 28 above) 3 – 15.

¹¹²Kotzé (note 28 above) 3 – 15.

transferred from one environmental media to another.¹¹³ Some of the other challenges which may arise as a result of fragmentation include

duplication and overlap of the governance effort, with all organs of state focussing on environmental authorisation processes without having resources available to do post-authorisation follow-up; costly delays in decision-making; inefficient arrangements between organs of state that control similar activities or proposals; significant gaps in control arrangements, whilst some pertinent issues are not controlled at all; inconsistent behaviour by government officials; conflicting conditions in authorisations; ineffective governance; and externalisation of governmental inefficiencies to development costs which may result in negative impacts on development.¹¹⁴

The challenges which arise from this fragmented approach were illustrated using the example of a coal-fired power station. Before commencing construction of a power station three separate applications need to be submitted to three departments, namely the Department of Environment, Forestry & Fisheries, the Department of Water & Sanitation, and the relevant District or Metropolitan Municipality. Each of those applications need to be considered and processed and the government resources are thus three times of that required as opposed to a single application submitted to a single department. Furthermore, the various authorisations could have confusing or contradictory conditions.¹¹⁵ In addition thereto four duties of care, in terms of three pieces of legislation need to be complied with. These problems are illustrative of duplicated and disjointed governance efforts, which extend to enforcement efforts, post-decision follow-up, monitoring, and criminal and civil actions.¹¹⁶ It is in the context of the above description of the fragmented manner in which pollution is regulated in South Africa, that I aim to demonstrate that a more integrated approach would be more effective to prevent pollution and promote an environment that is not harmful to health or well-being. I do so in chapter 2 below by considering what steps South Africa has taken towards adopting a more integrated approach and to what extent these steps have brought about integration and the better regulation of pollution.

¹¹³Kidd (note 37 above) 207.

¹¹⁴Kotzé (note 28 above) 18.

¹¹⁵Kotzé (note 28 above) 18.

¹¹⁶Kotzé (note 28 above) 18; L. Kotzé, J. Nel, W. du Plessis, E. Snyman 'Strategies to integrate environmental policy at the operational level: towards an integrated framework for environmental authorisations' (2007) 14 *SAJELP* 57 58.

Chapter 2

In this chapter, I consider the movement towards IPPC in South Africa in order to address the fragmentation illustrated by the discussion in Chapter 1. I do so by elaborating upon the concept of IPPC, as well as a critical analysis of the Policy and how it proposes to introduce aspects of IPPC through legislative reform and co-operative governance. Building on the discussion in chapter 1, I illustrate that the Policy's focus is aimed more at waste minimisation than the integration of pollution and waste management. I also argue that the laws regulating pollution which were enacted after the Policy have failed pursue the objectives of IPPC.

Integrated Pollution Prevention and Control

There is no universally accepted definition of IPPC. Some literature refers to Integrated Pollution Control¹¹⁷ or Integrated Waste Management.¹¹⁸ Recognising that pollutants have the potential to be transferred from one media to another, for the purpose of this dissertation, I define IPPC as the control of pollution by assessing all emissions or contaminants emitted from an industry into all environmental media (air, land, and water), in an integrated, holistic and inter-dependant manner.¹¹⁹

IPPC was introduced in the European Union when the European Council adopted the Directive Concerning Integrated Pollution Prevention and Control on 24 September 2009 (the Directive).¹²⁰ The Directive makes use of an authorisation that controls emissions into the air, water and land from an installation, preventing the shift of pollutants from one medium to another, and thereby achieving a high level of protection for the environment as a whole.¹²¹ This could mean a single authorisation issued by a single competent authority, alternatively, where there is more than one

¹¹⁷Kidd defines Integrated Pollution control as the range of organisational and legislative changes that enable institution to deal with the connected nature of environmental problems. Kidd (note 2 above) 38.

¹¹⁸Bosman defines Integrated Waste Management as the integrated planning, implementation, monitoring, and review of waste management measures to ensure sustainability and to prevent detrimental impacts on human health and the environment. Bosman (note 3 above) 701.

¹¹⁹L. Kotzé 'Revisiting the South African Integrated Pollution Prevention and Control (IPPC) regime: a critical survey of recent developments' (2007) 22 *South African Public Law* 34 39.

¹²⁰European Council Directive 96/61/EC of 24 September 1996 concerning Integrated Pollution Prevention and Control (hereafter the Directive).

¹²¹The Directive (note 120 above) para 7, 8 and 9 of the Preamble.

competent authority, the Directive requires that the conditions of the authorisation and the procedure for granting the authorisation be fully coordinated to guarantee an effective integrated approach.¹²² The motivation behind IPPC is to regulate all discharges into all 3 environmental media, and in that way regulate a site (or installation as it is cited in the Directive) as opposed to regulating prescribed processes that take place on that site.¹²³ The Directive requires that emission limit values contained in the authorisation be set with reference to the Best Available Techniques (BAT), and under this approach facilities innovate their production practices, processes and technology to reduce or eliminate the volume, concentration and/or toxicity of pollutants generated at source.¹²⁴ It is contended that this approach allows facilities to reduce their costs 'through efficiency improvements based on a lower level of resources used and by reducing compliance and liability costs'.¹²⁵

The Directive provides a framework for IPPC and obliges all European Union member states to take steps to introduce the provisions of the directive into their domestic legislative regimes.¹²⁶ The Netherlands enacted legislation based on IPPC which addressed past silo-based legislation, and combined various types of authorisations in terms of different legislation, into a single integrated authorisation.¹²⁷ Similarly, Finland's past environmental governance regime, characterised by many authorisations issued in terms of several pieces of environmental media specific legislation, was amended in line with the Directive, in terms of which 3 authorities

¹²²The Directive (note 120 above) Article 7.

¹²³S. Wolf & N. Stanley *Wolf & Stanley on environmental law* 6th edition 2014 Routledge 26.

¹²⁴V. Vazquez, G. Rodriguez, T. Daddi, M. De Giacomo, C. Polders & E. Dils 'Policy challenges in transferring the integrated pollution prevention and control approach to Southern Mediterranean countries: a case study' (2015) 107 *Journal of Cleaner Production* 486 (hereafter Vazquez et al) 487.

¹²⁵Vazquez et al (note 124 above) 487.

¹²⁶Some member states such as the United Kingdom, Finland and the Netherlands, have undertaken legislative reforms in line with the Directive. For a comparative analyses of the Finnish and Netherlands reforms see L. Kotzé 'Integrating Pollution Regulation Regimes: A Comparative Survey of the Finnish and South African legal Systems' (2007) *OBITER* 439; K. Silvo, M. Melanen, A. Honasalo, S. Ruonala & M. Lindsrom 'Integrated pollution prevention and control – the Finnish approach' (2002) 35 *Resources, Conservation and Recycling* 45; and L. Kotzé 'On Integrated environmental governance in the Netherlands: a comparative study in reforms for South Africa' (2007) *XL CILSA* 472.

¹²⁷L. Kotzé 'On integrated environmental governance in the Netherlands: a comparative study in reforms for South Africa' (2007) *Comparative and International Law Journal of South Africa* 472 473.

have clearly delineated competencies to issue an integrated authorisation regarding all environmental media.¹²⁸

According to Kidd there are a number of advantages to the integrated regulation of pollution including, the simplification of the regulation and administrative system, which in turn prevents duplication and is more efficient and economical.¹²⁹ Integration can ultimately lead to better management because it provides the opportunity to question the facilities processes as a whole and assess if there are ways to conduct business so as to reduce waste production and thereby reduce pollution.¹³⁰

Kotzé explains that integration can be achieved in a number of ways, procedural, substantive, or organisational integration.¹³¹ Procedural integration refers to the procedure surrounding the issuing of authorisations which may be established by way of a single authorisation, a single authorisation-issuing authority, or co-ordination and integration of procedures and structures of the authorities involved in the authorisation process; substantive integration refers to the contents of the authorisation; and organisational integration entails co-ordination of structures and procedures controlled by a lead agent.¹³²

IPPC in South Africa

IPPC in South Africa has been approved at a policy level in terms of the White Paper on Integrated Pollution and Waste Management for South Africa: Policy on Pollution Prevention, Waste Minimisation, Impact Management and Remediation (the Policy).¹³³ As opposed to the term IPPC, the Policy opts for Integrated Pollution and Waste Management (IPWM), which it defines as 'a holistic and integrated system and process of management, aimed at pollution prevention and minimisation at source'.¹³⁴ The Policy acknowledges that, at the time of publication in 2000, despite extensive legislation, inadequate integration of environmental media and inadequate

¹²⁸L. Kotzé (note 126 above) 439.

¹²⁹Kidd (note 19 above) 39; Kotzé (note 119 above) 41.

¹³⁰Kidd (note 19 above) 39; Kotzé (note 119 above) 41.

¹³¹Kotzé (note 127 above) 473.

¹³²Kotzé (note 127 and 128 above).

¹³³The Policy (note 20 above).

¹³⁴The Policy (note 20 above) 10.

integration across government departments are limitations to environmental protection.¹³⁵ As a result, the aim of the Policy is to develop, implement and maintain an integrated pollution and waste management system to prevent pollution, minimise waste, and control and remediate the impacts of pollution.¹³⁶ The Policy acknowledges how the Constitution has divided government into 3 spheres which have specified legislative competencies, and under that umbrella it allocates functions and powers to the different spheres and departments who play a role in the protection of the environment.¹³⁷ It follows then that integration in terms of the Policy requires the legislative and executive authority of the different spheres to exercise their functions in terms of the constitutional provisions of co-operative governance. This aspect is addressed further in chapter 3.

The Policy hopes to address a number of pollution issues which are described in chapter 3 of the Policy. Problematically, and showing a lack of appreciation for the propensity of pollution to transfer from one environmental media to the next, the pollution issues are categorised into the 3 receiving media (i.e. land, air and water).

Land pollution issues include:

- A lack of and/or poor location of and/or inadequate management of waste disposal sites;
- Mining related issues.¹³⁸

Issues relating to pollution and waste include:

- The failure to afford waste management the priority as an essential function required to prevent pollution and protect the environment and public health;
- Fragmented, unfocused and ineffective waste management legislation resulting in a lack of control in all aspects of waste management; and
- The absence of integrated waste management options due to a focus on waste disposal and impact control.¹³⁹

The air pollution issues include:

¹³⁵The Policy (note 20 above) 13.

¹³⁶The Policy (note 20 above) 11 – 12.

¹³⁷The Policy (note 20 above) 44.

¹³⁸The Policy (note 20 above) 22.

¹³⁹The Policy (note 20 above) 23.

- Dust from construction, agricultural, industrial and mining activities;
- Deficiencies in air quality management due to, amongst others, the control of emissions based on source control without reference to the receiving environment, lack of incentive for minimising pollution, and an emphasis on reactive control as opposed to proactive control.¹⁴⁰

The water pollution issues include:

- The excess salinisation of water resources which reduces crop yields and increases the requirements for the pre-treatment of water for selected industrial uses;
- The deteriorating microbiological quality of water resources from inadequate sanitation services, ineffective sewage treatment, and leachate from waste disposal systems, which changes the natural functioning of existing ecosystems, complicates the water treatment process, and can impact the health of water users; and
- High industrial pollution from trace metals and synthetic organic pollutants.¹⁴¹

Chapter 4 of the Policy identifies specific aspects of pollution prevention and waste minimisation that could contribute to establishing an integrated national pollution and waste management system.¹⁴² These aspects are separated according to environmental media, and for each media are divided into issues regarding policy implementation and issues regarding integration.¹⁴³ The Policy refers to both integration between environmental media, and integration between the various government departments governing the environmental media.¹⁴⁴ It goes on to explain that government should adopt a functional approach to integrated pollution and waste management, which entails source-based controls of the generation and discharge of waste, management of the receiving media, and remediation to reverse environmental damage.¹⁴⁵

¹⁴⁰The Policy (note 20 above) 21.

¹⁴¹The Policy (note 20 above) 20.

¹⁴²The Policy (note 20 above) 26.

¹⁴³The Policy (note 20 above) 26 – 29.

¹⁴⁴The Policy (note 20 above) 26.

¹⁴⁵The Policy (note 20 above) 29.

Seven strategic goals and objectives are discussed in chapter 5, which are to be achieved through the National Waste Management Strategy. The Policy describes these goals and objectives as the priorities for achieving the vision for integrated pollution and waste management over a period of 5 to 10 years.¹⁴⁶ In describing the 7 goals, objectives and short-term deliverables are set out for each. The first goal is to develop, implement and maintain an effective institutional framework and integrated legislative system.¹⁴⁷ In relation to the legislative system, the Policy refers to a law reform process to identify all the requirements for new and amended legislation pertaining to all aspects of the environment including pollution and waste management.¹⁴⁸ It continues to explain that this law reform process will take place under the overarching framework of NEMA and the White Paper on Environmental Management Policy for South Africa.¹⁴⁹ One of the objectives regarding the institutional framework is to establish mechanisms that give effect to institutional arrangements for all spheres of government.¹⁵⁰ One of the short-term deliverables for this goal is to 'establish a single, streamlined and efficient and assessment reporting requirements, replacing the current fragmented and inefficient systems'.¹⁵¹ The second strategic goal is pollution prevention, waste minimisation, impact management and remediation.¹⁵² This goal aims to promote holistic and integrated pollution and waste management through pollution prevention, minimisation at source, impact management and remediation.¹⁵³ The objectives for achieving this goal are set out according to water pollution management, air quality management, land/soil pollution management, and waste management.¹⁵⁴ The third goal is titled 'holistic and integrated planning', the objective of which is to incorporate integrated environmental management principles in spatial development planning.¹⁵⁵ The remaining goals relate to public participation and partnerships,¹⁵⁶ empowerment of

¹⁴⁶The Policy (note 20 above) 31.

¹⁴⁷The Policy (note 20 above) 32.

¹⁴⁸The Policy (note 20 above) 33.

¹⁴⁹The Policy (note 20 above) 33.

¹⁵⁰The Policy (note 20 above) 33.

¹⁵¹The Policy (note 20 above) 33.

¹⁵²The Policy (note 20 above) 34.

¹⁵³The Policy (note 20 above) 34.

¹⁵⁴The Policy (note 20 above) 34 – 39.

¹⁵⁵The Policy (note 20 above) 39.

¹⁵⁶The Policy (note 20 above) 40. This goal aims to ensure effective public participation.

small, micro and medium enterprises, woman and the youth and education on pollution and waste management,¹⁵⁷ information management,¹⁵⁸ and international co-operation.¹⁵⁹

Chapter 6 is entitled 'Governance' and sets out the functions and powers of various government departments including Water Affairs and Forestry, Minerals and Energy and provincial and local governments.¹⁶⁰ It identifies the Department of Environmental Affairs and Tourism (now the Department of Environment, Forestry & Fisheries) as the lead agent for the environment, which will take overall responsibility for integrated pollution and waste management in South Africa.¹⁶¹ In order to co-ordinate the powers and functions between the various government departments, the Policy states that co-operative governance, as envisaged in the Constitution, will be used to eliminate fragmentation, duplication, and lack of co-ordination in waste and pollution regulation.¹⁶²

Does the Policy pursue IPPC?

Kidd argues that the Policy does not entirely pursue the objectives of IPPC because it has a greater focus on the minimisation of waste, as opposed to the integration and control of pollution.¹⁶³ The National Waste Management Strategy (Waste Strategy),¹⁶⁴ which the Policy intended to be the vehicle for achieving integrated pollution and waste management, was published in May 2012, some 12 years after the Policy was published. Whilst (for reasons of scope and length) I do not analyse the Waste Strategy in this dissertation, it is worth noting that the Waste Strategy appears to mirror the focus of waste management contained in the Policy, as opposed to IPPC.

¹⁵⁷The Policy (note 20 above) 40 – 41. This goal aims to increase awareness of pollution and waste issues and development knowledge and skills through education.

¹⁵⁸The Policy (note 20 above) 42. This goal aims to maintain information databases to make information accessible to interested and affected parties.

¹⁵⁹The Policy (note 20 above) 43. This goal aims to develop mechanisms to deal effectively, and in the national interest, with international issues affecting pollution and waste.

¹⁶⁰The Policy (note 20 above) 44.

¹⁶¹The Policy (note 20 above) 45.

¹⁶²The Policy (note 20 above) 5.

¹⁶³Kidd (note 37 above) 177.

¹⁶⁴National Waste Management Strategy GN344 of 4 May 2012.

It is clear from the Policy that cross-media integration is not a priority, owing to the fact that the key pollution issues, and the approach to integrated pollution and waste management is described according to the environmental media.¹⁶⁵ This fragmented approach was further reinforced by the promulgation of media specific legislation regulating air quality (NEMAQA in 2004) and waste (NEMWA in 2008) subsequent to publication of the Policy. The Policy makes reference to a review of all existing legislation which will result in a single act regulating all waste and pollution matters.¹⁶⁶ However, to date there is no single piece of legislation that deals with all forms of pollution to air water and soil in an integrated fashion.¹⁶⁷ On 19 December 2006 a Draft National Environmental Management Waste Management Bill was published (and subsequently NEMWA), however Kotzé argues that the Bill did not do anything to address fragmentation and cannot be said to be the integrated legislative instrument envisaged by the Policy.¹⁶⁸

Despite the failures described above to pursue integration, some degree of integration has been achieved as a result legislative developments subsequent to the Policy, including pursuant to the Environmental Impact Assessment Regulations (EIA Regulations).¹⁶⁹ The EIA Regulations establish a uniform and consistent procedure for the applications for the various environmental authorisations applicable to NEMA, NEMWA NEMAQA.¹⁷⁰ Section 24 of NEMA read with the EIA Regulations set out the procedure pertaining to applications, processing and decision-making of environmental authorisations. A number of Norms and Standards have been

¹⁶⁵Kidd (note 37 above) 208.

¹⁶⁶The Policy (note 20 above) 5.

¹⁶⁷Kotzé (note 28 above) 11.

¹⁶⁸Kotzé (note 119 above) 55.

¹⁶⁹GNR 982 of 4 December 2014 as amended (hereafter EIA Regulations).

¹⁷⁰S38(2) of NEMAQA states that section 24 of NEMA applies to all applications for atmospheric emission licences, which are subject to an environmental impact assessment in terms of section 24 of NEMA, and both an applicant and the licencing authority must comply with that section and any applicable notice issued or regulation made in relation to that section. According to the List of Waste Management Activities that have, or are likely to have, a detrimental effect on the environment published under NEMWA (GN921 of 29 November 2013), A person who wishes to commence, undertake or conduct a waste management activity listed under Category A must conduct a basic assessment process, and a person who wishes to commence, undertake or conduct a waste management activity listed under Category B must conduct a scoping and environmental impact reporting process, set out in the EIA Regulations made under section 24(5) of NEMA.

promulgated under NEMWA which also provide uniformity in relation to waste management and are applicable nationwide.¹⁷¹

Building on the discussion in chapter 1, I elaborated on the concept of IPPC as a mechanism of regulating pollution by assessing all emissions or contaminants released into all environmental media (air, land, and water), in an integrated, holistic and inter-dependant manner. I argued that the Policy does not pursue the objectives of IPPC, but rather concentrates on waste minimisation and management, as per the environmental media. Some gains have been made towards IPPC including the EIA Regulations, various national Norms and Standards, and the use of co-operative governance, a concept that I will discuss further in chapter 3. However, the regulation of pollution in South Africa remains fragmented. I continue now in chapter 3 to discuss co-operative governance, a constitutional imperative used to co-ordinate the pollution related functions allocated to the spheres of government, and in so doing counter the difficulties posed by fragmentation.

¹⁷¹Waste classification and Management Regulations GNR634 of 23 August 2013; National Norms and Standards for the storage of waste GN926 of 29 November 2013; National Standards for the extraction, flaring or recovery of landfill gas GN924 of 29 November 2013; and National Standards for the scrapping or recovery of motor vehicles GN925 of 29 November 2013 promulgated under NEMWA.

Chapter 3

In this chapter, given the fragmented approach to pollution control illustrated by the discussion in chapter 1, I critique co-operative governance in the regulation of pollution necessitated by the division of competence across the 3 spheres of government and multiple departments within the 3 spheres. I do so by describing the provisions contained in NEMA, NEMWA, NEMAQA and NWA which facilitate co-operative governance. I then argue that co-operative governance is not the optimal strategy to achieve the integrated regulation of pollution. I propose a more centralised approach, which would be modelled on the one environmental system introduced in 2014 to achieve a more integrated regulation of mining activities.

During the apartheid era, environmental law and policy was administered by a highly centralised system of government where decision-making processes were technocratically driven, with a lack of transparency, accountability and public participation.¹⁷² With the advent of the Constitution, a de-centralised approach was introduced by a separation of authority into the legislative, executive and judicial branches, the rationale behind which is based on the theory that citizen's freedom can only be achieved through the division of power, because the centralisation of power can lead to abuse.¹⁷³ Section 40 of the Constitution divides government into national, provincial and local spheres 'which are distinctive, interdependent and interrelated'.¹⁷⁴ This division assigns legislative and administrative functions and powers to each sphere of government, thereby subjecting government to checks and balances to prevent the arbitrary exercise of power.¹⁷⁵

Schedule 4 of the Constitution has a significant impact on the division of competence in the area of environmental governance. Part A of Schedule 4 lists 'environment', 'pollution control', 'soil conservation', and 'regional planning and development' as

¹⁷²N. Rossouw & K. Wiseman 'Learning from the implementation of environmental public policy instruments after the first ten years of democracy in South Africa' (2004) 22(2) *Impact Assessment and Project Appraisal* 131 133.

¹⁷³P. Labuschagne 'The doctrine of separation of powers and its application in South Africa' (2004) 23(3) *Politeia* 84.

¹⁷⁴S 40 Constitution.

¹⁷⁵Labuschagne (note 173 above) 84.

functional areas of concurrent national and provincial legislative competence. In addition, a number of local government matters concerning environmental governance, including 'air pollution', 'stormwater management systems in built-up areas', 'water sanitation services limited to potable water supply systems and domestic waste-water and sewage disposal systems' listed in Part B of Schedule 4 fall within the competence of municipalities to the extent set out in sections 155(6)(a) and (7) of the Constitution.¹⁷⁶ Schedule 5 lists 'noise pollution' and 'refuse removal, refuse dumps and solid waste disposal' as functional areas of exclusive provincial legislative competence, with local government to the extent set out for provinces in section 155(6)(a).¹⁷⁷ These competencies are significant because the allocation of 'environment' as a concurrent competency means that both national and provincial authorities have powers to enact and administer laws to protect the environment. It has further been held that municipalities have a number of exclusive competencies in respect of the environment.¹⁷⁸ This division of competence creates a natural 'tension' between the autonomy of a particular sphere of government on the one hand, and the pursuit of a coherent environmental governance for South Africa.¹⁷⁹ Coherence in the context of the division of competence necessitates co-operative governance because each sphere must retain its individual character, but cannot function completely independently of the others.¹⁸⁰ This was reaffirmed in the matter of *Le Sueur v Ethekwini Municipality* where the view was expressed that the

¹⁷⁶Schedule 4 Constitution. Furthermore section 155 states the following:

"(6) Each provincial government must establish municipalities in its province in a manner consistent with the legislation enacted in terms of subsections (2) and (3) and, by legislative or other measures, must—

(a) Provide for the monitoring and support of local government in the province; and

(b) Promote the development of local government capacity to enable municipalities to perform their functions and manage their own affairs.

(7) The national government, subject to section 44, and the provincial governments have the legislative and executive authority to see to the effective performance by municipalities of their functions in respect of matters in Schedules 4 and 5, by regulating the exercise by municipalities of their executive authority referred to in section 156(1)."

¹⁷⁷Schedule 5 Constitution.

¹⁷⁸A. Du Plessis 'Some comments on the sweet and bitter of the national environmental law framework for 'Local Environmental Governance' (2009) 24 *SA Public Law* 56. *Le Sueur and Another v Ethekwini Municipality and Others* (2013) ZAKZPHC 6 (hereafter *Le Sueur*) para 40 stated 'Accordingly, I am satisfied that Municipalities are in fact authorized to legislate in respect of environmental matters to protect the environment at the local level...' *Maccsand (Pty) Ltd v City of Cape Town and Others* 2012 (4) SA 181 (CC).

¹⁷⁹L. Malan 'Intergovernmental relations and co-operative government in South Africa: The ten-year review' (2005) 24(2) *Politeia* 226 227.

¹⁸⁰E. Bray 'Co-operative governance in the context of the National Environmental Management Act 107 of 1998' (1999) 6 *SAJELP* 3.

Constitution establishes a unified, sovereign democratic state constituting national provincial and local spheres of governments that are allocated functional areas that are not contained in hermetically sealed, distinct and water tight compartments.¹⁸¹

The constitutional division of powers allocated amongst the spheres of government creates overlaps, conflict and divisions among the authorities.¹⁸² Fragmentation will always be a part of South African environmental governance, not only in relation to pollution, and it requires that measures be in place to overcome this.¹⁸³ In order for conflict to be avoided and for the spheres to work together, the administration and implementation of environmental legislation should be clearly regulated through co-operation and co-ordination.¹⁸⁴ In order to facilitate co-operation, section 41 of the Constitution establishes principles of co-operative government and intergovernmental relations. These principles require that all spheres of government and organs of state must exercise their powers and perform their functions in a manner that does not encroach on the jurisdiction of another sphere, whilst also co-operating with another in mutual trust and good faith.¹⁸⁵ Co-operative environmental governance is provided for in the regulation of pollution, contained in a number of provisions of NEMA, NEMWA, NEMAQA and the NWA.

Provisions for co-operative governance in NEMA:

The environmental management principles contained in section 2 apply throughout the Republic and to the actions of all organs of state (in all three spheres of government) that may significantly affect the environment. The principle provided for in section 2(4)(l) of NEMA requires that there must be intergovernmental co-ordination and harmonisation of policies, legislation and actions relating to the environment.¹⁸⁶ Chapter 3 of NEMA is dedicated to procedures for co-operative governance so as to operationalise the principle of co-ordination provided for in

¹⁸¹Le Sueur (note 178 above) para 20. T. Humby 'Localising environmental governance: The *Le Sueur* case' (2014) 17(4) *Potchefstroom Electronic Law Journal* 1660 1666.

¹⁸²Glazewski (note 18 above).

¹⁸³Kidd (note 37 above) 208.

¹⁸⁴C. Bosman, L Kotzé and W. du Plessis 'The failure of the Constitution to ensure integrated environmental management from a co-operative governance perspective' (2004) 12 *South African Public Law* 411 413.

¹⁸⁵S 41 Constitution.

¹⁸⁶S 2(4)(l) NEMA.

section 2(4)(l). Section 11 requires every national department listed in Schedule 1 as exercising functions which may affect the environment, and every provincial department responsible for environmental affairs, to prepare an environmental implementation plan within 5 years of the coming into operation of NEMA, and at intervals of not more than 5 years thereafter.¹⁸⁷ The purpose of the environmental implementation plan is to co-ordinate and harmonise environmental policies, plans, programmes and decisions of the various departments that exercise functions that affect the environment, across the spheres of government, and give effect to the principles of co-operative government in the Constitution.¹⁸⁸ The environmental implementation plan must contain a description of the policies, plans, and programmes that may significantly affect the environment, together with a description of how the relevant department intends to comply with the environmental management principles whilst executing those policies, plans and programmes.¹⁸⁹ Environmental implementation plans must be submitted to the Minister or MEC as the case may be.¹⁹⁰ Every organ of state must substantially comply with every function in accordance with the environmental implementation plan, and must report every four months on the implementation of the plan to the Director-General.¹⁹¹ In the event that an environmental implementation plan is not being complied with the Director-General may serve a written notice calling on the organ of state to take necessary specified steps to remedy the failure to comply.¹⁹² Every department listed in Schedule 2 must prepare an environmental management plan, but the provincial departments in schedule 2 are not required to do so.¹⁹³ The purpose of the environmental management plans is also to co-ordinate and harmonise environmental policies, plans, programmes and decisions of the various departments

¹⁸⁷S 11(1) NEMA National departments exercising functions which may affect the environment: Department of Environmental Affairs, Department of Rural Development and Land Reform, Department of Agriculture, Forestry and Fisheries, Department of Human Settlements, Department of Trade and Industry, Department of Water Affairs, Department of Transport, Department of Tourism, Department of Defence, Department of Public Enterprises, and Department of Public Works.

¹⁸⁸S 12 NEMA.

¹⁸⁹S 13 NEMA.

¹⁹⁰S 15 NEMA.

¹⁹¹S 16(1) NEMA.

¹⁹²S 16(2) NEMA.

¹⁹³S 11(2) NEMA National departments exercising functions that involve the management of the environment: Department of Environmental Affairs, Department of Water Affairs, Department of Mineral Resources, Department of Energy, Department of Rural Development and Land Reform, Department of Health, and Department of Labour.

that exercise functions that affect the environment, across the spheres of government, and give effect to the principles of co-operative government in the Constitution.¹⁹⁴ Environmental management plans must contain, inter alia, a description of the functions exercised by the relevant department in respect of the environment, a description of environmental norms and standards set or applied by the relevant department, and a description of arrangements or agreements made for the co-operation between other national departments where there is a bearing on environmental management.¹⁹⁵ An environmental management plan must be published in the Gazette within 90 days of submission to the minister or MEC as the case may be, and thereafter the plan becomes effective and must be adopted by the relevant national department.¹⁹⁶ Every organ of state must substantially comply with every function in accordance with the environmental management plan, and must report every 4 months on the implementation of the plan to the Director-General.¹⁹⁷ In the event that an environmental management plan is not being complied with the Director-General may serve a written notice calling upon the organ of state to take necessary specified steps to remedy the failure to comply.¹⁹⁸

Other provisions aimed at co-operation include the requirement that where there is a difference or disagreement concerning the exercise of any function which may significantly affect the environment, any Minister, MEC or Municipal Council must first consider conciliation,¹⁹⁹ and a matter may also be referred for arbitration.²⁰⁰ Provision is further made for an integrated authorisation to be issued upon agreement between the competent authorities.²⁰¹ Finally, the Minister and every MEC and Municipality may enter into environmental management co-operation agreements with any person or community for the purpose of promoting compliance with the principles contained in NEMA. These agreements must be entered into with the consent and agreement

¹⁹⁴S 12 NEMA.

¹⁹⁵S 14 NEMA.

¹⁹⁶S 15 NEMA.

¹⁹⁷S 16(1) NEMA.

¹⁹⁸S 16(2) NEMA.

¹⁹⁹S 17 NEMA.

²⁰⁰S 19 NEMA.

²⁰¹S 24L NEMA; s44 NEMWA; and s36 NEMAQA.

of The Minister, MEC, and every organ of state which has jurisdiction over any activity to which such co-operation agreement relates.²⁰²

Provisions for co-operative governance in NEMWA

Provincial departments responsible for waste management must prepare integrated waste management plans and submit same to the Minister for endorsement.²⁰³ Each municipality must also prepare an integrated waste management plan and submit it to the MEC for endorsement.²⁰⁴ The municipal plan must not be in conflict with the provincial plan.²⁰⁵ The Minister may require an industry waste management plan to be prepared and submitted in instances where an activity results in the generation of waste that affects more than 1 province or where an activity is conducted in more than 1 province.²⁰⁶ However, before taking a decision to approve the industry waste management plan, the Minister must consult every affected MEC.²⁰⁷

Section 44 provides for co-operative governance in waste management licence applications and requires that, for the purposes of issuing a waste management licence, the decision-making processes in NEMWA should be co-ordinated or consolidated with the decision-making process in NEMA, without whose authorisation, approval or consent, the activity may not commence, or be undertaken or conducted.²⁰⁸ In order to achieve co-ordination an integrated licence may be issued.²⁰⁹ NEMWA specifically provides that a waste management licence may be issued as part of a 'consolidated authorisation consisting of different authorisation issued under different legislation by the persons competent to do so, that have been consolidated into a single document in order to ensure that the condition that are imposed by each competent authority are comprehensive and mutually consistent'.²¹⁰

²⁰²S 35 NEMA.

²⁰³S 11(1) NEMWA.

²⁰⁴S 11(4) NEMWA.

²⁰⁵S 11(6) NEMWA.

²⁰⁶S 28(1) NEMWA.

²⁰⁷S 28(1A) NEMWA.

²⁰⁸S 44(1) NEMWA.

²⁰⁹S 44(2) NEMWA.

²¹⁰S 44(2)(b) NEMWA.

Provisions for co-operative governance NEMAQA

Section 14 of NEMAQA requires that each municipality and province appoint an air quality officer, together with a national air quality officer, responsible for co-ordinating matters pertaining to air quality management within the respective province and municipality. Section 15 states that each national department or province responsible for preparing an environmental implementation plan or environmental management plan in terms of NEMA, include therein an air quality management plan. Further, each municipality must include an air quality management plan in its integrated development as contemplated in Chapter 5 of the Municipal Systems Act 32 of 2000. Section 36 provides that where the Minister is the competent authority in terms of NEMA, NEMWA and NEMAQA, and integrated environmental authorisation may be issued.

Provisions for co-operative governance in NWA

With regards to issuing water use licences NWA states that, the Minister responsible for water affairs, or catchment management agency if the power has been delegated by the Minister, may promote arrangements with other organs of state to combine their respective licence requirements into a single licence requirement.²¹¹ When considering an application in terms of NWA, the Minister or catchment management agency may invite written comments from any organ of state which, or person who has an interest in the matter.²¹²

Provisions in the Intergovernmental Relations Framework Act

In addition to the above, the provisions of the Intergovernmental Relations Framework Act 13 of 2005 (IRFA) apply to the extent that they establish mechanisms for co-operation, giving effect to the principles of co-operative governance contained in the Constitution. The IRFA facilitates the establishment of national, provincial and municipal intergovernmental consultative forums to provide an opportunity to discuss and consul on any matters of mutual interest.²¹³

²¹¹S 22(4) NWA.

²¹²S 41(2)(c) NWA.

²¹³S 9 – s 29 IRFA.

Analysis

Although co-operative governance is comprehensively provided for in South African environmental legislation, Kotzé argues that the environmental governance regime remains fragmented, and that government does not fully appreciate the benefits that co-operative governance may have as a strategy to further integration.²¹⁴ Kanyane argues that weak intergovernmental relations is often a problem of capacity and management, not the inadequacy of government structures and policy. The argument then follows that many agreements and policies can be in place which oblige co-operation between departments, however, how successful those agreements prove to be and the level of actual co-operation achieved, will be a direct result of the efforts of the implementing officials.²¹⁵ As such, co-operative governance is not always experienced 'on the ground'.²¹⁶ Reasons for this include that government officials amongst the different spheres do not always agree with one another as to the interpretation of the legislation or allocation of roles and responsibilities, because government officials find it too cumbersome and time consuming to co-operate with each other, because of a lack of communication, because decisions and initiatives are taken independently by different departments, because of a lack of capacity, or because there is a separation and distinction between development, economic and environment issues and are accordingly dealt with separately.²¹⁷

In light of the structure of government divided into 3 distinct yet interrelated spheres, in order to achieve the integrated and efficient regulation of pollution, some form co-ordination and co-operation between the spheres is required.²¹⁸ Despite the challenges described above, co-operative governance could foster healthy debate and shared resources and capacity in order to resolve a matter.²¹⁹ However, I contend that given its many challenges, co-operative governance is not the optimal strategy to utilise to achieve integration in the context of pollution regulation. I propose a more

²¹⁴Kotzé (note 28 above) 28.

²¹⁵M. Kanyane 'Interplay of intergovernmental relations conundrum' State of the Nation 2016: Who is in charge? 95.

²¹⁶W. Du Plessis 'Legal mechanisms for co-operative governance in South Africa: Successes and failures' (2008) 23 *SA Public Law* 87 109.

²¹⁷W. Du Plessis (note 216 above) 106.

²¹⁸Humby (note 181 above) 1667.

²¹⁹Malan (note 179 above) 229.

centralised approach, which would be modelled on the one environmental system introduced in 2014 to achieve the more integrated regulation of mining activities.²²⁰

Prior to the one environmental system, in order to conduct mining activities one needed a mining permit from the Department of Mineral Resources, a water use licence from the Department of Water and Sanitation, a waste management licence and an environmental authorisation from the Department of Environmental Affairs.²²¹ According to Humby:

The practical outcome of the fragmented model was that mining proponents had to obtain multiple authorisations and interested and affected parties had to spread themselves across multiple participation processes. The many contradictions arising from the misalignments included authorisation with conflicting conditions; misaligned timelines with prospecting and mining rights holders tinning the risk of losing their licenses if they waited for the outcome of environmental authorisation processes; perceptions of different standards of procedural and substantive integrity; and futile appeal processes as the login of appeals in terms of environmental laws did not suspend mining operations.²²²

The one environmental system is defined in NEMA as an agreement reached between the Ministers responsible for environmental affairs, mineral resources and water affairs with respect to mining, which entails that all environmental related aspects would be regulated through one environmental system with NEMA as the principal act.²²³ In terms of this agreement the Minister responsible for environmental affairs sets the regulatory framework and norms and standards, whilst the Minister responsible for mineral resources implements the provisions of NEMA and subordinate legislation as far as it relates to prospecting, exploration, mining or operations.²²⁴ The practical outcome of the one environmental system is that the Minister of Mineral Resources issues a mining right, environmental authorisation, waste management licence, and water use licence for a single mining operation.²²⁵

²²⁰National Environmental Management Laws Amendment Act 25 of 2014.

²²¹T. Humby 'One environmental system: aligning laws on the environmental management of mining in South Africa' (2015) 33(2) *Journal of Energy & Natural Resources Law* 110 116.

²²²Humby (note 221 above) 116.

²²³S 50A(2)(a) NEMA.

²²⁴S 50A(2)(b) NEMA.

²²⁵S 50A NEMA.

In this chapter I described the provisions of co-operative governance contained in NEMA, NEMWA, NEMAQA and NWA, which is necessitated by the divisions of competence across the 3 spheres of government. Despite being a constitutional imperative and extensively provided for in legislation, I argued that co-operative governance is not the optimal strategy to achieve the integrated regulation of pollution, and as such the regulation of pollution remains fragmented. I proposed a more centralised approach modelled on the one environmental system introduced in 2014 to achieve a more integrated regulation of mining activities. I continue in chapter 4 to discuss the future possibilities for integration in the regulation of pollution in South Africa, and how I envisage a more centralised approach for pollution control could look like.

Chapter 4

In this dissertation I asked the question whether South African is shifting towards an integrated pollution prevention and control regime to prevent pollution and ecological degradation. In response, there has been a shift towards IPPC, but a limited one. I began in chapter 1 by describing that pollution is regulated by a fragmented regime using multiple definitions of pollution, duties of care, and environmental authorisations. The regime is made up of numerous Acts, which are administered by many departments across the 3 spheres of government. This fragmentation results in a confusing, overlapping, and ultimately ineffective governance effort.²²⁶ In chapter 2 I described IPPC as an approach to achieve the efficient and integrated regulation of pollution in terms of the receiving environmental media, the legislation regulating pollution, and the authorities administering the legislation. Acknowledging the fragmentation, duplication, and lack of co-ordination in the regulation of pollution, I discussed the Policy that introduced IPPC in South Africa, albeit in the form of Integrated Pollution and Waste Management. I sought to demonstrate that the Policy concentrates on waste minimisation, and that establishing an integrated approach to pollution regulation was not, and in light of subsequent legislative developments, is still not a priority. Given the division of legislative and administrative powers and functions relating to the regulation of pollution between the spheres of government, in chapter 3 I discussed co-operative governance as the strategy employed to co-ordinate the regulation of pollution. While co-operative governance is firmly entrenched in the Constitution and extensively provided for in NEMA, NEMWA, NEMAQA and NWA, I argued that co-operative governance is not the optimal strategy to achieve the integrated regulation of pollution. As an alternative I proposed a more centralised system akin to the one environmental system regarding introduced in 2014 to achieve a more integrated regulation of prospecting, exploration and mining activities.

The regulation of pollution remains fragmented in relation to the environmental media specific legislation and the multiple government departments across the spheres which administer the legislation. However there has been a shift towards integration

²²⁶Kotzé (note 28 above) 18.

by establishing a uniform and consistent procedure for applications, processing and decision-making of the various environmental authorisations in terms of the EIA Regulations. This is supplemented by providing for an integrated authorisation to be issued upon agreement between the relevant competent authorities in specified circumstances where multiple environmental authorisations are required to be issued by multiple authorities, in relation to a single site. Integration is also supported by the environmental management principles which serve as guidelines for the exercise of any function or decision concerning the protection of the environment by any organ of state. In addition thereto, co-operative governance has also contributed to the limited shift towards IPPC.

I do however contend that a greater level of integration is required for the effective regulation of pollution that appreciates the potential for pollutants to be transferred between environmental media of land, air and water. Should there be major reforms in South Africa towards IPPC in the future, considering the structure of government, it is unlikely that reforms would take the shape of a single authority issuing a single authorisation. I align myself with Kotzé who says that such a shift is improbable due to the political, legal and administrative implications as 'mandates will certainly be upset, structures will be amended and processes reallocated and reinvented'.²²⁷ Kotzé accordingly suggests a progressive and gradual implementation and achievement of IPPC in South Africa.²²⁸ With Kotzé's concerns in mind, I advocate for an integrated pollution control regime where pollution into all the environmental media generated by an industry are regulated as a whole. I do not propose complete legislative reform, nor the complete removal of functions and powers from the different spheres as these changes are highly unlikely. Instead, since provision is already made in NEMA, NEMWA, NEMAQA and NWA to issue an integrated authorisation where possible, the approach I have in mind is to take this a step further. Emulating the one environmental system, I recommend identifying polluting industries and regulating them with a single authorisation issued by a single authority. Perhaps this could be done on a tiered basis where 'the most polluting industries', for example coal-fired power stations, foundries, refineries, paper production, are

²²⁷Kotzé (note 119 above) 55.

²²⁸Kotzé (note 119 above) 60.

allocated to a national sphere to issue an integrated environmental authorisation and regulate. Similarly, specified industries are allocated at a provincial sphere, and municipal sphere to issue an integrated environmental authorisation and regulate. This phased approach I proposed is based on the opinion that effectively regulating 'the most polluting industries' would have a significant impact on the protection of the environment, but also acknowledging that other industries have the potential to cause pollution and require regulation.

The approach I propose would entail the following for example, a developer decides to build a coal fired power station which is considered to be a 'most polluting industry' which falls within the jurisdiction of a national sphere. The developer submits one application, to one department in terms of which the potential consequences and pollution impacts upon the environment from the entire development are considered. Upon the satisfaction of the department a single authorisation is issued, containing conditions subject to which the activity must be conducted, pertaining to all the receiving environmental media.

I argue that this approach would still require a certain level of co-operation between spheres, but the roles and responsibility for each department and sphere would be delineated more clearly. I argue that the administrative, compliance and enforcement processes would be simplified and it would reduce the burden on government resources. From the perspective of the developer I argue they would benefit from a simplified procedure and it would be more economical in that it releases more resources to investigate and implement alternative cleaner technologies, reducing the volumes and concentration of pollutants into the environment, and promoting an environment that is not harmful to health and well-being.

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