

https://dspace.org/

Evaluating the effectiveness of South Africa's air quality legislation as a climate change mitigation tool

Mlapisane, Simelweyinkosi

2023

University of the Witwatersrand, Johannesburg

https://hdl.handle.net/10539/38743

Mlapisane, Simelweyinkosi. (2023). Evaluating the effectiveness of South Africa's air quality legislation as a climate change mitigation tool [Master's dissertation, University of the Witwatersrand, Johannesburg]. WireDSpace. https://hdl.handle.net/10539/38743

Downloaded from a DSpace repository. https://dspace.org/

Evaluating the effectiveness of South Africa's air quality legislation as a climate change mitigation tool.

by

SIMELWEYINKOSI MLAPISANE

Supervisor: Lisa Chamberlain

Submitted in partial fulfilment of the requirements for the degree of
Master of Laws by Coursework and Research Report
at the University of the Witwatersrand, Johannesburg

Date: 30 January 2023

DECLARATION

I declare that this research is my own unaided work. It is submitted in partial fulfilment of the requirements for the degree of Master of Laws (by Coursework and Research Report) at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

I have submitted my research through TurnItIn and have attached the report to my submission.

Word count: 10 146



SIGNATURE

2507568
STUDENT NUMBER

30 January 2023
DATE

TABLE OF CONTENTS

ABSTRACT……

1. INTRODUCTION…… 5
2. BACKGROUND OF CLIMATE CHANGE…… 6
3. CURRENT REGULATORY FRAMEWORK ON AIR QUALITY……... 9
4. ANALYSING THE EFFECTIVENESS OF THE AIR QUALITY REGULATORY FRAMEWORK…… 13
5. RECOMMENDATIONS……... 33
6. CONCLUSION …….. 37
7. BIBLIOGRAPHY

ABSTRACT

The global community is still grappling with the climate change crisis. Due to the intrinsic relationship between climate change and air quality, South Africa is addressing climate change through its air quality laws. This report demonstrates how these laws have been incorporated in a climate change context. It also evaluates whether the air quality laws have been robust enough to combat climate change. The report further argues that in practice, South Africa has fallen short, mainly due to a badly designed legal framework that has many loopholes, which has led to insufficient implementation. It goes on to make five recommendations on strengthening the legal framework to make it more effective. This report recommends that specific climate change legislation should be enacted; that South Africa should revisit and reform its current air quality laws; that the national government should strengthen the local government's capacity to improve air quality; that there should be more cooperation between government departments; and that priority area management plans should contain penalties.

1. Introduction

Temperatures on earth have warmed to unprecedented levels.[1] Globally, it has been established that this warming is primarily due to anthropogenic industrial activities that cause greenhouse gas (GHGs) emissions.[2] Lehman calls climate change a human crisis, as it is induced by human activities such as GHG emissions that have brought the climate to the current exigency that it is in.[3]

Climate change is a significant shift in the status of the climate, whose damage becomes noticeable after a considerable period.[4] It is among the biggest threats to the ecosystem, economy, human life[5] and environment through warmer temperatures, water shortage and the frequency of natural disasters.[6]

This has necessitated the implementation of urgent and effective mitigation measures to reduce the rising GHG atmospheric concentrations.[7] 'Mitigation' has been defined in this report as the actions that are taken to reduce GHGs that permeate the atmosphere.[8]

South Africa's economic ventures, such as generating electricity from coal,[9] have earned it 12th place in global GHG emissions.[10] It is the only African country among

---

*For the purposes of this study it is acknowledged that adaptation forms part of mitigation but exceeds the scope of this research report. Mitigation has been selected as it is a more viable option in the South African context with limited financial resources. As a developing country, South Africa will benefit more from reducing climate change than adapting to its impacts.

[1] A Gilder & E Swanepoel 'Climate Change' in HA Strydom, ND King & F Retief (eds) *Environmental Management in South Africa* (2020) 735, 739.

[2] Ibid 740.

[3] K Lehmann 'South Africa's Climate Change Commitments and Regulatory Response Potential' in Humby, Kotze, Rumble & Gilder (eds) *Climate Change Law & Governance in South Africa* (Original Service 2016) 8,1, 8-1.

[4] M vd Bank & J Karsten 'Climate Change and South Africa: A Critical Analysis of *Earthlife Africa Johannesburg and Another v Minister of Energy and Others 65662/16 2017* Case and the Drive for Concrete Climate Practices' (2019) 13 *Air, Soil and Water Research* 1,2.

[5] Gilder & Swanepoel (note 1 above) 736.

[6] *Earthlife Africa Johannesburg v Minister of Environmental Affairs* 2017 (2) All SA 519 (GP) para 82.

[7] Gilder & Swanepoel (note 1 above) 739.

[8] A du Plessis & LJ Kotze 'The heat is on: Local Government and Climate Governance in South Africa' (2014) 58 *Journal of African Law* 145,152.

[9] Ibid.

[10] <https://www.dailymaverick.co.za/article/2021-09-29-south-africa-takes-bolder-steps-to-reduce-emissions-but-are-they-enough/>.

the top 20 emitting countries worldwide.[11] Its position and activities automatically confer a duty on South Africa to take adequate regulatory action, to reduce its GHG emissions.[12] The failure to take this action threatens to perpetuate the country's negative climate change impacts.[13]

Notwithstanding, South Africa does not yet have specific climate change legislation but relies on its air quality legal framework.[14] This report evaluates South Africa's response to climate change, focusing mainly on whether its air quality regulatory framework has sufficiently encompassed climate change.

The report reveals how limited the air quality regulatory framework is in addressing climate change. However, there is a Climate Change Bill ('the Bill') that seeks to address the broader aspects of climate change issues.[15] The report will also analyse the Bill's provisions to determine if they adequately deal with climate change.

The report has four parts, with part 1 being the introduction. The background of climate change and the link between climate change and air quality is discussed in part 2. South Africa's air quality regulatory framework is discussed in part 3. Part 4 presents the analysis of the effectiveness of the South African air quality regulatory framework and makes recommendations for reform. Part 5 is the conclusion.

2. Background of Climate Change

This section examines the background of climate change and its relationship with air quality. It proceeds on the premise that they are intertwined and that climate change cannot be reduced if both are not addressed.

[11] Gilder & Swanepoel (note 1 above) 764-765.
[12] H Papacostantis 'South Africa's Journey to Climate Change Regulation: Earthlife Africa Johannesburg v Minister of Environmental Affairs (2017) 2 All SA 519 (GP)' (2021) 24 *Potchefstroom Law Journal* 1, 3.
[13] Ibid.
[14] du Plessis & Kotze (note 8 above) 162-163.
[15] Climate Change Bill 2022 s 2.

Climate change is mainly caused by the emission of GHGs that stimulate the earth to absorb more energy and increase the earth's temperatures in a process called global warming.[16]

South Africa's heavy reliance on fossil fuels for electricity generation is the leading cause of its significant GHG emissions.[17] In 2017, the South African Department of Environmental Affairs (now the Department of Forestry, Fisheries and the Environment) (DEFF) published the National Greenhouse Gas Emission Reporting Regulations[18] to reduce these dangerous emissions. The Regulations identify Carbon Dioxide (CO2), Methane (CH4), Nitrous Oxide (N2O), Sulphur Hexafluoride (SF6), Perfluorocarbons (PFCs) and Hydrofluorocarbons (HFCs) as the leading GHGs that cause global warming.[19]

The most emitted GHG in the transport sector is CO2 through vehicle exhaust emissions.[20] Those emissions position the transport sector as the country's second-largest GHG emitter, with 10.8 per cent of emissions in 2015.[21] The majority of the emissions in this sector are from road transport due to vehicle exhausts emitting carbon dioxide.[22]

Lastly, domestic fuels also account for significant emissions by using coal and firewood in the townships.[23] For example, South Africa's largest township of Soweto exceeds the World Health Organisation's (WHO) emission standards by more than 100%.[24] Soweto's use of coal and firewood for domestic energy dates to the apartheid era when

[16] MR Grossman 'Climate Change and the Individual' (2018) 66 *American Society of Comparative Law* 345,346.
[17] T Murombo 'South Africa's Energy Mix-Towards a Low Carbon Economy' in Humby, Kotze, Rumble & Gilder (eds) *Climate Change Law & Governance in South Africa* (Original Service 2016) 18-1,18-3.
[18] Department of Environmental Affairs *National Greenhouse Gas Emission Reporting Regulations 2017*, GN275 GG40762 (3 April 2017).
[19] Ibid s 1 (1).
[20] Department of Transport Green Transport Strategy for South Africa (2018-2050) 8.
[21] Ibid.
[22] Ibid.
[23] P Steyn 'The Lingering Environmental Impact of Repressive Governance: The Environmental Legacy of the Apartheid Era for the New South Africa' (2005) 2 *Globalisations* 391,396.
[24] Ibid.

it had no electricity.[25] Its low-income demographic residents continue to use coal and firewood to reduce energy costs.[26]

The impacts of climate change have already been primarily felt in South Africa.[27] For instance, the April 2021 Cape Town wildfires will likely become commonplace.[28] Also, being a water-scarce country has made South Africa succumb to severe droughts that have caused the extinction of some of its biodiversity.[29] These negative impacts are likely to increase if sufficient timeous interventions are not made.[30]

Again, Cape Town suffered the impacts of climate change when drought caused a water shortage in 2018.[31] It almost entirely ran out of its water supply until unexpected winter rainfall averted the catastrophe.[32] Had it not rained, the worst water crisis in the country would have been witnessed, leaving millions of people stranded.[33] Likewise, the Eastern Cape has been hard hit by ongoing climate change-induced drought for several consecutive years.[34] Over time, more impacts, such as warmer temperatures, reduced food security and low economic growth, are expected.[35]

Climate change also caused floods in Kwa-Zulu Natal and Eastern Cape in April 2022.[36] The resultant loss of over 400 lives due to the floods in Kwa-Zulu Natal attests to climate change-induced extreme weather events.[37] The same province had similar floods in 2019, but their impact was less damaging compared to 2022.[38] This shows

---

[25] Steyn (note 23 above) 396.
[26] Ibid.
[27] A du Plessis 'Climate Change, Public Trusteeship and the Tomorrows of the unborn child' (2015) 31 *South African Journal of Human Rights* 269, 271.
[28] <https://www.citizen.co.za/news/south-africa/how-climate-change-helped-fuel-cape-town-fires/>.
[29] Papacostantis (note 12 above) 12.
[30] Ibid 11.
[31]<https://www.downtoearth.org.in/news/climate-change/cape-town-day-zero-drought-risk-lurking-around-the-corner-study-74260>.
[32] Ibid.
[33] Ibid.
[34] M Dyosi, AM Kalumba, HB Magagula, L Zhou & IR Orimiloye 'Drought conditions appraisal using geoinformatics and multi-influencing factors' (2021) 193 *Environmental Monitoring and Assessment* 1,2.
[35] Papacostantis (note 12 above) 12.
[36]<https://www.imperial.ac.uk/news/236457/climate-change-made-heavy-rain-behind/>.
&<https://www.dailymaverick.co.za/article/2022-05-05-eastern-cape-farmers-take-stock-after-devastation-caused-by-floods/>.
[37] Ibid.
[38] Ibid.

that the number of mortalities and infrastructural damage from climate change events increases as climate change worsens.[39]

Having established the need to mitigate climate change, one of the ways in which South Africa can act is through its legal framework. Therefore, this report turns to examine the air quality regulatory framework in South Africa.

3. Current Regulatory Framework on Air Quality

A comprehensive and detailed discussion of the air quality regulatory framework is beyond the scope of this report. However, the section below provides an overview of the analysis in part 4.

The key international treaty regulating climate change is the United Nations Framework Convention on Climate Change, also known as the (UNFCCC) of 1992.[40] Its goal was to prevent anthropogenic emission activities that harm the climate.[41] The UNFCCC divided developed and developing countries into two categories, classifying developed countries as annexure 1 and developing countries as Annexure 2.[42]

Annexure 1 countries had reporting and emission reduction obligations.[43] Whereas South Africa and other annexure 2 developing countries only had a general duty to reduce climate change.[44] Notwithstanding, South Africa volunteered to submit reduction targets as it took cognisance of its high emissions.[45]

Subsequently, the Kyoto Protocol to the UNFCCC (Kyoto Protocol) was enacted in 1997.[46] The Paris Agreement to the UNFCCC (Paris Agreement) was introduced in

[39]<https://amp.theguardian.com/environment/2022/may/13/south-africa-floods-climate-crisis-global-heating>.
[40] M Kidd *Environmental Law* 2 ed (2011) 60.
[41] United Nations Framework Convention on Climate Change (adopted 9 May 1992) Article 2.
[42] (note 41 above) Annexure 1.
[43] Ibid Article 4 (2).
[44] Ibid Article 4 (1).
[45] C Klausbruckner, H Annegarn, LRF Henneman & P Rafaj 'A policy review of synergies and trade-offs in South African Climate Change Mitigation and Air Pollution Strategies' (2016) 57 *Environmental Science & Policy* (2016) 70,70.
[46] Kyoto Protocol to the UNFCCC (adopted 11 December 1997).

2015.[47] It targeted maintaining the average global temperature increases to below 2 degrees Celsius and ideally at 1.5 degrees Celsius.[48] The agreement also had Nationally Determined Contributions (NDCs) for each member country to account for its efforts.[49] Annexure 1 countries were also to support developing countries' mitigation efforts financially.[50]

In addition, the Constitution of the Republic of South Africa, 1996 ('the Constitution') also addresses climate change in section 24, which states that:

'Everyone has the right to

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

Section 24 (a) and (b) (i) of the Constitution addresses climate change by conferring the inherent guaranteed right to an environment that enhances one's well-being to all people in South Africa. They also encumber the government to sufficiently protect the environment to benefit future generations.[51]

The Constitutional directive to enact environmental legislation created the National Environmental Management Act 107 of 1998 (NEMA).[52] The NEMA has national environmental management principles that guide state decisions concerning the environment[53] and influence other subsequent environmental legislations.[54]

[47] Paris Agreement to the United Nations Framework Convention on Climate Change (adopted 12 December 2015).
[48] Ibid Article 2 (1) (a).
[49] Ibid Article 4 (2).
[50] Ibid Article 4 (5).
[51] *HTF Developers v Minister of Environmental Affairs and Tourism* 2006 (5) SA 512 para 17.
[52] Constitution s 24 (b).
[53] NEMA s 2 (1) (c).
[54] NEMAQA s 5 (2).

The National Environmental Management Air Quality Act 39 of 2004 (NEMAQA) regulates air quality. The NEMAQA and the NEMA are specific environmental management Acts,[55] with the NEMAQA being the only legislation addressing GHG emissions.[56]

The NEMAQA introduces several regulatory tools.[57] First, the Minister of Environmental Affairs (as the portfolio was then called), identified activities whose atmospheric emissions significantly harmed the environment.[58] These tools were necessary, given the extent of the environmental harm caused by those emissions.

Another regulatory tool is a compulsory licensing system for listed activities.[59] A license applicant must inform affected communities of its application through a local newspaper.[60] Furthermore, the Minister announced substances whose emissions should be reduced to minimise their harmful effects.[61] She then lowered the minimum emission standards (MES) from 3 500Mg to 500Mg for sulphur dioxide emissions, to address their intensity.[62]

However, Eskom and Sasol perceived the amended MES as threatening their activities and opposed them.[63] The Minister relented through an amendment of 1000Mg for existing plants, with 500Mg only applicable to new plants.[64] This was treading on thin ice, seeing that the country's MES standards are already lower than India, China and the WHO.[65]

[55] NEMA s 1 (1).
[56] vd Bank and Karsten (note 4 above) 6.
[57] Klausbruckner et al (note 45 above) 71.
[58] Department of Environmental Affairs *List of activities which result in atmospheric emissions which have or may have a significant detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage* GN893 GG37054 (22 November 2013).
[59] NEMAQA s 22.
[60] NEMAQA s 38 (3).
[61] NEMA s 24.
[62] (note 58 above) s 20 (1).
[63] R Euripidou, J Irlam, T Lloyd, D Hallowes & N Loser 'The Minimum Emission Standards (MES) and the sabotage of public health' (2022) *Clean Air Journal* 1, 2.
[64] Department of Environmental Affairs *Amendment of the Listed Activities and Associated Minimum Emission Standards Identified in terms of Section 21 of National Environmental Management: Air Quality Act, 2004 (Act no. 39 of 2004)* GN 421 GG 43174 (27 March 2020) s 2.
[65] Euripidou et al (note 63 above) 2.

These exemptions were made because the Minister concurred that Eskom and Sasol needed more financial capacity to comply with the new standards.[66] Her leniency caused Eskom's continued exceedances.[67] This signifies the lack of willingness by Eskom to subject itself to the MES but expecting more exceptions.[68]

Finally, NEMAQA has criminal sanctions to deter its violations[69] with maximum penalties of five million rand or five years in prison for first offenders.[70] Repeat offenders are fined up to ten million rand or ten years in prison or both.[71] However, some have doubted their effectiveness, as the South African criminal process has delays and a few convictions.[72]

Progress was made when the then Minister of Environmental Affairs announced the Climate Change Bill's drafting in May 2018.[73] It addressed climate change more in-depth[74] and was published for public comments on 8 June 2018.[75] Despite its urgency, the Bill was only tabled before the South African National Assembly almost four years later in 2022.[76] The cause of the delay in passing the Bill is the government's lack of political will.[77]

The Bill's importance is its coordination of South Africa's response to climate change by the economic sector, government as well as members of the community at large.[78] It also upholds the country's international obligations[79] and aspires to protect the

[66]<https://www.dffe.gov.za/mediarelease/creecy_emmissionstandards_amendmentpromulgated_sulpurdioxide_combustioninstallation>.
[67]<https://www.dailymaverick.co.za/opinionista/2022-03-21-if-barbara-creecy-appeals-against-the-deadly-air-judgment-it-will-not-be-a-good-look-for-government/>.
[68] Euripidou et al (note 63 above) 3.
[69] NEMAQA s 51.
[70] Ibid s 52 (1).
[71] Ibid.
[72] T Murombo & I Munyuki 'The effectiveness of Plea and Sentence Agreements in Environmental Enforcement in South Africa' (2019) 22 *Potchefstroom Electronic Law Journal* 1,4.
[73] <https://www.southafricanews.net/news/257282816/south-africa-working-on-climate-change-bill>.
[74] vd Bank & Karsten (note 4 above) 6.
[75]<https://www.dffe.gov.za/mediarelease/molewa_publishes_nationalclimatechangebillforpubliccomment>.
[76]<https://cer.org.za/news/cer-welcomes-progress-of-climate-bill-in-parliament-calls-for-robust-climate-law>.
[77]O Rumble 'Facilitating African Climate Adaptation Through Framework Laws' (2019) *Carbon and Climate Law Review* 237,240.
[78] Climate Change Bill s 2 (a).
[79] Ibid s 2 (c).

environment to benefit present and future generations.[80] This creates concerted effort, which is more effective than individual effort.

It is evident that, on paper, the South African air quality legal framework has taken commendable strides to align its laws with international instruments.[81] The country's voluntary commitment to the Paris Agreement's stricter reporting measures reflects the leadership that it seeks to display in the continent.[82] However, the true test lies in whether its enforceability and implementation actions are robust enough to attain the desired results.[83]

Having considered the legislation that South Africa has in place to improve air quality, the following section will analyse its effectiveness.

4. Analysing the Effectiveness of the Regulation of Air Quality

This section analyses the application of the legal framework of air quality. It starts by conducting a case analysis of landmark cases and then discusses South Africa's current position. The different implementation measures and efforts made countrywide are then discussed. It concludes with an assessment of whether the provisions of the Climate Change Bill bring about more protection against climate change than the current air quality regulatory framework.

4.1 *Application of Air Quality Laws by South African Courts*

The air quality legal framework seeks to mitigate climate change. This section analyses how South African courts have interpreted air quality laws. The air quality laws were contentious in two crucial court cases, as will be shown. These cases are *Earthlife Africa Johannesburg v Minister of Environmental Affairs*[84] and *Trustees for*

[80] Climate Change Bill 2 (f).
[81] A Averchenkova, KE Gannon & P Curran (2019) 'Governance of climate change policy: A case study of South Africa' 1,23.
[82] Ibid.
[83] Ibid.
[84] Note 6 above.

the time being of Groundwork Trust v The Minister of Environmental Affairs,[85] which are discussed in detail below.

4.1. *Earthlife Africa Johannesburg v Minister of Environmental Affairs*

Environmental authorities only assessed the impact of economic developments on the environment and air pollution before granting authorisation,[86] even when a project could impact climate change. This practice catalysed *Earthlife Africa v Minister of Environmental Affairs* (2017) 2 All SA 519 (GP), also known as the (*Thabametsi* case).

In this case, Thabametsi Power Company (Pty) Ltd (Thabametsi) was granted authorisation by the Chief Director of Environmental Affairs to build a power station in Lephalale, a water-scarce area.[87] An environmental impact assessment precedes the application by outlining the project's likely environmental impacts.[88] That impact assessment formed the gist of this case. The court had to determine whether a climate change impact assessment of the project should have been included.[89]

The environmental impact assessment is mandatory for a listed activity,[90] as the activity has significant adverse environmental impacts. Upon receipt of such application, the authorities are to consider air pollution, environmental impacts or other relevant factors of the project.[91] However, in this case, the applicants argued that a climate change impact assessment was required before granting authorisation,[92] while the respondents denied the link[93] and accused the Applicants of unilaterally extending the law.[94]

[85] *The Trustees of Groundwork v The Minister of Environmental Affairs* (unreported case number: 39724/2019) 2022 ZAGPPHC 2 (18 March 2022).
[86] NEMA s 24O (1).
[87] Note 6 above 2.
[88] Ibid 6.
[89] Ibid 12.
[90] NEMA s 24O.
[91] NEMA s 24O.
[92] Note 6 above 5.
[93] Ibid 16.
[94] Ibid.

A climate change impact assessment's vitality is scrutinising a project's contribution to climate change.[95] It also examines the project's climate change resilience and the mitigating steps that the polluting party would take.[96] However, Thabametsi did not want to be tied down to such a commitment as their argument was motivated by profit, and they downplayed the relevance of climate change. Notwithstanding, the court agreed with the necessity of an impact assessment of climate change.[97] Rumble and Summers also share the court's sentiments on its essence.[98]

Subsequently, Thabametsi conducted the climate change impact assessment, which confirmed that its operations would heighten GHG emissions.[99] The assessment also projected that the power station would worsen the current water shortage.[100] These predictions corroborate opposition to the South African authorities' authorisation of new coal mines, while the rest of the world is turning to cleaner and renewable energy.[101] This translates to South Africa going against the tide to the detriment of its population and the environment.

Despite its shortcomings, the Thabametsi climate change impact assessment proved useful, as it revealed the peril of the construction project. Including a climate change impact assessment has progressed climate change mitigation in South Africa.[102]

This is a landmark case in climate change jurisprudence, as it shows that any development should consider climate change.

[95] Note 6 above 91.
[96] Ibid 6.
[97] Ibid 119.
[98] O Rumble & R Summers 'Climate Change Litigation' in Humby, Kotze, Rumble & Gilder (eds) *Climate Change Law & Governance in South Africa* (Original Service 2016) 6-1, 6-18.
[99] Savannah Environmental (2017) 'Thabametsi Power Station near Lephalale: Climate Change Study and Palaecological Impact Assessment' 30.
[100] Ibid 27.
[101] <https://www.miningreview.com/products-services/thabametsi-climate-impact-assessment-reveals-greenhouse-gas-emissions/>.
[102] vd Bank & Karsten (note 4 above) 9.

4.1.2 *The Trustees for the time being of Groundwork Trust v The Minister of Environmental Affairs*

In the case of *The Trustees of Groundwork v The Minister of Environmental Affairs*[103] (*Deadly Air* case), the meaning of section 20 of NEMAQA was in dispute.[104] The section states that the Minister may establish regulations in a Priority Area to guide the implementation of the Priority Area Management Plan.[105] An area is a priority area if the Minister believes that the air pollution in the area exceeds or may exceed air quality standards.[106]

However, the Minister did not publish the required regulations as she interpreted the word 'may' as giving her discretion.[107] She refused to publish them as she believed sufficient measures already existed to safeguard the environment.[108] This stance contradicted her concession that the ambient air quality in the Highveld Priority Area (HPA) exceeded the National Ambient Air Quality Standards and harmed human health.[109]

The Minister's stance fuelled the prejudice against the residents of the HPA, who continued to inhale the dangerous GHG substances.[110] Her refusal violated their right to an environment that promotes their well-being and health.[111] This is despite clear evidence submitted to the Minister on the resultant illnesses and deaths from inhaling these toxic substances.[112] The Minister's conduct defied the will of the very people that she promised to serve when she took office.

This impasse shows the detriment caused by the ambiguity of the South African air quality legislation, leading to different interpretations. Had the word 'may' not been in the provision, the Thabametsi case would have been avoided. Provisions such as

[103] Note 85 above.
[104] Ibid 11.2.
[105] NEMA s 20.
[106] NEMAQA s 18.
[107] Note 85 above 134.
[108] Ibid 59.5.
[109] Ibid 153-154.
[110] Ibid 153.
[111] Ibid 155.
[112] Ibid 59.5.

section 20 of NEMAQA are unclear on whether the Minister is obliged to publish regulations.[113] Given the trend of inaction by the government on important matters, the Minister's conduct comes as no surprise.

The applicants rightfully argued that without regulations, the purpose and implementation of the HPAMP were defeated, as most leading polluters would not comply voluntarily.[114] The absence of punitive measures was a contributory factor to the woes of the HPAMP. Leaving room for discretion in the HPAMP to major polluters, set it up for failure, as they were the cause of the priority area declaration.

Additionally, the HPAMP needed to be substantially improved as it had failed to reduce the poor air quality.[115] The DFFE recommended its overhaul with more attainable objectives.[116] By the government's admission, the poor air quality continues to soar despite the HPAMP because of polluting industries that disregard the HPAMP.[117] Amending the HPAMP to contain achievable objectives is not the answer. That would result in lowering its standards to accommodate significant emitters, which would not assist air quality enrichment. Instead, regulations with penalties would deter them.[118]

The court affirmed the HPA community's right to clean air which the rest of the country enjoys, finding the Minister in breach of the right to an environment that enhanced their health and well-being.[119] It further clarified that section 20 of NEMAQA mandated the Minister to enact regulations to strengthen the HPAMP.[120] This interpretation is correct, as the purpose of the regulations was to strengthen the implementation and enforcement of the HPAMP. Such action could not be discretionary as the HPAMP would not be worth the piece of paper it was written on if it could not be actioned.

[113] NEMAQA s 20.
[114] Note 85 above 20 & 22.
[115] Department of Environmental Affairs *The Medium-Term Draft Review of the 2011 Highveld Priority Area (HPA): Air Quality Management Plan* (Draft Review Report) (2015) 52.
[116] Ibid 86.
[117] Ibid 48.
[118] NEMAQA s 20 (c).
[119] Note 85 above 183.
[120] Ibid 241.2.

The court also rejected the Minister's defence of the separation of powers to evade judicial oversight of her actions.[121] Separation of powers means that a sphere of government, such as the court, cannot encroach on the powers of another sphere, as the doctrine promotes an autonomous exercise of power.[122] However, the Minister cannot object to judicial oversight because although each sphere has the independence to manage its affairs, their mandates must still align as they serve the country's common good.[123]

This is also termed cooperative governance,[124] which is required, especially in air pollution matters, as poor air quality impacts vulnerable groups who rely on the state for health services, which drains the Department of Health's resources.[125] Thus those checks and balances, such as judicial oversight, prevent such situations. Also, her inaction prejudices South Africa and the world at large, as air pollution is transboundary.[126]

Although the Minister appealed this judgement, the significance of this case holding her accountable for her omission remains.[127] It was ground-breaking for a court in the African continent to find its state guilty of violating the constitutional right to clean air.[128]

Another contentious provision is section 24 of the Constitution, which does not elaborate on whether the guaranteed rights to a healthy environment and well-being are progressive or immediate.[129] It simply declares those rights and leaves their timeline to individual interpretation.

---

[121] Note 85 above 239.
[122] F Dube 'Separation of powers and the institutional supremacy of the Constitutional Court over Parliament and the Executive' (2020) 36 South African Journal on Human Rights 293,296.
[123] Constitution s 41.
[124] Ibid.
[125] Klausbruckner et al (note 45 above) 75.
[126] C Tshehla & CY Wright '15 years after the `national Environmental Management Air Quality Act: Is legislation failing to reduce air pollution in South Africa?' (2019) 115 *South African Journal of Science* 1,2.
[127] Note 85 above 236.
[128] <https://cer.org.za/news/analysis-why-the-deadlyair-high-court-judgment-matters>.
[129] Note 85 above 36-39.

However, the *Deadly Air* case settled this by establishing the immediacy of those rights when it mandated the Minister to publish regulations[130] within six months.[131] The court's decision resonates with the purpose of section 24 of the Constitution as it would not be practical to only enforce the rights after irreparable harm has been caused by climate change.

It is evident that development and the environment are interconnected, such that no development can progress in a deteriorating environment.[132] These implications mean that environmental protection cannot be delayed because of development.[133] In the *Thabametsi* and the *Deadly Air* cases, the courts upheld the immediacy of the right to well-being, health, and the environment by refusing environmental degradation. These court decisions show that the nature of these rights demands immediate implementation. Ensuring the safety of communities cannot be put in abeyance while pursuing economic interests, as the environment will eventually succumb to climate change.

The *Deadly Air* and *Thabametsi* cases prove the ambiguity of air quality legislation, resulting in multiple interpretations. For example, Thabametsi is a company that interpreted legislation differently from the affected community.[134] In the Deadly Air case, the state's interpretation differed from that of the community, as the Minister understood section 20 of NEMAQA as giving her the discretion to publish regulations. In contrast, the community saw it as an obligation.[135] The state and corporations made differing interpretations because of unclear provisions, and these two cases demonstrate that well.

This analysis has demonstrated the failure by and, at times, the refusal of the national government to apply air quality laws to reduce climate change. The report will now turn to the next section to discuss the benefits of empowering the lower spheres of government to take on this task.

---

[130] Note 85 above 156.
[131] Ibid 235.
[132] *Fuel Retailers Association of South Africa v Director General, Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga* 2007 (6) SA 4 (CC) para 44.
[133] Ibid.
[134] Note 6 above 16.
[135] Note 85 above 134.

4.2 *The role of Municipalities in Air Quality Improvement*

This section outlines how local government can contribute to the improvement of air quality through the air quality legal framework.

The national and provincial governments must sufficiently capacitate the municipalities to mitigate climate change.[136] Most of the South African population lives in urban areas, run by Municipalities,[137] and is set to double by 2050.[138] They are also the biggest consumers of natural resources, making them more responsible for exacerbating climate change.[139] The war against climate change will thus be primarily fought in the cities.[140] As it is, municipalities are taking the initiative to form global municipal alliances to tackle climate change, proving their capability and willingness to mitigate it.[141]

Allocating more mitigation responsibilities to municipalities is not intended to subvert the national government but to strengthen its mitigation efforts.[142] In as much as the national sphere heads the country's affairs, the reality is that cities are garnering power as they are the economic hubs.[143] Thus the national government cannot afford to continue relegating municipalities to mere spectators by side-lining them in climate change issues.[144]

Moreover, urban areas are more at risk of climate change impacts as the most dwellers are low-income people residing in poorly structured accommodation.[145] Thus the financial setback from infrastructural damage caused by climate-induced extreme weather events is more felt at the local government level.[146] The municipalities use

[136] Constitution Section 154 (1).
[137]South African Cities Network *State of South African Cities Report* (2021) 17.
[138] Ibid.
[139] Ibid 145.
[140] Ibid 143.
[141] S Curtis 'Cities and Global Governance: State Failure or a New Global Order?' (2016) 44 *Millenium Journal of International Studies* 465.
[142] Ibid 456.
[143] Ibid 466.
[144] Ibid.
[145] W Faling, JWN Tempelhof & & D van Niekerk 'Rhetoric or action: Are South African Municipalities Planning for Climate Change'? (2012) 29 *Development for South Africa* 241,244.
[146] Ibid 251.

their limited funds for repairs,[147] which can cost billions of rands.[148] Evidently, global and national government mitigation efforts can only succeed with local government input.[149]

The municipalities' Constitutional mandate to control air pollution[150] can be used as a platform to integrate climate change by tightening its screws on GHG emissions.[151] Municipalities can also decide on pollution reduction strategies, such as[152] enacting by-laws[153] or through an air quality management plan.[154] Another opportunity is created when national and provincial government spheres delegate tasks to the local government.[155] One of those tasks can be climate change mitigation.[156]

These are powers already vested in municipalities that can be broadened to reduce climate change.[157] However, their actions must still align with the NEMAQA because their by-laws are subordinate to the NEMAQA.[158] Thus the ground is already fertile for local government to participate in climate change mitigation.[159]

To safeguard mitigation efforts, Environmental Management Inspectors (EMIs)[160] enforce and monitor compliance with environmental legislation, including the NEMAQA,[161] as it is a specific environmental management Act.[162] Their powers equal those of the South African police officers in environmental matters, which means that they can also arrest offenders.[163] However, as of 2021, there were still only 3 158 EMIs

[147] Faling (note 145 above) 253.
[148] Ibid 251.
[149] du Plessis & Kotze (note 8 above) 149.
[150] Constitution Schedule 4 Part B.
[151] du Plessis & Kotze (note 8 above) 162-163.
[152] Constitution s 156 (1).
[153] Ibid s 156 (2).
[154] NEMAQA s 5 (2).
[155] Constitution s 156 (4).
[156] du Plessis & Kotze (note 8 above) 150.
[157] du Plessis & Kotze (note 8 above) 162-163.
[158] NEMAQA s 6 (b).
[159] du Plessis & Kotze (note 8 above) 150.
[160] NEMA s 31B.
[161] NEMA s 31D (1).
[162] NEMA s 31L (1).
[163] NEMA s 31H (5).

in national and provincial governments,[164] with only 426 municipality inspectors.[165] Although Mpumalanga province is a GHG emissions hotspot, it only has eighteen EMIs to police its high emissions.[166] This shortage reduces the municipality's chances of effectively enforcing the NEMAQA.

The NEMAQA also mandates the appointment of municipal Air Quality Officers.[167] They differ from the EMIs in that they prioritise air quality management.[168] With the assistance of Air Quality Officers, municipalities are ideal gatekeepers of air quality, as they can easily catch repeat offenders.[169] This is because controlling a small municipal area is easier than trying to police the entire country.[170]

They can also enlist the community leaders' assistance as they would expectedly interact with them on other matters.[171] Local governments usually have close ties with industries in the area, as those industries rely on the workforce from those areas.[172] Municipality environmental authorities also originate from the same communities affected by poor air quality and are more motivated to bring non-compliant companies to book than a distant national official.

Although municipal officers need more knowledge to meaningfully partake in mitigation,[173] if the national government supports them through workshops and tertiary education scholarships, this barrier can be overcome. Again more visible and pressing social issues such as employment, housing and health tend to distract the municipalities from climate change.[174] However, mitigation must still be prioritised as the communities that need these services will also be more impacted by climate change than any other demographic.[175] This was seen during the height of the COVID-

[164]Department of Environment, Forestry and Fisheries *National Environmental Compliance and Enforcement Report* (2019-2020) 8.
[165] Ibid 8.
[166] Ibid 9.
[167] NEMAQA s 14 (1).
[168] Ibid.
[169] du Plessis & Kotze (note 8 above) 152.
[170] Ibid.
[171] Faling (note 145 above) 146.
[172] Ibid.
[173] Faling (note 145 above) 246.
[174] Ibid 253.
[175] Ibid 244.

19 pandemic, when climate change took a back seat,[176] only to culminate in the Kwa-Zulu Natal floods.[177] Thus a balance needs to be struck between these crucial issues.

This section has demonstrated the importance of the inclusion of municipalities in climate change mitigation, given their close alliance with the industries and the local community. It has also shown how under-capacitated municipalities are to perform this vital responsibility and the necessity for the national and provincial governments to support them.

4.3 ***Lack of cooperation between government departments***

The discussion now turns to the mitigation constraints brought about by the lack of cooperation among the spheres of government.

The conflicting mandates of different government institutions also hamper climate change mitigation.[178] The NEMA principles regulating significant air pollution[179] apply to all spheres of government without exception[180] and the court in the Deadly Air case also concurs with this assertion.[181]

The Minister of Mineral Resources and Energy (DMRE), Mr Gwede Mantashe, has dissented from domestic and global mitigation measures, accusing them of hampering much-needed economic growth.[182] He publicly condemned carbon emissions reduction in African countries and campaigned for the continent's continued use of fossil fuels.[183] These negative comments undermine the importance of climate change and sabotage cooperative governance.[184] The mandates of the DMRE and DFFE do not complement each other in climate change issues.

---

[176] OC Ruppel 'South Africa: Climate change, responsibility and liability–the legal system, public and private law considerations' (2022) *Climate Change, Responsibility and Liability* 201,204.
[177] (note 36 above).
[178] (note 115 above) 81.
[179] NEMA s 2 (4) (a) (ii).
[180] NEMA s 2 (4) (b).
[181] Note 85 above para 241.5.6.
[182]<https://www.dailymaverick.co.za/article/2021-11-09-gwede-mantashe-calls-for-a-unified-african-fossil-fuel-front-while-rich-world-encircles-continent/>.
[183] Ibid.
[184] Constitution s 41 (1) (h).

Cooperative governance between the DMRE and the DFFE is critical,[185] as evidenced by the introduction of the One Environmental Management System, which sought to gel the environmental activities of both departments.[186] The system repealed the sections of the Minerals and Petroleum Resources Development Act 28 of 2002 that related to the environment and regulated them through the NEMA.[187] The Minister became in charge of regulating environmental matters in mining, with the Minister of DMRE only executing them.[188] This left little room for the DMRE Minister to apply the environmental provisions subjectively.

As previously alluded, there are instances where the two departments' mandates clashed, such as when the DMRE granted a mining right to Maccsand Pty (Ltd) in a municipality demarcated residential area without the municipality's knowledge.[189] The municipality and the DFFE, albeit its provincial wing, challenged the authorisation as it would negatively affect air quality in the area.[190] Meanwhile, the mining company assumed that municipal authorisation was unnecessary as it had already obtained permission from the DMRE.[191]

The court disagreed and held that the national government could not usurp the local government's zoning autonomy.[192] This judgement protected nearby communities and the local environment from poor air quality from the mining operations. Air quality protection, in this instance, benefited the climate.

The dual role of the Minister of Minerals Resources and Energy and the issuer of environmental licenses creates this conflict of interest, as he must also promote his

[185] Constitution s 41 (1).
[186] NEMA s 50A (2) (a).
[187] NEMA s 50A (2) (a).
[188] NEMA s 50A (2) (b).
[189] *Mccsand (Pty) Ltd v City of Cape Town* 2012 4 SA 181 CC 44.
[190] Ibid 2.
[191] Ibid 24.
[192] Ibid 46.

department's economic development.[193] This position causes Mr Mantashe to bedevil climate change mitigation and see it as an obstacle to economic advancement.[194]

Mr Mantashe's sentiments jeopardise climate change mitigation, as he is bound to authorise the construction of more coal mines and coal power stations to grow the economy. Such conduct hinders progress in reducing carbon emissions. Although the DMREs decisions can be appealed to the Minister, an appeal is a cumbersome process that could overwhelm a layperson.[195] Furthermore, the DMRE would most likely challenge it, which would mean a long process of establishing what a single Climate Change Act could have easily determined.

Again, an appeal is not an absolute protective measure as it depends on the aggrieved parties taking the initiative to appeal, having access to lawyers and having the technical know-how of the appeal process.[196] Should they lack the motive, the mining authorisation will remain valid.

Furthermore, if such reckless statements from public figures like Mr Mantashe persist, South Africa could be ousted by global environmental circles and compromise its eligibility for international financial assistance.[197]

The absence of much-needed cooperation between state organs frustrates climate change mitigation, as the different spheres must collaborate. The report will shift to focus on how ambient air quality is monitored in South Africa.

[193] Steyn (note 23 above) 398.
[194] <https://ewn.co.za/2022/03/01/mantashe-slams-shell-s-treatment-in-sa-says-oil-giant-harassed-out-of-country>.
[195] TL Humby 'One Environmental System aligning the laws on the environmental management of mining in South Africa' (2015) 33 *Journal of Energy and Natural Resources Law* 110, 126-127.
[196] Ibid 129.
[197] Averchenkova et al (note 81 above) 27.

4.4. ***Data Monitoring***

Data monitoring will be discussed in this section to determine how it can be strengthened to mitigate climate change effectively.

Data collection plays a significant role in measuring the success of mitigation actions. However, South Africa needs reliable data monitoring systems.[198] As of 2019, it only had 164 state-owned air quality monitoring stations conveying live information to the South African Air Quality Information System (SAAQIS).[199] However, data from these stations is unreliable due to insufficient skilled personnel to operate them and the lack of funds for their maintenance.[200] The number of monitoring stations needs to be increased to efficiently service the entire country, considering that South Africa has 278 municipalities.[201] Ideally, every municipality must have its station.[202]

The actual state of air quality in the HPA is still unknown due to malfunctioning monitoring stations, which need repairs.[203] This situation is deplorable, as the Minister must establish a national framework with norms and standards for monitoring and managing information on air quality.[204] The court in the Deadly Air case also stressed the importance of air quality data monitoring and the maintenance of an air quality monitoring station network to produce verified and reliable data.[205]

The state's inefficient data monitoring has resulted in provinces with the financial means taking steps to ensure effective data monitoring. For example, the Western Cape Province invested ten million rand in monitoring stations, as it acknowledges that data collection and air quality monitoring are fundamental to climate change mitigation.[206] The national government's failure to address this shortage could result in privileged provinces having cleaner air than other parts of the country.

---

[198] Tshehla & Wright (note 126 above) 2.
[199] Ibid.
[200] Ibid 2.
[201] Ibid 2.
[202] Ibid.
[203] (note 115 above) 30.
[204] NEMAQA s 7 (a), (f).
[205] Note 85 above 241.5.3.
[206] <https://www.westerncape.gov.za/eadp/news/western-cape-adopts-new-air-quality-management-plan-and-invests-r10million-its-air-quality>.

The government needs to invest more in data monitoring stations as they will give tangible evidence of high emissions.[207] The continuous heavy emissions in the HPA show that tougher action on monitoring data is required. Being oblivious to this issue will compromise the reliability of the country's emissions data statistics.[208] This negligence has also emboldened heavy emitters to use these loopholes to further their economic activities.[209] The legitimacy of South Africa's commitment to emission reductions will be questionable as a result.[210] Thus this mitigation sector is undeniably a priority that needs urgent action.[211]

The country needs to address this issue prudently and have more transparency on its remedial actions. It is inconclusive whether environmental officials are receiving training on operating data monitoring technology. Furthermore, the government has yet to be reported as taking steps to purchase more data monitoring equipment.

Thus the situation remains stagnant, with no progress in acquiring reliable emissions statistics. One then wonders how such an approach can be adopted when urgent climate actions are being implemented worldwide. Either the government is indifferent, or awareness of climate change needs to be intensified from the top.

This section has brought to the fore the significant shortcomings of the data monitoring system that must be addressed to mitigate climate change successfully. This report will now examine the necessity of a Climate Change Act.

4.5 *Climate Change Act*

In the preceding sections, the report identified the weaknesses that prevent the effectiveness of air quality laws in climate change mitigation. It demonstrated how gaps exist that advance sinister activities of heavy emitting-industries to promote their economic pursuits. It now turns to reflect on the potential benefits of express law regulating climate change.

---

[207] Averchenkova et al (note 81 above) 27-28.
[208] Averchenkova et al (note 81 above) 27.
[209] Ibid 28.
[210] Ibid 28.
[211] Tshehla & Wright (note 126 above) 1.

The promulgation of the Climate Change Act ('the Act') is spearheaded by the Constitution, which requires the government to take legislative measures to mitigate climate change by addressing its catalysts, such as air pollution.[212] Thus it is time to accelerate the enactment of climate change law that will mandate immediate mitigation action from government departments and industries.[213]

Although the NEMAQA is ambitious in curbing GHG emissions, climate change has been subjugated by air quality in most people's minds and developments.[214] The non-reference to climate change by the NEMAQA worsens the situation.[215] A paradigm shift is required through legislation specifically tailored to address climate change to mitigate it successfully.[216]

Climate change legislation would solve this problem as addressing climate change through national legislation would create uniformity.[217] Even if the air quality framework were to be strengthened, it would not fully assist climate change as it does not directly address it.[218] It would still be an afterthought, with its relevance constantly questioned. Furthermore, reliance on reading in climate change in air quality legislation exposes it to subjective interpretations which become contentious, given differing interests, thus opening the floodgates of climate change litigation.

Additionally, a Climate Change Act would be better than leaving it to the courts to include climate change in air quality-related issues, as litigation requires excessive funds from the litigants.[219] Environmental experts are also required because of the complexity of environmental issues, and most litigants cannot afford them.[220] Another disadvantage is that cases can also take years to be finalised, which can be excruciating for the parties and does not protect the environment in the interim.[221]

---

[212] Constitution s 24.
[213] du Plessis & Kotze (note 8 above) 151.
[214] Papacostantis (note 12 above) 18.
[215] Ruppel (note 176 above) 221.
[216] Papacostantis (note 12 above) 18.
[217] Ibid 18.
[218] vd Bank & Karsten (note 4 above) 6.
[219] L Chamberlain 'Beyond Litigation: The need for creativity to realise environmental rights' (2017) 13 *Law, Environment and Development Journal* 1,6.
[220] Ibid 6.
[221] Chamberlain (note 219 above) 4.

An example is the Deadly Air case which took three years to conclude while the community and environment endured poor air quality.[222] Furthermore, court decisions are sometimes appealed, which further delays their implementation.[223] Separation of powers also questions whether the courts are overreaching their powers by scrutinising the conduct of other government spheres.[224] People's lives are put at risk in the name of political correctness.

Some have argued that climate change legislation is unnecessary, but this argument is unsustainable as judges seized with climate change matters are not formally educated in environmental law.[225] They then avoid climate change arguments and focus more on the administrative aspects of cases.[226]

At times incorrect decisions are arrived at, such as in *Bareki N.O v Gencor Ltd*,[227] where the court incorrectly held that the NEMA section 28 environmental duty of care was not retrospective, sending shockwaves in the legal fraternity.[228] This shows that court decisions are subjective as they are mainly made by a single judge, which breeds inconsistent decision-making and perpetuates uncertainty.[229]

Climate change legislation will be a saviour to this daunting situation, as it brings uniformity in all various policies on climate change.[230] The failure by South Africa to enact a Climate Change Act up to now undermines the country's credibility and international commitments.[231]

Due to the prevailing fog on the country's climate change position, heated battles ensue on opposite sides of the fence, such as in the Thabametsi case.[232] Whereas

---

[222]<https://cer.org.za/news/major-court-victory-for-communities-fighting-air-pollution-in-mpumalanga-highveld>.
[223]<https://www.dailymaverick.co.za/article/2022-04-11-environment-minister-barbara-creecy-slams-high-court-air-pollution-ruling-as-impermissible-interference/ >.
[224] O Rumble & R Summers (note 98 above) 6-8.
[225] M Kidd 'Greening the Judiciary' (2006) 3 *Potchefstroom Electronic Law Journal* 72, 72.
[226] Ibid 80,82.
[227] *Bareki N.O v Gencor Ltd* 2006 (1) SA 432 (T).
[228] Ibid 441-2.
[229] M Kidd (note 225 above) 72,79.
[230] Rumble (note 77 above) 240.
[231] Averchenkova et al (note 81 above) 27.
[232] Note 6 above 16.

climate change legislation vests clear duties on actors and integrates climate change.[233]

For instance, the Bill creates accountability by setting targets[234] and establishing institutions such as the Presidential Climate Change Commission with oversight powers.[235] Climate change legislation will also prevent the environmental laws' fragmentation and curb the overlapping mandates that prevail.[236] The status quo of concurrent policies should be improved as this wastes time, increases government expenditure and affects the quality of service offered to affected communities. [237]

Again, the Bill creates much-needed structure by mandating decision makers' incorporation of climate change.[238] By clarifying its position as the ultimate authority in climate change, the Bill created a benchmark in conflict situations, thus easing its enforcement.[239] It could also influence the general behavioural habits of society by its mere existence, as it will deter any violations.[240] A similar situation exists in the Protection of Personal Information Act 4 of 2013 (POPIA), where most individuals and companies no longer share personal information because of the POPIA, which was not the case in the past.[241]

The Bill also sets carbon budgets limiting the amount of GHGs that an entity conducting listed services can emit.[242] This move will ensure easy reference and create clarity. Thus, anyone could refer to its provisions to familiarise themselves with the country's climate change response position.

[233] Rumble (note 77 above) 240.
[234] Ibid.
[235] MC Abraham-Dukuma, OM Dioha FN Okpaleke 'Improving the climate change mitigation regime of major emitting countries: The case of South Africa, China, Germany and the United States of America' (2022) 32 *Environmental Policy & Governance* 43,49.
[236] LJ Kotze 'Improving unsustainable environmental governance in South Africa: The case for holistic governance' (2006) 9 *Potchefstroom Electronic Journal* 1,5.
[237] Ibid 18-19.
[238] Climate Change Bill s 3 (e) & Rumble (note 79 above) 239.
[239] Climate Change Bill s 6.
[240] Rumble (note 77 above) 239.
[241] Protection of Personal Information Act 4 of 2013 s 19.
[242] Climate Change Bill s 24 (1).

Also, it will cause state organs to align their policies[243] instead of the current situation of opposing interests where the DMRE is authorising new coal mines while the DEFF advocates GHG emission reductions, which is divisive and can be confusing.[244] With government departments pulling in different directions, the concept of climate change becomes clouded. This has also perpetuated a lack of awareness, as it is hard to imagine that a climate urgency exists while few tangible efforts are seen.

An example of the positive impact of climate change legislation is the Kenya Climate Change Act 11 of 2016 ('the Kenyan Act'). It established the National Climate Change Council (NCCC), steered by the President.[245] It has representatives from the government, the private sector, civil society, marginalised communities and academia.[246] This mix of individuals from various sectors is advantageous as the country casts its net wide by receiving input from those different people, including communities most affected by climate change.

The NCCC exercises oversight,[247] which aligns other laws with the Kenyan Act, promotes public awareness of climate change, administers the climate change fund, and sets targets for regulating GHG emissions.[248] Whereas lack of oversight in South Africa enables exceedances and weakens the effectiveness of its air quality laws which are currently surrogate climate change regulators.

In Kenya, both private entities and state departments report greenhouse gas emissions through a dedicated database.[249] These records assist in investigations to identify sources of exceeded emission targets.[250]

Another advantage of the existence of the Kenyan Act is the education of government officials on climate change.[251] Empowering officials is essential, given that they are on the frontline, and the Kenyan Act can only be effectively implemented if they

[243] POPIA s 7 (1).
[244] Ibid s 10 (1).
[245] Kenya Climate Change Act 11 of 2016 s 5 (1) – (2).
[246] Ibid s 7 (2).
[247] Ibid s 6.
[248] Ibid s 6 (e) & (h).
[249] Ibid s 16 (1) & s 15 (1).
[250] Ibid s 15 (6).
[251] Ibid s 9 (8) (f).

understand the concept of climate change. Impressively drafted laws have been reduced to politically correct statements and do not achieve their intended purpose due to a lack of knowledge by environmental authorities on the ground.[252]

Likewise, The Law No. 12187 is the Brazilian National Policy on Climate Change ('Brazilian National Policy'). It is most notable for documenting its voluntary commitment to emission reductions,[253] and this shows the country's earnestness in mitigating climate change and creates a yardstick for its mitigation efforts.

Just like the Bill, it differs from the Kenyan climate change legislation by mandating climate change mitigation to everyone, not just government and private entities.[254] However, it acknowledges that mitigation efforts can not realistically be uniform but are influenced by individual socio-economic settings.[255] More effort will be expected from wealthy and big corporations, as opposed to the poor, considering that the rich have more assets, such as fossil fuel vehicles that emit GHGs and can afford non-renewable energy technology to reduce their energy consumption.

The Brazilian National Policy ensures that all socio-economic development considers climate change protection[256] and appoints a special task force team to enforce the climate change mandate.

Similarities exist between the Brazilian National Policy and the Kenyan Act in establishing a National Fund on Climate Change.[257] However, Brazil goes the extra mile by having an inter-ministerial Committee on Global Climate Change.[258] This shows how a country can extend its mitigation methods to suit its circumstances when climate change legislation exists.

[252] Averchenkova et al (note 81 above) 25-26.
[253] Law No. 12187 Brazilian National Policy on Climate Change art 12.
[254] Ibid Article 3 (i).
[255] Ibid Article 3 (iii).
[256] Ibid Article 4 (i),(ii) & (iv).
[257] Ibid Article 6 (ii).
[258] Ibid Article 7 (ii).

As demonstrated by the two climate change legislations discussed, climate change law is ideal as it speaks to national contexts.[259] It also mandates and guides the actions of government departments, resulting in their coordinated efforts where climate change is a common denominator.[260]

Furthermore, the penalties imposed by air quality laws are only criminal sanctions[261] and do not deter polluting companies as they have deep pockets.[262] Most importantly, they have no remedial effects on the environment, which could have suffered irreversible damage by then.[263]

The simplicity of mitigating climate change through a dedicated Climate Change Act has been demonstrated by citing examples of contradictions in using various mechanisms to mitigate climate change. It has been shown that the differences of opinion between industries, government and communities can be better addressed by a single Climate Change Act.

The report now shifts to recommend possible reforms to mitigate climate change effectively.

5. **Recommendations**

In the preceding section, the report analysed some of the deficiencies in the current system. This section presents five suggestions for reform.

Firstly, the enactment of a Climate Change Act must be prioritised.[264] A single Act would centralise and simplify the implementation of climate change mitigation and be easier for the public to understand. Its express terms would ease the identification of prohibited activities.

[259] Rumble (note 77 above) 245.
[260] Rumble (note 77 above) 239.
[261]NEMAQA s 52.
[262] Murombo (note 72 above) 28.
[263] Ibid 15.
[264] Papacostantis (note 12 above) 4.

Furthermore, the Bill already demonstrates the benefits of climate change legislation by mandating cooperation between government departments.[265] This collaboration will result in integrated management by all state actors, with climate change becoming a priority in all their decision-making. Such an approach is practical as collective action ensures that climate change is addressed from all fronts.

Although a Parliamentary Monitoring Group (PMG) already exercises oversight on the progress of Bills, a task team could be established to create more transparency. It could comprise of an academic, a member of civic society, the private sector and the DFFE to strike a balance. Its involvement is necessary as the PMG is a voluntary organisation that only observes and publishes the progress of a Bill for public information purposes.[266] It cannot descend into the arena of looking into the process itself.

However, the task team could delve deeper into the causes of delays in passing legislation and recommend solutions. Thus such collaboration would be valuable. The team should also release periodic reports on the Bill's progress. Their input would bridge the gap between the public and the government, minimising the stagnation of passing bills and building trust. It will also pressure the government into passing the Bill expeditiously, as it would not want its delaying tactics to become public knowledge.

Secondly, despite the existence of the Bill, South Africa still needs to reformulate the design and the implementation of its air quality laws. The inextricable link between air quality and climate change requires a stronger NEMAQA to effectively complement the impending climate change legislation for it to succeed.[267] It can be achieved by drafting the air quality legal framework more explicitly, setting clear boundaries for heavy emitters than the vague language used currently, as it implies that the government is reluctant to take a stand against them. Environmental justice is required so that the vulnerable are not casualties of the current air quality laws because of stubborn politicians.[268]

---

[265] Climate Change Bill s 2 (a).
[266] <https://pmg.org.za/page/what-is-pmg>.
[267] Faling (note 145 above) 244.
[268] Klausbruckner et al (note 45 above) 70.

As it stands, the litigation of the Deadly Air case centred around the correct interpretation of section 20 of NEMAQA, because of its vagueness until the court came to the rescue.[269] Such a status quo is untenable and creates an uncertain environment prone to guesswork, whereas the whole point of legislation is to create certainty.

The third thing that could be improved is for municipalities to be better equipped to mitigate climate change effectively.[270] For example, they can be given more data monitors.[271] Without the actual emissions statistics, the country will be fighting against an invisible enemy.

The importance of data monitoring takes us back to the Siamese twin connection that air quality has with climate change.[272] Therefore if GHG emissions are still not closely monitored in the cities, the fight against climate change has not begun.[273] As the HPA is a GHG emissions hotspot, its municipalities must be given more data monitoring stations.[274] Having a structured data monitoring system will close gaps created by insufficient monitoring.[275]

Municipalities must be involved in issuing mining licenses to ease tensions between the local government and their communities due to coal mining activities. This is not to say that the municipalities should usurp the licensing powers of the DMRE. However, since their functional areas overlap, consultations between them are necessary to avoid competing interests. It is unjust for municipalities to put out fires they did not start, while the DMRE enables GHG emissions and receives financial benefits from them. Municipalities are currently collateral to other government departments' conduct.

The failure of the DMRE to consult the municipalities in approving mining licences, such as in *Maccsand,* is unconstitutional and undermines cooperative governance.[276]

[269] Note 85 above 11.3.
[270] Constitution s 154 (1).
[271] Tshehla & Wright (note 126 above) 2.
[272] Department of Environmental Affairs '*National Climate Change Response White Paper'* GN757 GG34695 (19 October 2011) 8.
[273] (note 137 above) 143.
[274] A Gilder & O Rumble 'South Africa: A Global Air Pollution Hotspot?' (2020) 81 *TAXTalk* 92,93.
[275] Tshehla & Wright (note 126 above) 2.
[276] Constitution s 41 (1).

The NEMA mandates integration between state departments because of their interrelatedness.[277] Their coordination is indispensable in the smooth running of their operations, and there cannot be a disjuncture between DMRE and the Municipalities.[278]

The fourth suggestion is for more cooperation between government departments. Climate change cannot be addressed in isolation as it encompasses other sectors.[279] The economic growth objectives of these various departments must be in sync and align with the country's collective goal to mitigate climate change.[280] The failure to coordinate these efforts will cause the country's climate change efforts to be futile.

Spheres of government must not trample on others' mitigation efforts, to advance their economic prospects. It should be mandated for all government departments to consult all the other departments in environmental decisions. That will be useful as climate change has become widespread and affects all forms of development.[281]

The final recommendation is for the Air Quality Priority Management Plans to contain punitive measures. Currently, the success of the HPAMP relies on voluntary compliance by industries.[282] Those industries lack the motivation to comply as their monetary gain outweighs compliance benefits. They do not originate from the affected communities and have nothing to lose if the environment disintegrates after they have concluded their operations. They will move on to another area, leaving that community in dire straits. Thus the government must take a hard stance and deter their conduct through penalties.

If the HPAMP already had penalties, it would have been an effective weapon from the start, rather than relying on subsequent regulations to implement it. It is evident that without consequences, industries will be undeterred. Thus penalties will reduce

[277] NEMA s 2 (4) (l).
[278] Ibid.
[279] du Plessis & Kotze (note 8 above) 150.
[280] Constitution s 41 (1).
[281] Du Plessis & Kotze (note 8 above) 156.
[282] Note 85 above 20 & 22.

litigation and alleviate the frustrations of the affected parties, as courts are already drowning in cases.

The Minister's reluctance to publish regulations would not have been as urgent as it currently is if punitive measures were already in the HPAMP. Otherwise, the lives of the community of the HPA depend on the Minister.[283] That is vesting too much power in one person, which is unacceptable.

Having argued that the current air quality laws are flawed in mitigating climate change, this report has recommended practical methods to mitigate climate change.

6. Conclusion

This report has shown that the South African air quality regulatory system is insufficient to mitigate climate change.

The main areas of critique of the existing system discussed are that although South Africa has drafted an impressive air quality regulatory framework, its enforcement and implementation paints a different picture.[284] The declaration of priority areas is a good mitigation initiative. However, it is only effective with regulations to guide its purpose.[285]

If equipped with the necessary tools, the municipalities can play a crucial role in pushing the climate change mitigation agenda forward.[286] They are at the forefront of the country's wealth generation proving that they can be trusted with that function. Teething problems exist in their lack of capacity.[287] However, these deficiencies could be overcome through training and support between government spheres.[288]

Strengthening data monitoring will identify unrepentant heavy emitters. The country's extreme weather events caused by climate change have been unabated, given the lax

[283] M Kidd and E Couzens 'Climate Change Responses' Erkki J. Hollo Kato Kulovesi & Michael Mehling (eds) *Climate Change and The Law* (2012) 264.
[284] Klausbruckner et al (note 45 above 71).
[285] Note 85 above 179.
[286] Du Plessis & Kotze (note 8 above) 37.
[287] Faling et al (note 145 above) 246.
[288] Constitution s 41 (1).

manner that emissions are monitored. Heavy emissions cannot be ongoing indefinitely regardless of their financial rewards, as climate change impacts eventually undermine economic progress and human rights.[289] Significant reforms inevitably need to be made through an efficient data monitoring strategy.[290]

While arguably, there can be no definite rules to guarantee climate change mitigation, a Climate Change Act would be a good starting point. As has been pointed out, it will require South Africa to steer away from its tradition of side stepping emitters by imposing penalties in Priority Area Management Plans. Leaving compliance to depend on personal conviction defeats the purpose of having legal mechanisms to control emissions. Although the Bill has faced criticism, if public comments are taken onboard, it will place South Africa in a better position regarding climate change mitigation.

The report has found that air quality laws are insufficient and need to be revised to regulate climate change efficiently. If enacted into law, especially considering stakeholder concerns, the Climate Change Act will bring much-needed direction.

[289] Du Plessis & Kotze (note 8 above) 156.
[290] Centre for Environmental Rights '*Broken Promises, The Failure of the Highveld Priority Area'* (2017) 72.

BIBLIOGRAPHY

Books

- Michael Kidd *Environmental Law* 2 ed (2011).

Book Chapters

- Andrew Gilder & Ernesta Swanepoel 'Climate Change' in HA Strydom, ND King & F Retief (eds) *Environmental Management in South Africa* (2020) 735.
- Karin Lehmann 'South Africa's Climate Change Commitments and Regulatory Response Potential' in Humby, Kotze, Rumble & Gilder (eds) *Climate Change Law & Governance in South Africa* (Original Service 2016) 8-1.
- Michael Kidd and Ed Couzens 'Climate Change Responses' Erkki J. Hollo Kato Kulovesi & Michael Mehling (eds) *Climate Change and The Law* (2012).
- Olivia Rumble & Richard Summers 'Climate Change Litigation' in South Africa' in Humby, Kotze, Rumble & Gilder (eds) *Climate Change Law & Governance in South Africa* (Original Service 2016) 6-1.

Journal Articles

- Alina Averchenkova, Kate Elizabeth Gannon & Patrick Curran (2019) 'Governance of climate change policy: A case study of South Africa' 1, 26.
- Andrew Gilder & Olivia Rumble 'South Africa: A Global Air Pollution Hotspot?' (2020) 81 *TAXTalk* 92.
- Anel du Plessis 'Climate Change, Public Trusteeship and the Tomorrows of the unborn child' (2015) 31 *South African Journal of Human Rights* 269.
- Anel du Plessis & Louis J Kotze 'The heat is on: Local Government and Climate Governance in South Africa' (2014) 58 *Journal of African Law* 145.
- Carmen Klausbruckner, Harold Annegarn, Lucas RF Henneman & Peter Rafaj 'A policy review of synergies and trade-offs in South African Climate Change Mitigation and Air Pollution Strategies' (2016) 57 *Environmental Science & Policy* (2016) 70.

- Cheledi Tshehla & Caradee Y. Wright ’15 years after the National Environmental Management Air Quality Act: Is legislation failing to reduce air pollution in South Africa?’ (2019) 115 *South African Journal of Science* 1.
- Felix Dube ‘Separation of powers and the institutional supremacy of the Constitutional Court over Parliament and the Executive’ (2020) 36 South African Journal on Human Rights 293.
- Helen Papacostantis ‘South Africa’s Journey to Climate Change Regulation: Earthlife Africa Johannesburg v Minister of Environmental Affairs (2017) 2 All SA 519 (GP)’ (2021) 24 *Potchefstroom Law Journal 1*.
- Lisa Chamberlain ‘Beyond Litigation: The need for creativity to realise environmental rights’ (2017) 13 *Law, Environment and Development Journal* 1.
- Louis J. Kotze ‘Improving unsustainable environmental governance in South Africa: The case for holistic governance’ (2006) 9 *Potchefstroom Electronic Journal* 1.
- Margaret Rosso Grossman ‘Climate Change and the Individual’ (2018) 66 *The American Journal for Comparative Law* 345.
- MC Abraham-Dukuma, OM Dioha FN Okpaleke ‘Improving the climate change mitigation regime of major emitting countries: The case of South Africa, China, Germany and the United States of America’ (2022) 32 *Environmental Policy & Governance* 43.
- Marjone van der Bank & Jaco Karsten ‘Climate Change and South Africa: A Critical Analysis of *Earthlife Africa Johannesburg and Another v Minister of Energy and Others 65662/16 2017* Case and the Drive for Concrete Climate Practices (2019) 13 *Air, Soil and Water Research* 1.
- Masonwabe Dyosi, AM Kalumba, HB Magagula, L. Zhou & Israel R. Orimiloye, ‘Drought conditions appraisal using geoinformatics and multi-influencing factors’ (2021) 193 *Environmental Monitoring and Assessment* 1.
- Michael Kidd ‘Greening the Judiciary’ (2006) 3 *Potchefstroom Electronic Law Journal* 72.
- Oliver C. Ruppel ‘South Africa: Climate change, responsibility and liability–the legal system, public and private law considerations’ (2022) *Climate Change, Responsibility and Liability* 221.

- Olivia Rumble ‘Facilitating Climate Change Adaptation Through Framework Laws’ (2019) *Carbon and Climate Law Review* 237.
- Phia Steyn ‘The Lingering Environmental Impact of Repressive Governance: The Environmental Legacy of the Apartheid Era for the New South Africa’ (2005) 2 *Globalisations* 391.
- Rico Euripidou, James Irlam, David Hallowes, Timothy Lloyd & Nicole Loser ‘The Minimum Emission Standards (MES) and the sabotage of public health’ (2022) *Clean Air Journal* 1.
- Simon Curtis ‘Cities and Global Governance: State Failure or a New Global Order?’ (2016) 44 *Millenium Journal of International Studies* 465.
- Tracy Lynn Humby ‘One Environmental System aligning the laws on the environmental management of mining in South Africa’ (2015) 33 *Journal of Energy and Natural Resources Law* 110.
- Tumai Murombo & Isaac Munyuki ‘The effectiveness of Plea and Sentence Agreements in Environmental Enforcement in South Africa’ (2019) 22 *Potchefstroom Electronic Law Journal* 1.
- Tumai Murombo ‘South Africa’s Energy Mix-Towards a Low Carbon Economy’ in Humby, Kotze, Rumble & Gilder (eds) *Climate Change Law & Governance in South Africa* (Original Service 2016) 18-1.
- Willemien Faling, Johann W.N. Tempelhof & & Dewald van Niekerk ‘Rhetoric or action: Are South African Municipalities Planning for Climate Change’? (2012) 29 *Development for South Africa* 241.

International Instruments

- Kyoto Protocol to the United Nations Framework Convention on Climate Change (adopted 11 December 1997).
- Paris Agreement to the United Nations Framework Convention on Climate Change (adopted 12 December 2015).
- United Nations Framework Convention on Climate Change (adopted 9 May 1992).

International legislation

- Kenya Climate Change Act 11 of 2016.
- Law No. 12187 Brazilian National Policy on Climate Change.

Domestic legislation

- National Environmental Management Act 107 of 1998.
- National Environmental Management: Air Quality Act 39 of 2004.
- Protection of Personal Information Act 4 of 2013.
- The Constitution of the Republic of South Africa, 1996.

Bills

- Climate Change Bill 2022.

Regulations

- Department of Environmental Affairs *Amendment of the Listed Activities and Associated Minimum Emission Standards Identified in terms of Section 21 of National Environmental Management: Air Quality Act, 2004 (Act no. 39 of 2004)* GN421 GG43174 (27 March 2020).
- Department of Environmental Affairs *List of activities which result in atmospheric emissions which have or may have a significant detrimental effect on the environment, including health, social conditions, economic conditions, ecological conditions or cultural heritage* GN893 GG37054 (22 November 2013).
- Department of Environmental Affairs *National Greenhouse Gas Emission Reporting Regulations* 2017, GN275 GG40762 (3 April 2017).
- Department of Environmental Affairs *White Paper on the National Climate Change Response* GN757 GG34695 (19 October 2011) .

Policy Documents

- Centre for Environmental Rights '*Broken Promises, The Failure of the Highveld Priority Area'* (2017) 72.
- Department of Environment, Forestry and Fisheries *National Environmental Compliance and Enforcement Report* (2019-2020).
- Department of Transport *Green Transport Strategy for South Africa* (2018-2050).
- National Climate Change Response White Paper (2011).
- Savanna Environmental 'Thabametsi Power Station near Lephalale: Climate Change Study and Palaecological Impact Assessment' (2017).
- South African Cities Network *State of South African Cities Report* (2021).
- The Department of Environmental Affairs *The Medium-Term Review of the 2011 Highveld Priority Area (HPA): Air Quality Management Plan* (Draft Review Report) (2015).

Case Law

- *Bareki N.O v Gencor Ltd* 2006 (1) SA 432 (T).
- *Earthlife Africa Johannesburg v Minister of Environmental Affairs* 2017 (2) All SA 519 (GP).
- *Fuel Retailers Association of South Africa v Director General, Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga* 2007 (6) SA 4 (CC).
- *HTF Developers v Minister of Environmental Affairs and Tourism* 2006 (5) SA.
- *Maccsand (Pty) Ltd v City of Cape Town* 2012 4 SA 181 CC.
- *The Trustees of Groundwork v The Minister of Environmental Affairs* (unreported case number: 39724/2019) 2022 ZAGPPHC 2 (18 March 2022).

Online Sources

- Centre for Environmental Rights 'CER Welcomes progress of Climate Bill, calls for robust climate law' 24 February 2022. <https://cer.org.za/news/cer-welcomes-progress-of-climate-bill-in-parliament-calls-for-robust-climate-law>.
- Centre for Environmental Rights 'Major Court Victory for communities fighting air pollution in Mpumalanga Highveld' 18 March 2022. <https://cer.org.za/news/major-court-victory-for-communities-fighting-air-pollution-in-mpumalanga-highveld>.
- Centre for Environmental Rights 'Why the Deadly Air case matters' 13 April 2022. <https://cer.org.za/news/analysis-why-the-deadlyair-high-court-judgment-matters>.
- Damian Carrington 'South Africa's April floods made twice as likely by climate crisis, scientists say' *The Guardian* 13 May 2022. <https://amp.theguardian.com/environment/2022/may/13/south-africa-floods-climate-crisis-global-heating>.
- Department of Forestry, Fisheries & the Environment 'Cabinet approves amendments of sulphur dioxide minimum emission standards for coal combustion installations – mainly power generation existing plants' 27 March 2020. <https://www.dffe.gov.za/mediarelease/creecy_emmissionstandards_amendmentpromulgated_sulpurdioxide_combustioninstallation>.
- Ed Stoddard 'Gwede Mantashe calls for a unified African fossil fuel front, while rich world 'encircles' continent' *Daily Maverick* 9 November 2021. <https://www.dailymaverick.co.za/article/2021-11-09-gwede-mantashe-calls-for-a-unified-african-fossil-fuel-front-while-rich-world-encircles-continent/>.
- Forestry, Fisheries and the Environment 'Minister Molewa published National Climate Change Bill for Public Comment' 10 June 2018. <https://www.dffe.gov.za/mediarelease/molewa_publishes_nationalclimatechangebillforpubliccomment>.

- Kevin Brandt ‘Mantashe slams Shell’s treatment in SA, says oil giant was harassed out of the country’ *EWN Eyewitness News* 10 March 2022. <https://ewn.co.za/2022/03/01/mantashe-slams-shell-s-treatment-in-sa-says-oil-giant-harassed-out-of-country>.
- Mary Galvin & Patrick Bond ‘Weathering the climate crisis in flood-prone Durban -tough lessons from the ‘rain bomb’’ *Daily Maverick* 18 April 2022. <https://www.dailymaverick.co.za/article/2022-04-18-weathering-the-climate-crisis-in-flood-prone-durban-tough-lessons-from-the-rain-bomb/>.
- Nica Richards ‘How Climate Change Helped Fuel Cape Town Fires’ *The Citizen* 23 April 2021. <https://www.citizen.co.za/news/south-africa/how-climate-change-helped-fuel-cape-town-fires/>.
- Onke Ngcuka ‘South Africa takes bolder steps to reduce emissions – but are they enough?’ *Daily Maverick* 29 September 2021. <https://www.dailymaverick.co.za/article/2021-09-29-south-africa-takes-bolder-steps-to-reduce-emissions-but-are-they-enough/>.
- PMG Parliamentary Monitoring Group ‘Climate Change Bill: Public hearings’ 20 September 2022. <https://pmg.org.za/committee-meeting/35596/>.
- Richard Jansen van Vuuren ‘Thabametsi climate change impact assessment reveals staggering greenhouse gas emissions’ *Mining Review Africa* 3 August 2017. <https://www.miningreview.com/products-services/thabametsi-climate-impact-assessment-reveals-greenhouse-gas-emissions/>.
- Robyn Hugo ‘If Barbara Creecy appeals against the ‘Deadly Air’ judgement, it will not be a good look for South Africa’ *Daily Maverick* (21 March 2021). <https://www.dailymaverick.co.za/opinionista/2022-03-21-if-barbara-creecy-appeals-against-the-deadly-air-judgment-it-will-not-be-a-good-look-for-government/>.
- Simon Levey ‘Climate Change made heavy rain behind South African floods twice as likely’ *Imperial College London* 13 May 2021. <https://www.imperial.ac.uk/news/236457/climate-change-made-heavy-rain-behind/>.

- ‘South Africa working on Climate Change Bill’. *South Africa News. Net* 17 May 2015 <https://www.southafricanews.net/news/257282816/south-africa-working-on-climate-change-bill>.
- Tembile Sgqolana ‘Eastern Cape farmers take stock after devastation caused by floods’ *Daily Maverick* 5 May 2022. <https://www.dailymaverick.co.za/article/2022-05-05-eastern-cape-farmers-take-stock-after-devastation-caused-by-floods/>.
- Tony Carnie ‘Minister Barbara Creecy slams high court air pollution ruling as impermissible interference’ *Daily Maverick* 11 April 2022. <https://www.dailymaverick.co.za/article/2022-04-11-environment-minister-barbara-creecy-slams-high-court-air-pollution-ruling-as-impermissible-interference/>.
- Western Cape Government Department of Environmental Affairs and Development Planning ‘Western Cape adopts new Air Quality Management Plan and invests 10 Million’ 10 March 2022. <https://www.westerncape.gov.za/eadp/news/western-cape-adopts-new-air-quality-management-plan-and-invests-r10million-its-air-quality>.