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South African Climate Change Regulation: Towards Climate Change Mitigation

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Abstract

Climate change is the change in earth's weather and climactic conditions due to an average rise in the temperature of the earth's surface. This temperature increase has principally resulted from an exponential increase in greenhouse gas (GHG) emissions resulting from anthropogenic activity. The consequences of climate change are experienced differently by different regions and the effects can reach across the globe ranging from minor to catastrophic proportions depending on the location of a country. The international response to this crisis has accelerated significantly since the early 1990s and the formation of the United Nations Framework Convention on Climate Change (UNFCCC). South Africa acknowledges the threat of climate change; however, the country has a strained relationship with climate change mitigation as one of earth's highest emitters of GHGs per capita due to its dependency on coal combustion. This dependency is further complicated by the sector's status as a primary employment and socio-economic driver domestically. These competing priorities impact upon South Africa's climate change response. South Africa has advanced climate change mitigation to a limited extent through the slow development of a domestic regulatory framework. The mitigation effort is hampered by some shortfalls in the domestic regulatory framework. The country currently lacks climate change law. This paper seeks to determine how capable South Africa's domestic framework is of facilitating climate change mitigation. It espouses the view that a robust and comprehensive regulatory framework is necessary for meaningful domestic mitigation action. It emphasizes the importance of regulatory certainty – where adoption and enforcement of the framework are concerned. The current regulatory framework – despite its fragmented, ad hoc nature – is already advancing limited mitigation action. This limited success can be amplified by the adoption of a better developed, more comprehensive framework.

Dedication

I dedicate this Research Report to God, to my mother and father and to myself. I also dedicate it to my family past, my family presently and my future family. This research report (and LLM) is a testament to what we can do when we do it together.

Acknowledgements.

I count myself truly blessed to have completed this degree. My community know the pain and suffering that I endured to complete and submit this research report - thank you so much for being there for me. You – my friends, my family, my community – carried me through every moment of despair. I want you to know that you were – you are – the biggest inspiration for my triumph.

There are too many people for me to thank, so I will thank you personally when I see you, however, there are some who deserve special thanks:

To God: "Laudato Si', mi' Signore" - "Praise be to you, my Lord" through our Sister, Mother Earth, who sustains and governs us, and who produces various fruit with coloured flowers and herbs". I dedicate this Research Report, its contents, its challenges and its triumphs to God who has provided us with this beautiful Earth and provided me with the wonderful opportunity I had to complete this degree. Lord, may this research report help preserve this home that you have provided us with.

To my Catholic community: My friends, you are a source of blessing and consolation. You are a safe space for me in the daily tribulations of the past few years. You are inspiration enough to face an uncertain future. United, we are both undefeated and, in my opinion, unbeatable. Stay faithful.

Aunty Jane, Nicole and the Mons Family: You are my second home. Apart from my own family, I don't think any group of people have prayed harder or cared more for me in my entire life. You should hold your heads up high for your undying faith and perseverance throughout the past couple of years, but even more so for the way you have ultimately flourished in the face of immense adversity. You are a testament to the way that God continues to work in and through our families.

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She is a queen amongst women and I was blessed enough to be raised by her. My mother is an unstoppable force of nature overcoming time and again immovable barriers. She - more than anyone I know - has experienced an unprecedented amount of torment and suffering

over the past four years. Thank you, Mama, for all that you do and all that you are to us. Brother, Dada and I could never thank you enough for being the driving force behind this family and for raising us into the men that we have become. You are one of the most inspirational people I know and you – more than anyone else – helped me complete this LLM. I know you love me, but I love you more.

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1. Introduction

South Africa's National Response Paper to Climate Change[1] refers to climate change as the ongoing change in the planet's general weather and climactic conditions due to an average rise in the temperature of the earth's surface.[2] The international scientific community unequivocally agree that anthropogenic influence has warmed the atmosphere, ocean and land.[3] This temperature increase is principally due to an exponential increase in greenhouse gas (GHG) emissions resulting from increased anthropogenic activity.[4]

The consequences of climate change are experienced differently across the globe ranging from minor to catastrophic – depending on location.[5] It is an inevitable and urgent threat, impacting every nation and human.[6] The increase in scientific evidence and global awareness has placed climate change on the international agenda as the preeminent existential challenge of our generation.[7] Thus, the international response to this crisis has accelerated significantly since the early 1990s with the establishment of the Intergovernmental Panel on Climate Change (IPCC)[8] and the formation of the United Nations Framework Convention on Climate Change (UNFCCC).[9] The world has rapidly accelerated from climate apathy to an urgent awareness

[1] White Paper on the Renewable Energy Policy of the Republic of South Africa in GG 26169 (14 May 2004) GN 513. ('NCCRP').
[2] Ibid 8.
[3] V Masson-Delmotte, P Zhai, A Pirani (eds) et al *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (2021)*. (Furthermore 'IPCC AR6').
[4] Ibid read with NCCRP 8. GHGs create a greenhouse effect by surrounding the earth in an insulation barrier limiting the amount of heat escaping the atmosphere thus raising the planets temperature.
[5] IPCC AR6 (note 3 above) 32.
[6] H Le Treut, R Somerville, U Cubasch et al 'Historical Overview of Climate Change' In S Solomon, D Qin, M Manning (eds) et al *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (2007) 95.
[7] <https://climate.mit.edu/ask-mit/why-do-some-people-call-climate-change-existential-threat>.
[8] <https://www.ipcc.ch/about/>. The IPCC is the UN body responsible for assessing climate change science.
[9] Le Treut et al (note 6 above) 95.

about this impending catastrophe.[10] Climate change mitigation has now become a universal necessity and the UN regards it as the singular defining crisis of our time.[11]

South Africa regards climate change as a principal driver of change in its developmental future.[12] The National Development Plan (NDP) notes that the significant global cost of the crisis will be felt disproportionately by the poor.[13] However, the country enjoys a strained relationship with climate change mitigation. South Africa is the one of earth's highest GHG emitters per capita due to its dependency on coal combustion – its primary energy source.[14] Coal combustion accelerates climate change through its emissions intensive combustion process which floods the atmosphere with harmful GHGs accelerating the greenhouse effect and consequently climate change.[15]

South Africa's coal dependency emerged due to its – historically – relatively low-cost supply and its reliability as an effective power source, it was also advanced by a pro-coal energy regulatory framework.[16] However the 2019 Integrated Resource Plan (IRP) flags this power supply for its immense GHGs emissions.[17] This dependency is further complicated by the sector's status as a primary employment and socio-economic driver domestically. These competing priorities are important considerations as they impact South Africa's climate change response.

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[10] Ibid.
[11] <https://www.un.org/en/un75/climate-crisis-race-we-can-win>.
[12] National Planning Commission *Our future – make it work. National Development Plan 2030 Executive Summary* (15 August 2012) 18.
[13] Ibid 23.
[14] Department of Energy *Integrated Resource Plan* (October 2019) 8;11. 73.5% of South Africa's power is generated by coal-combustion.
[15] IPCC AR6 (note 3 above).
[16] R Chevallier, 'South Africa's Dilemma: Reconciling Energy-Climate Change Challenges with Global Climate Responsibilities' in P Draper and I Mbirmi (eds), *Climate Change and Trade: The Challenges for Southern Africa* (2010) 145, 146.
[17] IRP 8.

South Africa has successfully advanced climate change mitigation to a certain extent recently. These advances include publishing the Carbon Tax Act[18] and the IRP2019 which formulated stronger policy to enable future climate change interventions.[19] The judiciary has also contributed to climate change mitigation in the *Thabametsi*[20] case. The executive has affirmed its commitment to mitigating climate change[21] and is actively seeking guidance on a path forward for the country.[22] However, to date, the country lacks effective climate change law. This report notes a lack of will in implementation and enforcement of existing policy as shortfalls in the mitigation effort.

This paper seeks to determine how capable South Africa's legal framework is of facilitating climate change mitigation. The paper will investigate climate change in the South African context – paying heed to both international and domestic considerations in this regard. It will consider the importance of a robust and comprehensive regulatory framework for effective climate change mitigation purposes. It will define effectiveness for the purposes of climate change mitigation. The paper will critique the existing climate change framework in order to discover its current degree of effectiveness for advancing mitigation. The report will look for the frameworks successes and shortfalls and display how – despite its fragmented, ad hoc nature – it is already advancing limited mitigation action. This report fundamentally seeks to determine how effective South Africa's climate change framework is at facilitating and advancing climate change mitigation.

Part I of this report will introduce the existential crisis of climate change both internationally and domestically. Part II will highlight the necessity of a strong regulatory framework if the

[18] Carbon Tax Act 15 of 2019 ('CTA').
[19] IRP 15.
[20] *Earthlife (Johannesburg) v Minister of Environmental Affairs* (2017) 2 All SA 519 (GP). ('*Thabametsi'*).
[21] <http://www.thepresidency.gov.za/from-the-desk-of-the-president/desk-president%2C-monday%2C-24-august-2020>.
[22] <https://www.gov.za/speeches/president-cyril-ramaphosa-receives-recommendations-presidential-climate-commission-2-jul>.

country is to effectively advance climate change mitigation. Part III will examine the existing international climate change instruments to which South Africa is a party. Part IV will investigate the existing regulatory framework comprising of the various policy documents, binding law and judicial contributions. Part V will determine the efficacy of the framework for mitigation purposes.

2. Climate change in the global and South African context

2.1 Causes and effects of climate change

Climate change is the variation in regular weather patterns attributed to the Earth's local, regional and global climates as observed over an extended period.[23] This change would occur naturally in time, however, the effects of the phenomenon have been accelerated primarily by human activity since the early 20th century.[24] Atmospheric concentrations of CO_2 have not reached today's levels in hundreds of millennia.[25] This increase in atmospheric GHGs has caused an alarming increase in temperatures spawning a plethora of irreversible environmental concerns and threats.[26]

Research shows that as much as 40% of global CO_2 emissions result from unsustainable energy production derived from coal combustion alone.[27] The IRP2019 observes this domestically too, as coal-fired electricity is one of South Africa's most emissions-intensive industries which – in addition to liquid fuel production – contributed approximately 40% of the country's total annual GHG emissions.[28] This CO_2 intensive energy supply marks the country out as a

[23] R Pachauri and L Meyer (eds) *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change'* (2014) 44-6. ('IPCC AR5'). See <https://climate.nasa.gov/resources/global-warming-vs-climate-change/>.
[24] Ibid. IPCC AR6 (note 3 above) SPM9.
[25] Ibid 44. TM Lenton, J Rockström, O Gaffney et al 'Climate tipping points — too risky to bet against' (2019) 575 *Nature* 595.
[26] Ibid. IPCC AR6 (note 3 above) SPM28. GHGs have caused irreversible changes, especially in the ocean, ice sheets and global sea level.
[27] M Jakob, JC Steckel, F Jotzo et al 'The future of coal in a carbon-constrained climate' (2020) Vol10 *Nature Climate Change* 702.
[28] IRP 8.

significant contributor to global GHG emissions and one of earth's highest GHG emitters per capita.[29]

Most consequences of the climate change phenomenon are experienced as environmental repercussions.[30] Observed changes to the climate are visible in the atmosphere, cryosphere, oceanic ecosystem, and sea level.[31] The IPCC anticipates climate change will likely cause mass species extinction and ecosystem eradication this century.[32] Thus, climate change is often deemed an environmental concern – the World Wildlife Fund (WWF) calls it the single biggest environmental challenge humanity has encountered.[33]

Africa is particularly vulnerable, local temperatures are expected to rise faster than the global average.[34] A global average temperature increase of 2°C translates to a possible 4°C increase for South Africa.[35] Human health is also directly impacted as higher temperatures cause more heat-related mortalities and enable further disease spread like malaria and other water or food borne pathogens.[36] The crisis threatens economic livelihoods as weather conditions affect households dependent on sensitive resources like agricultural and fishing communities.[37] African countries are progressively more likely to struggle with food insecurity due to

[29] Ibid.
[30] <//www.un.org/en/sections/issues-depth/climate-change/>.
[31] Observed changes noted in IPCC AR5 (note 23 above) 1.1.1 – 1.1.4.
[32] O Hoegh-Guldberg, D Jacob, M Taylor (eds) et al *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (2018) 175, 218. <https://www.wwf.org.uk/learn/effects-of/climate-change> 1.5°C temperature increase puts 20-30% of species at risk of extinction.
[33] Ibid.
[34] I Niang, OC Ruppel, MA Abdrabo, (eds) et al *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* 1199, 1206-9.
[35] <https://www.greenpeace.org/africa/en/blogs/4210/ipcc-special-report-on-1-5%E2%80%8B%E2%80%8Bc-and-its-implications-for-south-africa/>. A qualitative examination of this claim shows that there is a 60%-80% likelihood that its true - <www.csag.uct.ac.za/2019/09/25/twice-the-global-rate/>.
[36] MF Chersich, CY Wright, F Venter et al 'Impacts of Climate Change on Health and Wellbeing in South Africa' (2018) August 1884 *International Journal of Environmental Research and Public Health* 5-7.
[37] Ibid 8.

inconsistent precipitation.[38] The World Bank estimates that a 2°C temperature increase would cripple Africa's economy, and per capita consumption would decrease by 4-5%.[39]

South Africa faces several existential environmental threats due to climate change. The NDP anticipates concerns surrounding food production, livelihood and water security.[40] These impacts will be disproportionately felt by the poor, especially women and children.[41] Additionally, notable impacts have already been felt in temperature and rainfall variations alongside rising sea levels.[42] These concerns noticeably impact the natural environment,[43] and they also severely curtail South Africa's socio-economic output.

South Africa has acknowledged the gravity of the climate change crisis and has responded primarily through its policy framework. The ramifications of climate change pose a significant threat, however there are other socio-economic concerns which inhibit a more focused approach to climate change mitigation. This requires a policy framework capable of addressing the socio-economic and environmental crises plaguing the country. These socio-economic challenges will now be discussed.

2.2 Coal dependency in South Africa

Coal combustion is South Africa's historically preferred energy source.[44] This relatively cheap resource has successfully advanced wholesale access to electricity – a right historically denied to most South Africans.[45] The coal sector is also a primary socio-economic driver domestically

[38] TS Masipa 'The impact of climate change on food security in South Africa: Current realities and challenges ahead' (2017) 9(1), a411 *Jàmbá: Journal of Disaster Risk Studies* 4-6. Niang (note 37 above) 1210. The IPCC projects significantly reduced future precipitation in Southern Africa.
[39] <https://www.greenpeace.org/africa/en/blogs/4210/ipcc-special-report-on-1-5%E2%80%8B%E2%80%8Bc-and-its-implications-for-south-africa/>.
[40] NDP.
[41] Ibid.
[42] Ibid 38.
[43] NCCRP 9.
[44] IRP 146. See T Mdluli and C Vogel, 'Challenges to Achieving a Successful Transition to a Low Carbon Economy in South Africa: Examples from Poor Urban Communities' (2010) 15 *Mitigation and Adaptation Strategies for Global Change* 205, 209. Organisation for Economic Co-operation and Development-International Energy Agency (OECD), 'Toward a Sustainable Energy Future' (2001) 75.
[45] Ibid (Mdluli & Vogel) 209.

through employment opportunities and job creation [46] However, most of South Africa's GHGs are emitted by burning coal for electricity.[47] Consequently, domestic climate change concerns are intricately linked to South Africa's socio-economic reality.

South Africa is adjudged by the UN to be the world's most economically unequal country.[48] The exorbitantly high unemployment rate,[49] was reduced by the coal economy which contributed up to 92,230 domestic jobs in 2019.[50] It also contributed approximately R27.9 billion – almost 5% of the 2019 GDP - to the economy.[51] The coal sector is crucial for South Africa's economic success and shuttering this industry is neither likely nor even possible in the near future.

The unemployment crisis is compounded by South Africa's energy production crisis. Since 2008, Eskom – the state-controlled service provider – has been incapable of consistently providing sufficient energy for the nation.[52] To compensate for this supply shortfall, Eskom resorted to 'loadshedding' – a series of scheduled planned power disconnections for specific areas on a rotational basis.[53] Eskom's credibility is also heavily questioned due to its association with corruption and fraudulent activity.[54]

The *Thabametsi* case appropriately identified the coal-fired power sector as a microcosm of the conflict between socio-economic development and environmental protections. The court deemed the sector self-harming as coal-fired power contributes significantly toward climate

[46] NDP 39. See <https://www.mineralscouncil.org.za/sa-mining/coal>.
[47] IRP 8;15.
[48] United Nations Department of Economic and Social Affairs, 'World Social Report 2020 Inequality in a Rapidly Changing World' (2020) 24.
[49] <http://www.statssa.gov.za/?p=14957>. The official unemployment rate was 34,9% in the third quarter of 2021.
[50] Minerals Council (note 46 above).
[51] <https://www.imf.org/external/datamapper/PPPPC@WEO/ZAF>. IMF estimates domestic GDP for 2019 at $358.84 billion.
[52] HA Strydom, E Cairncross 'Energy' in N King, H Strydom & FP Retief Fuggle & Rabie's *Environmental Management in South Africa* 3rd ed (2018) 459, 497.
[53] Ibid.
[54] Ibid. Public Protector South Africa *State of Capture* (October 2016).

change and thereby ultimately threatens its own existence.[55] The court observed that emission intensive coal combustion accelerates the effects of climate change in South Africa – a water-stressed country. This increases the likelihood of future weather variability like cycles of droughts interrupted by sudden, excessive rains potentially causing floods. As water scarcity and weather variability increase due to climate change, energy production will also be affected as coal combustion is highly water intensive.[56] It is therefore imperative that South Africa mitigate climate change in order to avoid any adverse environmental repercussions which could directly impinge the country's fragile socio-economic development.

South Africa finds itself at a crossroads with international ramifications, torn between prioritising environmental protection and climate change mitigation – via emission reduction – or advancing desperately needed socio-economic development – powered by coal. Does the country favour socio-economic development to the detriment of the environment and the globe, or does it sacrifice domestic development? Historically the nation favoured socio-economic development.[57] However, sustainable development proposes a solution to these conflicting priorities.

2.3 Sustainable development

Sustainable development advocates for environmentally friendly socio-economic development.[58] Section 24 of the Constitution of the Republic of South Africa, 1996 ensconces sustainable development within the environmental regulatory framework.[59] Winkler theorises

[55] *Thabametsi* (note 20 above) para 29.
[56] Ibid.
[57] M Kidd & E Couzens 'Climate Change Responses in South Africa' in J Erkki et al (eds) *Climate Change and the Law* (2013) 619, 638.
[58] G Brundtland (1987) Report of the World Commission on Environment and Development: Our Common Future 43.
[59] The Constitution of the Republic of South Africa, 1996. ('The Constitution') s24.

sustainable development as a solution by asking 'how can energy policies for sustainable development become an approach to mitigating climate change?'[60]

Ideally, sustainable development could be the solution. Here, the conflicting crises considered previously would serve to solve one another. Environmentally friendly, socio-economic development could remedy the unemployment and energy crises at the same time. For, example coal sector employees with electricity generation experience could move into renewable energy projects which supplement the flagging power supply. This is one of the tenets of the 'Just Transition' proposed in the IRP.[61]

Importantly, sustainable development is already binding domestic law, but a lack of enforcement and political will inhibit its effectiveness. Sustainable development will not be discussed further presently as it falls outside the scope of this report. Nevertheless, this report fundamentally calls for a legal framework capable of promoting sustainable development for mitigation purposes.

While the climate change crisis is an existential global concern; South Africa evidently faces its own antagonistic crises too. There are, however, solutions and opportunities available to address both sets of crises simultaneously. The next part will discuss one of the most effective methods of facilitating effective climate action - the establishment of a robust enabling regulatory framework capable of facilitating mitigation in the face of South Africa's socio-economic constraints.

[60] H Winkler 'Energy policies for sustainable development in South Africa' (2007) March Vol 11, Issue 1 *Energy for Sustainable Development* 26.
[61] IRP 44-5. A just transition shifts a nation's economic activity and priorities away from historically high-emissions and exclusive development toward a more environmentally friendly low-emissions and inclusive developmental approach. In order to be just, the transition must leave no-one behind. See H Winkler, E Tyler, S Keen & A Marquard 'Just transition transaction in South Africa: an innovative way to finance accelerated phase out of coal and fund social justice' (2021) 1 *Journal of Sustainable Finance & Investment* 2-3.

3. Effective change through a strong regulatory framework

If a state intends to adopt certain behaviours or meet specific targets, enforcing a strong regulatory framework is crucial. However, the creation, adoption, evolution, and implementation of a robust and flexible regulatory framework is essential for its enforcement. When such a framework exists, legal disputes are easier to resolve through regulatory application. Where framework compliance is not forthcoming, it also improves the likelihood of successful litigation action – especially in a novel regulatory sphere such as climate change governance.[62]

This piece is premised on the claim that effective climate change mitigation is enabled by a strong regulatory framework, thus it is appropriate to define what 'effective' means. For a framework to be effective it cannot solely exist as words on a page, it has to incite the action required to attain the desired objective.[63] For this report, 'effective' is understood in the manner Bodansky defines as 'problem-solving effectiveness'.[64] This understanding focuses on the degree to which a law achieves its objectives or, simply, solves the problem it addresses.[65]

Problem-solving effectiveness pursues legal compliance through behavioural change from the individual and the collective public.[66] It examines how the regulatory framework affects behaviour and in turn how behavioural change affects environmental outcomes.[67] Thus, effective climate change mitigation, requires a broad behavioural change from all societal levels whereby society behaves in a pro-mitigation manner.[68] This type of change is

[62] LJ Kotze & A du Plessis 'Putting Africa on the Stand: A Bird's Eye View of Climate Change Litigation on the Continent' (Summer 2020) *Environmental Law* 615, 620.
[63] D Bodansky 'Implementation of International Environmental Law' 54 (2011) *Japanese Yearbook of International Law* 62, 63-64.
[64] Ibid.
[65] Ibid 67.
[66] Ibid.
[67] Ibid 68.
[68] Ibid.

colloquially known as ‘grassroots change’. Nothing short of this national buy-in from a grassroots level will successfully mitigate climate change.

A law’s effectiveness depends on several factors, with implementation preeminent amongst them. Implementation depends heavily on a state’s legislature and executive – the primary authorities charged with adopting and implementing an effective framework.[69] An ineffective regulatory framework however, does not preclude action from taking place entirely as mitigation can be advanced through the judiciary.[70] The judiciary plays an important role in enforcing their legal framework if they are so enabled.[71] Courts are thus obliged to hold legislatures and executives accountable for fulfilment of their relevant international commitments in their jurisdictions.[72]

Judicial intervention – while invaluable in mitigating climate change – is inherently limited for several reasons. If there is no enabling normative framework, courts aren’t well-equipped to advance mitigation lest they be castigated for judicial overreach.[73] Litigation is a reactionary, expensive and relatively slow process, especially where the underpinning legal framework is limited.[74] This also presumes the court’s amenability to advancing climate change mitigation, a stance not inherently possible in every legal dispute.[75] It is too inefficient, expensive and possibly ineffective to litigate a way to climate change mitigation. This crisis requires urgent intervention and developing an enabling legal framework through perpetual litigation will not happen quickly (if ever). Thus, the creation and evolution of a normative framework is the best

[69] Ibid.
[70] See Kotze & du Plessis (note 62 above) 623.
[71] JSC Carnwath ‘Climate Change Adjudication After Paris: A Reflection’ (2016) 28 *Journal of Environmental Law* 5, 9.
[72] Ibid.
[73] Kotze & du Plessis (note 62 above) 641.
[74] Ibid 662.
[75] Ibid.

way to respond to this crisis as it affords legal certainty and enables stronger judicial interventions where necessary.[76]

South Africa's minimal climate action historically evidences a need for drastic behavioural change if it intends to mitigate climate change effectively. Bodansky proposes enabling legislation as the most effective manner to drive such a change.[77] This presents a regulatory solution in instances – such as the present climate change crisis – where implementation of the framework, must control private or sub-state actors and the state.[78] Here, the legal norms and principles – which structure the regulatory framework – lay foundations upon which legal rights and duties can be built.[79] They stipulate how powers or liabilities can be exercised or interpreted.

Legislative implementation inevitably provides stronger assurance of compliance.[80] It also tends to make the law more transparent than administrative.[81] Implementing a regulatory framework inclusive of enabling legislation does not necessarily ensure compliance, however, it is a strong first step in this regard.[82] Thus, such a comprehensive regulatory framework will be better equipped to drive the sought-after behavioural change.

The domestic coal regulatory framework exemplifies how a strong regulatory framework increases the likelihood of effective implementation. This framework developed extensively over time[83] and almost every aspect of the coal sector is regulated.[84] This contributes

[76] Carnwath (note 71 above) 9.
[77] Bodansky (note 63 above) 72.
[78] Ibid.
[79] R Maguire 'Incorporating International Environmental Legal Principles' (2012) Vol. 6 No. 2 *Carbon & Climate Law Review* 101, 104.
[80] Bodansky (note 63 above) 72.
[81] C Redgwell 'National Implementation' in D Bodansky, J Brunnée & E Hey (eds) *The Oxford Handbook of International Environmental Law* 929.
[82] Bodansky (note 63 above) 73; 80.
[83] L Nupen, N Limberis-Ritchie & C Murdock 'South Africa' in *International Comparative Legal Guides Mining Law 2021* (2020) 87. Mining law is predominantly regulated by the Mineral and Petroleum Resources Development Act 28 of 2002.
[84] Chamber of Mines of South Africa *Coal Strategy* (2018) 1.

significantly to the sector's success.[85] The NDP secured the domestic coal supply for the energy sector[86] and six years later the Coal Strategy noted many NDP declarations were either already implemented or well on their way there.[87] Policy adoption and regulatory certainty drive change.

The coal framework holds limited relevance for climate change mitigation.[88] However, it is indisputable that the well-regulated nature of the sector helps bolster the industry.[89] The climate change framework does not have such a well-developed framework, thus implementation is lacking. The climate change framework should emulate the regulatory approach of its older pollutive sibling if it intends to mitigate climate change.

While effectiveness is the goal, an absence of action will be its death, thus, action is imperative for effectiveness. The most effective way to incite action is to implement a robust regulatory framework. Accordingly, the report will now transition from a theoretical enquiry toward an appraisal of ongoing international and domestic climate action. Both the international and domestic climate change frameworks will now be evaluated to determine their effectiveness for driving mitigation action.

4. International climate change instruments

The internationally adopted climate change instruments are a precursor to South Africa's legal framework. As such, the evolution of the UNFCCC is an important consideration for the domestic framework. To help determine the effectiveness of the domestic framework, the – locally binding – international framework must also be evaluated.

[85] Ibid 2.
[86] NDP 46; 65; 165-7.
[87] Ibid. Coal Strategy (note 84 above) 20.
[88] Ibid 1. The Coal Strategy deems environmental policies aimed at reducing carbon emissions as a constraint for the industry.
[89] Ibid 2; 25.

4.1 United Nations Framework Convention on Climate Change – 1992

The UNFCCC[90] is the UN entity tasked with coordinating and formulating a global response to climate change.[91] The UNFCCC evolved into the 1997 Kyoto Protocol (KP)[92] and thereafter the 2015 Paris Agreement (PA).[93] The UNFCCC's supreme decision-making body – the Conference of the Parties (COP) – meet annually to assess climate change mitigation progress and to implement its mandates.[94] The cornerstone objective of the UNFCCC is to stabilize atmospheric GHG concentrations at a level which prohibits further harmful anthropogenic interference in climactic conditions and natural ecosystems.[95]

The UNFCCC classified member-states as Annex I parties – industrialized countries and countries transitioning into a market economy – and Annex II parties – developed countries who pay the climate change associated costs of developing countries.[96] States not classified above were designated developing states (or non-Annex states) whose costs were liable to be paid by Annex II states.[97] Consequently, a member-states' classification was crucial for determining their role in the mitigation effort, it would determine whether they were to provide or receive foreign aid.[98]

The UNFCCC was relatively successful as it planted climate change firmly on the global agenda, however it was not perfect. It focused exclusively on the role of developed nations in

[90] United Nations General Assembly (1992) United Nations Framework Convention on Climate Change.
[91] <https://unfccc.int/about-us/about-the-secretariat>. It is the parent treaty of the Kyoto Protocol and Paris Agreement and it has near-universal membership.
[92] UNFCCC Conference of Parties 3 in Kyoto, Japan (11 December 1997) Kyoto Protocol to the United Nations Framework Convention on Climate Change. ('Kyoto Protocol').
[93] UNFCCC Conference of Parties 21 in Paris, France (12 December 2015) Paris Agreement to the United Nations Framework Convention on Climate Change. TIAS No. 16-1104. ('Paris Agreement').
[94] UNFCCC art7.
[95] UNFCCC Objective, arts5; 7; 21.
[96] Ibid Objective; art3;4(4).
[97] <https://climatechangeconnection.org/solutions/international-solutions/unfccc/>.
[98] UNFCCC art4 - Annex II states must provide developing states with financial and technological support specifically for climate change mitigation action.

the mitigation effort, ignorant of the role developing countries should also play.[99] It suffered policy implementation shortfalls, post adoption,[100] and it was condemned for its focus on aggressive short-term interventions.[101] Unfortunately, some of these problems persisted in the KP too.

4.2 Kyoto Protocol – 2005

The KP sought to operationalise the UNFCCC and remedy its shortfalls. It attempted to reduce GHG emissions with specific emission targets set by Annex I and II nations themselves. This substantive development established legally binding targets and timetables for these nations to reduce their GHG emissions.[102] Unfortunately, like the UNFCCC, the KP was only binding upon developed countries.

Substantively the KP differed slightly from the UNFCCC. Annex I and II nations were apportioned more blame through 'common but differentiated responsibility and respective capabilities' – in line with the UNFCCC's recognition that these nations are largely responsible for the high concentration of atmospheric GHG emissions.[103] As such, the KP sets binding emission reduction targets for Annex I and II states only.[104]

The KP was more specific than the UNFCCC, but it failed to address its fundamental shortfalls. Developing countries were not adequately accommodated under the KP as they weren't generally required to reduce emissions. This approach was criticised as many felt that the split between Annex I and developing countries was unfair.[105] The KP also established a moral

[99] RJ Kopp 'The Climate Has Changed—So Must Policy' (2011) March Issue Brief 11 - 03 *Centre for Climate and Electricity Policy, Resources for the Future* 3-4.
[100] Ibid 4. Policy implementation was deemed ineffective due to a lack of compliance enforcement measures.
[101] Ibid. This short-term focus had no real scientific basis.
[102] Kyoto Protocol art3. See <https://unfccc.int/kyoto_protocol>.
[103] Ibid.
[104] Kyoto Protocol Annex B. See KP art3(1).
[105] <https://climatechangeconnection.org/solutions/international-solutions/unfccc/>.

responsibility upon all member states to reduce emissions however, it failed to include measures effectively ensuring compliance.[106]

South Africa as a developing nation was a non-Annex state. Thus, neither the UNFCCC nor the KP placed any binding responsibility upon the country to stabilize domestic GHG emissions. The KP only became binding upon South Africa and other developing nations with the advent of the PA.[107]

4.3 Paris Agreement – 2015

The PA is recognized as the first binding agreement to successfully unite all nations in a shared effort to combat climate change.[108] The PA seeks to be a unifying instrument which formulates and coordinates a global response to climate change.[109] South Africa is a member state of the PA.[110] The operating manual or 'rulebook' of the PA was drawn up in COP24 held in Katowice, Poland in 2018.[111]

The PA differs substantially from its predecessors as it supports all forms of action from both developed and developing states.[112] It highlights the plight of developing states who require assistance, deeming them the globe's most vulnerable countries.[113] It also empowers them to determine their own approach to mitigation in a feasible manner, in accordance with their national objectives.[114]

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[106] J Hovi, C Bretteville Froyn & G Bang 'Enforcing the Kyoto Protocol: Can Punitive Consequences Restore Compliance?' (2007) July 33 No.3 *Review of International Studies* 435, 436. See S Barrett, *Environment and Statecraft. The Strategy of Environmental Treaty-Making* (2003) 385-6.
[107] Ibid article 3(3), 6 and 12 and Kopp (note 99 above) 5.
[108] Paris Agreement art2(1)(a); 11. See <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>.
[109] Ibid.
[110] <https://www.environment.gov.za/mediarelease/southafrica_ratifies_parisagreement>.
[111] European Parliamentary Research Service (January 2019) 'COP24 climate change conference: Outcomes. EPRS' Research Service PE 633 139. ('EPRS').
[112] Paris Agreement art2(1)(a).
[113] Ibid. This assistance comes in interventions such as securing sufficient funding, developing a new technological framework, and developing an enhanced capacity-building framework to combat the crisis at every level.
[114] Ibid art4(1).

One of the PA's key instruments for limiting GHGs is the Intended Nationally Determined Contribution (NDC).[115] This NDC mechanism allows member states to steadily limit domestic GHGs at a self-determined acceptable rate for a nation and their interests.[116] PA member states must provide the UNFCCC with an NDC which sets out their best plan to combat climate change domestically.[117] After submitting their first NDC, states are expected to progressively strengthen and develop their national efforts.[118]

The PA established a culture of transparency amongst member states which is essential for enforcement purposes. PA members are empowered to regulate themselves almost freely, however, they are expected to report regularly on their mitigation efforts in terms of this transparency framework.[119] Member states would therefore find themselves accountable to one another in terms of the transparency framework and where necessary, nations failing to meet their NDC commitments could access support from their counterparts.[120]

The PA seeks to peak in international GHG emissions as soon as possible.[121] As total international emissions peak – stops increasing – they plateau and the rate of climate change stabilises.[122] This peaking solution does not encourage widespread emission in the short term, rather it attempts to hasten progress toward a net-zero emissions planet.[123] South Africa's first NDC – discussed below – was characterised by this peaking model.

[115] Ibid art4.
[116] Ibid.
[117] Ibid art4(1).
[118] Ibid art4(3).
[119] Ibid art4(9).
[120] Ibid art7.
[121] Ibid art4(1).
[122] Ibid. Increasing GHG emissions accelerate the rate of climate change. Thus, if earth's GHG emission amount reaches its highest amount and stops climbing - or peaks – the rate of climate change stops accelerating. As the emission amount plateau's, the rate of climate change remains constant and when emission start decreasing the rate of climate change will consequently decelerate.
[123] Ibid.

COP24 held in Katowice, Poland, formulated the PA's implementation handbook which successfully gave it an operational interpretation.[124] It also established a common process and plan which nations could adopt domestically for reporting at an equal standard.[125] This aided communication between states and increased their accountability to one another.[126]

South Africa, as a PA signatory, is bound by its rules.[127] This establishes certain international obligations and requires the advancement of domestic climate action. It is therefore appropriate to discuss South Africa as a member of the PA.

4.4 South Africa and the Paris Agreement

Throughout the UNFCCC's evolution, South Africa was never classified as an Annex I or II state, accordingly it is deemed a developing – non-Annex – state.[128] Therefore, it had no obligation to reduce domestic emissions until it adopted the PA.[129] As a member of the PA South Africa released its first NDC in 2015[130] and a revised NDC in late 2021.[131]

The 2015 NDC was lauded for its well-informed domestic commitments and its call for international cooperation.[132] It favoured an aggressive peak, plateau and decline model[133] to reach a GHG emissions peak as soon as possible and thereafter to steadily minimise them.[134]

[124] See EPRS (note 111 above).
[125] Ibid.
[126] EPRS (note 111 above).
[127] South Africa's first NDC was submitted in 2015.
[128] Kyoto Protocol Annex B. See Kyoto Protocol art3(1).
[129] Under the UNFCCC and the Kyoto Protocol – as discussed above – developing states were not obliged to limit emissions. DEFF (note 110 above).
[130] South African Cabinet *Intended Nationally Determined Contribution* (September 2015) ('2015 NDC').
[131] South African Cabinet *First Nationally Determined Contribution Under The Paris Agreement Updated September 2021* (September 2021). ('2021 NDC').
[132] WWF-SA 'Statement on South Africa's Independent National Determined Contribution' 1. <http://awsassets.wwf.org.za/downloads/indc_south_africa_statement_by_wwf_sa.pdf>.
[133] 2015 NDC (note 130 above) 1.
[134] Ibid 1;7. The 2015 NDC forecast a national emissions peak between 2020 and 2025, a plateau for approximately a decade and thereafter decline in absolute terms.

This NDC's initial favour faded as it became clear that it was 'Highly Insufficient'[135] for meeting the PA's commitment to keep global warming below 2°C.[136]

Since 2020, President Ramaphosa has championed South African climate action and firmly placed its international climate obligations on the national agenda.[137] This resulted in the submission of 'a credible NDC that reflects increased ambition' at COP26.[138] The ambitious 2021 NDC schedules an emissions peak in 2025 and decline at a lower emissions total until 2030.[139] This will happen sooner and at a lower emissions amount than its predecessor's target.[140] Early feedback has been positive;[141] however its success relies upon the immediate implementation of an enabling regulatory framework.[142]

South Africa's mitigation efforts recently received a windfall at COP26 as a coalition of developed nations committed R131 billion to the nation's mitigation effort.[143] President Ramaphosa secured this investment to drive the country's just transition effort to move away

[135] <https://climateactiontracker.org/countries/south-africa/>. Climate Action Tracker ('CAT') is an independent scientific analysis organisation which tracks international government climate action. The December 2020 update of CAT's assessment of South Africa deemed the first NDC 'Highly insufficient' and further condemned it as being inconsistent with the PA's commitment to keep global warming below 2°C. See <https://climateactiontracker.org/countries/south-africa/> for more information.
[136] M Boulle, S Mooldijk, L Kahlen et al 'South Africa December 2020. Climate Governance Assessment of the government's ability and readiness to transform South Africa into a zero emissions society' (2020) December *Climate Action Centre - Climate Action Governance Series.*
[137] Desk of the President (note 21 above).
[138] PCCC Recommendations (note 22 above).
[139] E Tyler & G Steyn 'What does South Africa's updated nationally determined contribution imply for its coal fleet?' (2021) September No.1 *Meridian Economics Briefing Note* 1.
[140] Ibid.
[141] See <https://cer.org.za/news/cabinets-more-ambitious-climate-target-a-step-in-right-direction>.
[142] Ibid and CAT (note 135 above).
[143] <https://www.iol.co.za/news/world/cop26-south-africa-secures-around-r131-billion-to-phase-out-coal-aff3467b-03d0-5ec3-a965-c7a0908ab681>. Notably, for the first-time COP26 called on nations to limit unabated coal power and subsidies for fossil fuels. It renewed efforts to bolster climate change resilience, limit GHGs and to provide financing in this regard. See <https://unfccc.int/process-and-meetings/the-paris-agreement/the-glasgow-climate-pact-key-outcomes-from-cop26> and <https://www.lawsociety.org.uk/topics/climate-change/reflecting-on-cop26-what-were-the-key-outcomes#:~:text=One%20of%20the%20major%20successes,and%20leaders%20summit%20in%202023>.

from coal and Eskom toward greener alternatives.[144] These recent developments bode well for South Africa's contribution toward the international PA mitigation effort.[145]

The international policy instruments considered above are vital for the global mitigation effort and they have done well to establish and coordinate a global mitigation effort. However, their success depends heavily upon individual states. Without domestic application and implementation, international policy is ineffective. As the international framework depends heavily upon the domestic framework, South Africa's regulatory framework must now be analysed to evaluate its mitigation effectiveness.

5. South Africa's regulatory framework

5.1 Policy Documents

5.1.1 National Development Plan – 2030

The National Planning Commission published the NDP in 2012. It espouses South Africa's long-term development strategy and national policy approach,[146] and seeks to eliminate poverty and reduce inequality.[147] Importantly, it acknowledges the climate change threat, and it insists on improving national mitigation, adaptation and disaster preparedness capabilities.[148]

The NDP appears to be climate friendly at first. Chapter 5 deals with environmental sustainability[149] and calls for domestic 'developmental challenges to be addressed in a manner which ensures environmental sustainability and builds climate change resilience'.[150] This lofty goal alongside other similar ones promulgates several ambitious commitments to fighting

[144] Ibid.
[145] See CER (note 141 above).
[146] NDP 1. See Boulle et al (note 136 above) 8.
[147] Ibid.
[148] Ibid 205-16.
[149] Ibid Chapter 5.
[150] Ibid 198.

climate change.[151] These aspirations do not seem easily achievable, however, as they are hampered by the country's challenging socio-economic context.[152]

Closer scrutiny of the NDP reveals that climate change is predominantly adjudged a vague social concern rather than an existential threat.[153] It declares unemployment and education as the nation's highest priorities and primarily focuses upon economic development.[154] It calls for infrastructure investment in specific GHG intensive sectors.[155] Public engagement noted that the NDP chapters dealing with energy and environmental concerns 'are contradictory and do not speak to each other sufficiently.'[156] Thus, the document is characterised as contradictory and inadequate for climate change mitigation.[157]

As this is a framework document, it need not lay out a detailed action plan. This is best accomplished by legislation and policy. Nevertheless, regulatory uncertainty is not helpful for a framework. The NDP undoubtedly calls for climate action, however it prioritises other carbon intensive sectors. Furthermore, the document lacks follow through regarding implementation and delivery.[158] As such, one cannot premise an effective mitigation strategy upon this document.

5.1.2 National Climate Change Response White Paper – 2011

The NCCRP is the first policy document to place climate change on the national agenda.[159] It set out the two factors most important for the national response: the effective management of

[151] N Segal & B Cloete 'Combating Climate Change: How might 'green' growth facilitate or hinder SA's developmental objectives?' (2012) *Centre for Development and Enterprise* 24.
[152] Ibid.
[153] 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 control strategies' (2016) 57 *Environmental Science & Policy* 70, 74.
[154] Ibid.
[155] Ibid.
[156] Ibid 24. T Gore & L McDaid '"You can't eat electricity" Why tackling inequality and hunger should be at the heart of low carbon development in South Africa' (2013) *Oxfam Discussion Papers* 24.
[157] Ibid.
[158] Ibid 13.
[159] NCCRP 10.

the inevitable climate change impacts and to contribute fairly toward the international mitigation effort.[160] This policy paper underpins the nation's greater climate change response and policy framework.[161] It introduced 'government's vision for an effective climate change response and the long-term, just transition to a climate-resilient and lower-carbon economy and society'.[162]

The NCCRP highlights and addresses South Africa's socio-economic and environmental concerns discussed previously. It calls for a developmental framework enabling interventions targeted at addressing these conflicting priorities.[163] The energy crisis is directly addressed through socio-economically responsible, adaptable and innovative programmes.[164] The document entreats greater energy use efficiency and interdepartmental collaboration to drive the deployment of renewable energy technologies.[165] The unemployment crisis is addressed in s9.[166] In the short to medium term, it calls for minimal job losses. It seeks to migrate labour away from unsustainable carbon intensive economic activities toward the green economy.[167] In the long-term the NCCRP envisions investing in human capital and productive resources as the key for sustainable growth.[168]

The NCCRP has proven its mitigation credentials on the policy plane as it has fostered several policy documents and laws. The 2015 NDC draws heavily from the peak, plateau and decline model espoused in s6.[169] The CTA legislated the s6 carbon budget approach into the regulatory framework.[170] It also called for national GHG emission monitoring and reporting which

[160] Ibid 5.
[161] Ibid 5-7.
[162] Ibid 10.
[163] Ibid.
[164] Ibid 31.
[165] Ibid.
[166] Ibid 34.
[167] Ibid.
[168] Ibid.
[169] Ibid 25;27.
[170] NCCRP s6 and 28-9.

became the GHG Emission Reporting Regulations (ERRs).[171] These targeted interventions intend to accrete toward South Africa's international contribution toward the global mitigation effort.

Initially, the NCCRP was lauded[172] subsequently however, it has been hamstrung by implementation shortfalls. Most deadlines have not been met, the ERRs were released four years late in 2017, the CTA was ratified six years late.[173] Most importantly, the new legislation envisioned in s10 is still outstanding. While the NCCRP has not been ineffective – steps have been made toward mitigation – it certainly has not been as effective as envisaged, primarily due to a lack of implementation.

This document managed to acknowledge urgent environmental considerations alongside pressing socio-economic concerns. The document supports climate change mitigation interventions with potentially successful plans while stimulating socio-economic growth nationally. The NCCRP has significant potential if it were followed by effective implementation, as such it is conducive for facilitating climate change mitigation.

5.1.3 Integrated Resource Plan – 2019

The IRP is vital for the domestic climate change mitigation effort. It acknowledges the negative environmental impacts of the existing electricity supply and seeks to rectify them.[174] It observes that almost 80% of domestic GHGs come from the energy sector.[175] The IRP declares GHG emission reduction a primary goal[176] evidencing government's desire to create an

[171] Ibid 29. National Greenhouse Gas Emissions Reporting Regulations, 2016 GN 275 in GG 40762 of 3 April 2017.
[172] WWF-SA 'Comments in Response to the National Climate Change Response White Paper'. <https://static.pmg.org.za/docs/111101wwf-edit.pdf>.
[173] NCCRP 28-9; 31.
[174] Ibid.
[175] IRP 8.
[176] Ibid 8-9.

environmentally friendly and efficient electricity sector. [177] As such, it calls for a change in the energy mix and a just transition toward a low carbon economy.[178]

The IRP laments South Africa's coal-dependent energy mix.[179] It calls for technological investment to improve coal-fired power efficiency.[180] The IRP champions renewable energy and its potential contribution toward energy production, innovation and job creation.[181] It calls for the adoption of power purchase agreements from renewable IPP's and the phasing out of coal power over the long term.[182] This plan envisions a steady abandonment of coal fired power running parallel to an increased adoption of clean coal technology.[183] These steps intend to reduce national GHG emissions.

Critically, the IRP is disparaged for its ongoing support of coal. It foresees the development of two new coal-fired IPP's alongside the expected completion of Kusile and Medupi.[184] This does not bode well for a successful just transition if the country is tying itself to coal obligations in the long-term.[185] For this just transition to take place it will require the phasing out of coal at a faster rate than the current forecast.[186]

The document calls for a socially just transition and provides an informed approach to this end.[187] Decision 4 calls for a single team to realise this ideal through a coherent policy approach. In September 2020, Cabinet complied with this decision as they approved the

[177] Ibid 36.
[178] Ibid ss1;2 and 5
[179] Ibid.
[180] Ibid 12. The IRP calls for investment into GHG reduction technologies like HELE technology, including supercritical and ultra-supercritical power plants with carbon capture, utilisation, and storage.
[181] Ibid 12-3.
[182] Ibid 43-4.
[183] Ibid.
[184] Ibid 46. See G Ireland & J Burton '*An Assessment of New Coal Plants in South Africa's Electricity Future: The Cost, Emissions, and Supply Security Implications of the Coal IPP Programme'* (2018). This source shows how these two projects harm both the fiscus and emit intensive GHGs.
[185] H Winkler, S Keen & A Marquard 'Climate finance to transform energy infrastructure as part of a just transition in South Africa' (2020) Research report for SNAPFI project.
[186] Ibid 20.
[187] IRP 44.

appointment of the Presidential Climate Change Coordinating Commission (PCCCC) to coordinate and oversee this just transition.[188] Some innovative and fiscally sound suggestions have been made for financing and facilitating the just transition in a post-COVID-19 economy.[189]

The IRP's success will only be determined in time; however, it has addressed some of the pertinent climate change concerns and the various socio-economic crises. It holds a well-intentioned, planned migration away from a carbon intensive economy utilising a socially just transition. This policy approach seeks to minimise adverse impacts which may arise and calls for innovation and job creation alongside environmental protection, economic prosperity, and social benefit.

There is strong evidence to suggest that IRP implementation is successful and ongoing, as seen by the establishment of the PCCCC. However, the pandemic has weakened political will and national capacity to mitigate climate change in the face of economic collapse.[190] The approval of the PCCCC alongside the publication of the new Low Emissions Development Strategy and a revised National Waste Management Strategy 2020 inspire hope that this political tide has turned.[191]

5.2 Constitution of South Africa – 1996

The Constitution – South Africa's supreme law – includes an environmental right provision in s24.[192] This provision underpins South Africa's environmental law framework. As it is a

188
<https://www.environment.gov.za/mediarelease/climatechange_emissionsreduction_wastemanagementplans>.
189 See Winkler et al (note 185 above). Ibid, cabinet has recommended a budget of R50 million for the PCCCC's five-year term .
190 Boulle et al (note 136 above) 1. Initial proposals by the South African government for economic recovery indicate a focus on carbon-intensive investments instead of prioritising a 'green' recovery.
191 Department of Environment, Forestry and Fisheries *Low Emission Development Strategy 2050* (September 2020). <https://www.dffe.gov.za/mediarelease/climatechange_emissionsreduction_wastemanagementplans>.
192 Constitution s2; s24.

constitutional right, s24 is potentially revolutionary for the domestic mitigation effort if appropriately invoked.

The underlying motivation for climate change mitigation is that humanity's present action (and lack thereof) will significantly impact our own lives in the future, as well as humanity yet to come.[193] The severe environmental impacts described above are expected to endure and worsen in time and these challenges will affect the lives of every future generation of unborn South Africans.[194] It is generally understood that when considering future generations, humanity presently has a moral obligation to avoid damaging the environment, especially on a scale as monumental as climate change.[195] This thought was already posited in 1981: '(w)hilst our ability to affect the future is immense, our ability to foresee the results of our environmental interventions is not'.[196] Climate change will severely impact the environment for future generations, therefore mitigation is favourable if humanity intends to protect their life experience.[197] Consequently, the Constitution enshrines this concept and specifically demands environmental protection for future generations too.[198]

The enforceability of this right for future generations specifically has not been tested in court but there are strong grounds for it. It confers a duty upon all three governmental branches to ensure that natural resources are protected for, the benefit of future generations.[199] Section 7(2) of the Constitution requires that the 'state must respect, protect, promote and fulfil the rights in the Bill of Rights',[200] thus, reading s24 with s7(2) requires the state enforce this right. Du Plessis proposes that 'it is clear that the realisation of this right with its required inter-generational

[193] BH Weston 'Climate Change and Inter-generational Justice: Foundational Reflections' (2008) 9 *Vermont Journal of Environmental Law* 375, 386.
[194] L Horn 'Climate Change Litigation Actions for Future Generations' (2008) 25 *EPLJ* 115.
[195] GH Frederickson 'Can Public Officials Correctly be Said to Have Obligations to Future Generations?' (1994) 54 *Public Administration Review* 457, 459.
[196] E Partridge (ed) *Responsibilities to Future Generations: Environmental Ethics* (1981).
[197] A du Plessis 'Climate change, public trusteeship and the tomorrows of the unborn' (2015) 31 *SAJHR* 279.
[198] Constitution s24(b).
[199] du Plessis (note 197 above) 279.
[200] Constitution s7(2).

protection of the natural resource base is a constitutional duty of a fiduciary kind that rests with the authorities'.[201] The learned author notes that this is not currently happening. This inter-generational right is not mentioned, developed or adapted within the current climate change discourse; thus, it remains unimplemented and unenforced, and this constitutionally mandated provision is going ignored.[202]

This is a significant oversight as this constitutional mandate could be utilised as a powerful mitigation tool. This constitutional duty demands protection of natural resources and thus grants legal grounding for the state to restrict the actions of private parties such as mining companies, Eskom or other emissions intensive sectors.[203] The state could also require these parties adopt more climate-friendly operating practices if so desired.[204] This knife cuts both ways, as the state too – in its legislated custodian role – can be compelled to protect the environment and her natural resources for future generations.[205] This would constitute grounds for concerned parties to compel government to act in the interests of climate change mitigation.[206]

There already exists extensive proof of the inclement effects of climate change upon human health and well-being.[207] A terrible example of such a harmful environment is found in the Highveld Priority Area where residents are subjected to unhealthy concentrations of air pollution daily. In 2007 the DEA conceded that it was a hotpot for air pollution and 'there was little doubt that people living and working in these areas do not enjoy air quality that is not

[201] du Plessis (note 197 above) 284.
[202] Ibid 288.
[203] Ibid 279.
[204] Ibid.
[205] BH Weston & T Bach 'Recalibrating the Law of Humans with the Laws of Nature: Climate Change, Human Rights, and Inter-generational Justice' (2009) *Vermont Law School* 43.
[206] Ibid.
[207] See Part I above for South African impacts. N Watts, M Amann, N Arnell, S Ayeb-Karlsson, K Belesova & M Boykoff 'Lancet Countdown on health and climate change: ensuring that the health of a child born today is not defined by a changing climate' (2019) Vol 394 Issue 10211 *The Lancet* 1836.

harmful to their health and wellbeing'.[208] In May 2021, environmental justice groups groundWork and Vukani Environmental Justice Movement in Action instituted litigation premised upon the breach of this constitutional right – judgement was reserved in this case and is expected imminently.[209]

The constitutional provision also addresses the socio-economic crises currently plaguing the country, providing for measures that secure ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development.[210] This call for sustainable development permits justifiable socio-economic development. Accordingly, this is effectively constitutional grounding for the State to address South Africa's various competing crises.

Legal action premised upon a failure to fulfil a constitutionally mandated duty is incredibly valuable. As such, failure to exploit this action is a glaring instance of missing implementation. If the regulatory framework were to remedy this omission it would significantly advance the domestic mitigation effort.

5.3 Legislation

5.3.1 National Environmental Management Act – 1998

NEMA[211] is South Africa's framework legislation for environmental protection and management. NEMA informs s24 of the Constitution and Section 2's principles underpin all domestic environmental regulation.[212] NEMA is crucial to the regulatory framework simply because of how intricately entwined the issues of climate change mitigation and environmental concerns are.

[208] <https://cer.org.za/news/environmental-groups-take-government-to-high-court-over-violation-of-constitutional-right-to-clean-air>.
[209] Ibid. <https://oxpeckers.org/2021/05/deadly-air-case/>.
[210] Constitution S24.
[211] National Environmental Management Act No. 107 of 1998 ('NEMA').
[212] Ibid s2(1).

NEMA does not address climate change directly, but it undoubtedly addresses environmental protection. NEMA legislates certain principles relevant for mitigation purposes these are the precautionary, the preventative and the polluter pays principles.[213] Furthermore the Environmental Impact Assessment Regulations deal extensively with energy-related activities and their regulation.[214]

NEMA's s2 principles call for socio-economic development alongside environmental protection. These principles require environmental management to prioritise anthropogenic concerns and call for socially, environmentally, and economically sustainable development.[215] Read with the constitutional S24 provision, this is the framework's legislated call for sustainable development.

NEMA is purpose-built for environmental protection in the context of ongoing socio-economic development.[216] As it doesn't legislate on the issue of climate change, NEMA is best used for mitigation purposes through litigation. The *Thabametsi* case discussed below illustrates this point wherein NEMA provides strong grounding for a successful argument in favour of mitigation action.[217] NEMA can thus be deemed capable – if litigated correctly – of enabling mitigation while advocating for justifiable socio-economic development.

Its effectiveness is limited however, as NEMA can only facilitate climate action through litigation.[218] As mentioned above litigation is an inefficient method of enabling mitigation. Litigation would not be necessary if NEMA were more explicit about climate change and its impact upon the local environment. The NCCRP suggested that – if necessary – NEMA be

[213] Ibid S2(4)(a);(p).
[214] Environmental Impact Assessment Regulations 2014 in GN 324-7 GG 40772 of 7 April 2017. Regulations provided for in NEMA ss24(5) and 44.
[215] Ibid S2(3)-(4). Principles 2-3.
[216] Ibid.
[217] See Part 5.4.1 below.
[218] Kotze & du Plessis (note 62 above) 635.

amended to facilitate mitigation, this amendment has never happened.[219] Despite these shortfalls, NEMA can be used for domestic mitigation purposes.

5.3.2 National Environmental Management Act: Air Quality Act – 2004

NEMAQA[220] regulates South Africa's air quality. It is relevant as there is a strong causal link between atmospheric GHG emission concentrations and climate change,[221] thus regulating and limiting air pollution mitigates climate change.[222] NEMAQA empowers the Minister of Environmental Affairs to regulate matters regarding the country's air quality and climate change obligations.[223]

NEMAQA tasks the DEA with developing, reviewing and revising the necessary systems and procedures for local Air Quality Standards compliance.[224] NEMAQA proposes several air quality management solutions[225] but these constructive mitigation steps are not succeeding as envisioned due to differing measuring standards and implementation failures nation-wide.[226] Authorities attribute these failures to staffing shortfalls, nevertheless, industry can exploit them to avoid compliance.[227]

Section 53(a) has proven successful as it underpins the 2017 promulgation of both the ERRs[228] and the National Pollution Prevention Plans Regulations.[229] The ERRs 'introduce a single national reporting system for the transparent reporting of greenhouse gas emissions.'[230] The PPPRs obligate any company or process exceeding a certain annual emission threshold to

[219] NCCRP 37.
[220] National Environmental Management: Air Quality Act No. 39 of 2004 ('NEMAQA').
[221] A Ashfaq, P Sharma 'Environmental effects of air pollution and application of engineered methods to combat the problem' *Journal of Industrial Pollution Control* (2013) 29(1) *Journal of Industrial Pollution Control* 19.
[222] Segal & Cloete (note 151 above) 24.
[223] NEMAQA s53(a); Preamble; S1; S43(1)(l).
[224] 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(9/10) *South African Journal of Science* 1.
[225] NEMAQA s7(3).
[226] NEMAQA s2.
[227] Ibid.
[228] ERRs (note 171 above).
[229] National Pollution Prevention Plans Regulations in GN 712 GG 40996 of 21 July 2017 ('PPPRs').
[230] ERRs (note 171 above) s2.

submit a pollution prevention plan (PPPs).[231] These regulations work well together as they require GHG reporting for individual operations and where necessary enable emission mitigation.[232]

NEMAQA has proven itself minorly successful as its various regulations are recognised as strong contributors to the climate change framework.[233] These regulations – if enforced – provide a strong foundation upon which to accurately measure national emissions and require certain parties to reduce emissions where necessary.[234] NEMAQA itself, however, has struggled to find purchase due to a lack of implementation.

5.3.3 Carbon Tax Act – 2019

The CTA is South Africa's first law directly addressing climate change. It stands as a contributor within government's desired 'package of measures' intended to combat climate change.[235] This Act identifies domestic emissions reduction as a contributor toward the international GHG stabilisation effort.

This tax targets heavy polluters like businesses and companies who produce excessive carbon intensive emissions.[236] The CTA intends to enforce the polluter-pays-principle for these operations. The tax helps prepare them for negative emission associated costs associated with future production, consumption and investment decisions.[237] Polluters are thus incentivized to adopt cleaner technologies into the future as climate change concerns become increasingly relevant internationally.[238]

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[231] 0.1 Megatons CO2-equivalent per year.
[232] P Schoeman 'South Africa's climate change legal regime' (2019) *Without Prejudice* 10-1.
[233] Ibid.
[234] Ibid.
[235] CTA Preamble.
[236] Ibid ss3;6;16.
[237] <https://www.iea.org/policies/3041-south-african-carbon-tax?country=South%20Africa&qs=South%20Africa>.
[238] Ibid.

The CTA emerged to a rocky start in 2019, missing the NCCRP's proposed 2013 target date by six years.[239] Its late promulgation is another example of implementation shortfalls which undermine the regulatory framework's effectiveness. Industry decried the CTA's promulgation due to the carbon tax's affordability which could lead to increased unemployment and constrained economic growth.[240]

The CTA's emission reduction and environmental protection credentials are also questioned. Critics accept that this first step should be applauded, however some believe it is too minor to make a noticeable impact. Winkler notes that the effective tax rate of R6-R48 per tonne of CO_2 released by an emitter is too low to transform the economy.[241] Others criticise the intended usage of this (limited) tax revenue. Revenue will flow into the general fiscus, instead of ringfencing it or allocating it to mitigation efforts.[242] As the CTA intends to offset GHG emissions, this revenue could be better utilised by bolstering South Africa's climate change response.[243] Winkler suggests investing in socio-economic developmental initiatives to utilise this revenue more.[244]

The CTA's existence evidences the reality that mitigation action is taking place domestically. However, it also testifies to the slow pace of this action due to both implementation shortfalls and barely effective legislation. As the CTA matures and enters its next phase from 2022 the tax burden will need to climb steeply if it intends to meet its stipulated goal of stabilising emissions, otherwise companies will not be incentivised to both reduce emissions or adopt cleaner technologies and business practices.

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[239] NCCRP s8.
[240] <https://www.thesait.org.za/news/498153/The-Carbon-Tax-Act-Explained.htm>.
[241] <https://www.news.uct.ac.za/article/-2019-05-31-responding-to-the-climate-change-emergency>.
[242] <https://www.bdo.co.za/en-za/insights/2020/budget-day/sa%E2%80%99s-carbon-tax-act-falls-short-in-enabling-the-president%E2%80%99s-green-economy-ambitions>.
[243] Ibid. See <https://www.outa.co.za/projects/government-policy/carbon-campaign>.
[244] UCTNews (note 241 above).

5.3.4 Climate Change Bill – 2018

The Climate Change Bill[245] was released in 2018 however it is yet to be passed due to delays and redrafting uncertainty.[246] As such it is not currently an active contributor to the regulatory framework. The Bill is intended to legislate the national response to climate change. Its purpose is to secure a just transition toward a climate resilient and less carbon intensive economy while enabling an environmentally sustainable development framework.[247] This Bill intends to underpin the climate change regulatory framework.

The Bill is highly procedural and heavily reliant upon further development for the effective mitigation of climate change.[248] This legislative deferral to various committees and ministerial appointments has been critiqued and some suggest the Bill needs further development if it intends to achieve its lofty objectives.[249] One of the main reasons for the drafting of the Bill is effectively argued for in the Socio-Economic Impact Assessment System Final Impact Assessment Report which pointed out that the existing absence of regulation characterises 'a fatal risk to achieving the NCCRP's underlying objectives and supporting the country's international climate change obligations.'[250] This current conception of the Bill does not seem to have addressed this risk as it predominantly acts as a framework for incremental development and implementation of the greater regulatory framework in time, more so than

[245] Climate Change Draft Bill in GN 580 GG 41689 of 8 June 2018 ('Bill' or 'CCB' in footnotes).
[246] <https://www.esi-africa.com/industry-sectors/finance-and-policy/south-africa-climate-change-bill-incorporates-vision-2030/>. <https://www.businesslive.co.za/bd/national/science-and-environment/2020-02-13-sa-to-finalise-climate-change-bill-soon-ramaphosa/>. <https://mg.co.za/environment/2021-09-30-climate-change-bill-to-be-tabled-in-parliament/>.
[247] CCB Purpose of the Bill.
[248] M Burnell 'Climate Change Bill - Summary And Content' (June 2018) *Herbert Smith Freehills Legal Briefings* 1. See CCB ss6; 9(1); 10.
[249] J Sweet 'A climate change bill that needs changing?' (August 2018) *LexisNexis Polity* available at https://www.polity.org.za/article/a-climate-change-bill-that-needs-changing-2018-08-06.
[250] Department of Planning, Monitoring & Evaluation *Socio-Economic Impact Assessment System Final Impact Assessment Report* (July 2017) 3.

solid binding and enforceable legislation presently.[251] This approach lacks the regulatory certainty and clout necessary to facilitate climate change mitigation by itself.[252]

The Bill is also critiqued for its intergovernmental approach to regulation and implementation. On multiple occasions, it calls for a: 'coordinated and integrated response to climate change and its impacts by all spheres of government'[253] to retain the requisite government-wide political support to drive mitigation.[254] However, Winkler and Marquad suggest – after first lauding the Bill as a 'positive step forward' – that 'what South Africa really needs is a 'fair and ambitious bill that goes further than mere effective coordination within government'.[255] Intergovernmental co-operation has not proven to be an overwhelming success where regulatory implementation is concerned.[256] This problem is especially likely to be fractious in environmental debates as intergenerational equity is at stake, thus, Sweet calls the viability of the proposed committees into question.[257]

These grave implementation concerns are justified. Already, this Bill's ratification has caused apprehension, despite being published three years ago (and being six years late), no further development has been made.[258] The Bill itself is laden with a number of timelines and deadlines for adoption and release of various policies and interventions.[259] The delay in ratification does not bode well for meeting any of the timelines therein. Implementation will once again be the determinant as to whether this Bill will effectively mitigate against climate change or not. However, unlike the other policy documents this Bill (if adopted presently) will also be heavily

[251] Sweet (note 249 above).
[252] Ibid.
[253] CCB s2(a).
[254] Sweet (note 249 above).
[255] <https://www.businesslive.co.za/bd/opinion/2018-07-26-is-new-climate-legislation-able-to-stimulate-required-urgent-action/>.
[256] Sweet (note 249 above).
[257] Ibid.
[258] NCCRP s8.
[259] Ibid. CCB ss6; 9-10; 12; 14-15 & 19.

dependent upon unproven intergovernmental cooperation and the success of the various plans, frameworks, and regulations it enables and calls for.

5.4 Judicial Mitigation Action

As discussed above, the judiciary can contribute immensely toward the regulatory framework by advancing mitigation action through litigation. These interventions are vital if the existing framework effectively lacks certainty, legislation or enforcement. It is therefore imperative that these indispensable judicial interventions are considered.

5.4.1 *Thabametsi*

Earthlife (Johannesburg) v Minister of Environmental Affairs case,[260] is South Africa's preeminent climate change judgement[261] and the first judicial contribution to the domestic climate change discourse.[262] It evidences the effectiveness of both the Constitution and NEMA as mitigation contributors. It also exemplifies how the existing regulatory framework can be interpreted for mitigation purposes.

The DEA granted Thabametsi Power Company – an IPP – their requisite environmental authorisation to build a 1200MW coal-fired power station in Limpopo.[263] None of the conditional authorisation provisions dealt with either climate change or emissions reduction[264] and Earthlife Africa, a non-profit organisation, appealed this authorisation to the Minister.[265] Earthlife contended that the environmental impact assessment process should include a 'climate change screening' – for the country to meet its international and domestic

[260] *Thabametsi* (note 20 above).
[261] TL Humby 'The *Thabametsi* Case: Case No 65662/16 Earthlife Africa Johannesburg v Minister of Environmental Affairs' (30 2018) Journal of Environmental Law 145 146.
[262] AO Jegede & AW Makulana 'Climate change interventions in South Africa: the significance of *Earthlife Africa Johannesburg v Minister of Environmental Affairs (Thabametsi* case*)* (2017) JOL 37526 (GP) – case' (2019) Volume 40 Number 2 *Obiter* 399.
[263] *Thabametsi* (note 20 above) para 1; 37-39.
[264] Ibid.
[265] Ibid para 53.

obligations.[266] The Minister refused to set aside the authorisation, instead directing Thabametsi to perform a climate change impact assessment before the project commenced.[267] Earthlife took the Minister's decision under review.[268] The court held that the DEA had overlooked all the relevant considerations and thus had failed to comply with NEMA s24O(1)(b), furthermore as this constituted material non-compliance with NEMA the court set aside the authorisation.[269] The Minister was ordered to restart the appeal process, accounting for the effects of climate change.[270]

The Court's bold assertions will undoubtedly guide the framework toward bringing about effective mitigation going forward.[271] It linked climate change impact assessments with sustainable development, inter-generational justice, and NEMA's precautionary principle.[272] The court held that climate change impacts are relevant factors which must be considered in the EIA process[273] and furthermore, this process is a key means of promoting these concepts.[274]

The court observed the considerable risk that climate change poses to domestic sustainable development, which underpins the policy framework.[275] *Thabametsi* also affirmed s24 of the Constitution as it expounded upon the linkages between sustainable development and intergenerational justice. The court applied the precedent established in the *Fuel Retailers* case[276] which set out that a lack of regard for the impact of projects on the climate can undermine sustainable development called for by the Constitution.[277] It stated that the country's

[266] Ibid para 53-5.
[267] Ibid para 8.
[268] Ibid para 11.
[269] NEMA s24O(1)(b) & s43(7).
[270] Thabametsi (note 20 above) para 126.
[271] Humby (note 261 above) 147.
[272] Ibid and NEMA s2(4)(a)(vii).
[273] *Thabametsi* (note 20 above) para 78.
[274] Ibid para 80. Humby (note 261 above) 147.
[275] Ibid para 82.
[276] *Fuel Retailers Association of Southern Africa v Director-General: Environmental Management, Department of Agriculture, Conservation and Environment, Mpumalanga Province* 2007 (6) SA 4 (CC).
[277] Ibid para 86.

short-term electricity requirements have to be evaluated and measured against long-term consequences.[278]

The court also highlighted the contribution of international policy to the domestic framework. It deemed this comparative value judgement a duty of the State in terms of UNFCCC arts3(3) and 4(1)(f).[279] They oblige member-states to take precautionary measures where possible and to account for climate change in their relevant environmental policies and actions.[280]

Thabametsi advances climate change mitigation as it establishes climate impacts as an important factor to consider in certain developmental undertakings and projects. All future coal fired power projects must now consider climate change impacts prior to their authorisation or face judicial review. *Thabametsi* used the Constitution, NEMA and international law to establish a strong foundation for potential future mitigation litigation.

Over the last decade South Africa has erected a mitigation minded regulatory framework. The efficacy of these contributory pieces has been examined on a case-by-case basis. However, climate change is a multi-faceted phenomenon impossible to mitigate through isolated regulations. The nation's ability to mitigate climate change can only be determined by considering the effectiveness of the overall framework. As noted, the framework harbours some underlying shortfalls, nevertheless, mitigation action is taking place. The effectiveness of the framework – in light of its shortfalls, potential and limited success - will now be discussed.

[278] Ibid para 82.
[279] *Thabametsi* (note 20 above) para 83.
[280] UNFCCC arts3(3); 4(1)(f).

6. Efficacy of the framework

The regulatory framework has not yielded extensive mitigation action; however, mitigation action is slowly being advanced.[281] It is therefore effective; however, the extent of this effectiveness must be determined. Effective climate change mitigation requires the creation, adoption, and implementation of a robust regulatory framework.[282] The framework's two major deficiencies, however, are regulatory uncertainty and implementation shortfalls. These drawbacks impact significantly upon the framework's effectiveness.

6.1 Framework Shortfalls

Implementation shortfalls can be attributed partially to regulatory uncertainty. Kidd and Couzens note this relationship: 'if the … environmental authority of South Africa has its way, the promotion of carbon-intensive development in the country will prevail, even in the face of severe climate change.'[283] Where regulatory uncertainty persists, authorities prioritise socio-economic development over environmental concerns.[284] This criticism holds true presently as there is minimal evidence of mitigation being favoured where any degree of regulatory interpretation is required by environmental authorities.[285] Regulatory certainty is preferable as favourable interpretation would not be so necessary where mitigation action is clearly mandated.

The extent of framework implementation determines its efficacy.[286] Where implementation is trivial or absent, the framework cannot be deemed effective.[287] This framework is plagued by missed deadlines and unenforced provisions which hamper the robust regulatory framework

[281] Schoeman (note 232 above) 10-1.
[282] Bodansky (note 63 above) 72.
[283] Kidd & Couzens (note 57 above) 638.
[284] Ibid.
[285] Ibid.
[286] Bodansky (note 63 above) 73; 80.
[287] Ibid.

envisioned by the nation's ambitious policy documents.[288] They envisage innovative legislation capable of facilitating climate change mitigation and adaptation, a climate-resilient economy and a just transition.[289] South Africa has a poor track record of delivering on climate policy or implementing the plans proposed within them.[290] This implementation shortfall must be rectified for effective mitigation to occur.[291]

The ad-hoc nature of this framework further impedes its effectiveness. It currently enables mitigation through the individual application of its various fragmented contributors rather than through purpose-built legislation.[292] Its current ad hoc nature[293] can be seen by the various policies, barely applicable legislation and multiple regulators responsible for various aspects of combatting the crisis within their realm.[294] Papacostantis notes that: 'waiting for the law to offer relief on a case-by-case basis constitutes a piecemeal approach to an issue that calls for a solid regulatory foundation.'[295] Such a 'piecemeal approach' to climate change mitigation is undesirable and ineffective, actual legislation is essential to bolster the framework's efficacy.[296]

Thabametsi highlights how the framework is certain enough to enable mitigation when interpreted by an authority cognisant of climate change.[297] This requires the judiciary and civil society to pressure lawmakers into considering social and ecological issues when making

[288] Kotze & du Plessis (note 62 above) 639-40.
[289] Ibid.
[290] Boulle et al (note 136 above) 11.
[291] Ibid. NCCRP 29.
[292] 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 Electronic Law Journal* 17.
[293] Segal & Cloete (note 151 above) 24.
[294] Schoeman (note 232 above) 10-1.
[295] Ibid 18.
[296] JCN Ashukem 'Setting the Scene for Climate Change Litigation in South Africa: Earthlife Africa Johannesburg v Minister of Environmental Affairs and Others' 2017 *Law, Environment and Development Journal* 35, 41.
[297] *Thabametsi* (note 20 above) para 119.

climate related decisions.[298] As mentioned previously it is neither feasible nor entirely effective to litigate a path toward an effective mitigation driven framework, rather a flexible and robust legal framework would be significantly better to this end.[299] The framework is certain enough to combat climate change, but further regulatory certainty would appreciably advance domestic mitigation.

The Bill exemplifies the framework's regulatory and implementation shortfalls. Its primarily procedural nature[300] speaks to its uncertainty as potential legislation and the fact that it remains unratified represents the implementation shortfalls plaguing the greater framework. However, upon ratification, it could evolve as its various committees and working groups go about their business.[301] If successful in their tasks, this Bill could become the cornerstone for domestic climate action. Had it been ratified in 2018, these teams would have already been appointed and empowered to begin their work of combating climate change.[302] The framework is almost there; however, it lacks regulatory certainty and implementation.

6.2 Framework Success and Potential

The framework has been successful in a certain sense and there are notable wins despite implementation shortfalls. Successes include the promulgation of the CTA, ERRs and PRRRs discussed above as well as the submission of both the LEDS2050 and the 2021 NDC to the UNFCCC.[303] The institutional framework is therefore being strengthened piece by piece.[304] These successes are not yet enabling wholesale climate change mitigation; however, they fill framework uncertainties and bode well for the intent and improving effectiveness of the

[298] Kotze & du Plessis (note 62 above) 639-40.
[299] Ibid.
[300] Sweet (note 249 above).
[301] Ibid.
[302] Ibid.
[303] <https://unfccc.int/documents/253724>. The REI4P Programme initiated in 2011 - a competitive procurement programme for renewable energy – has also been very well received internationally. A Eberhard, J Kolker & J Leigland 'South Africa's Renewable Energy IPP Procurement Program: Success Factors and Lessons' (2014).
[304] Ibid.

framework into the future.[305] They stand as examples of effective mitigation action being advanced by the framework. While it has been successful to a certain extent, these successes are dwarfed by the potential yet untapped within the framework.

The current policy framework is heavily reactionary and somewhat fragmented.[306] However, it is still in its relative infancy, with time and further development this framework can deliver on its mandate. It desperately requires greater implementation, more policy certainty, sustained political will – and in the absence, thereof – sustained public buy-in if it is to be regarded as being effective.[307] This is imperative in the face of new climate change impacts manifesting almost daily. If the domestic political will is not going to drive a climate-friendly agenda, then objective reality will inevitably force government's hand.[308]

The framework is therefore effective in a limited capacity, and it is minorly conducive to facilitating climate change mitigation. Where it can advance mitigation it does so, however its scope is severely curtailed by its underlying shortfalls.[309] The ratification of impending climate change legislation and the framework's ongoing development will go a long way toward cementing its potential.[310] These interventions may help develop a robust and flexible regulatory framework, but the framework is not there yet. Thankfully, mitigation need not wait until the framework is fully developed and domestic mitigation is already taking place.[311]

7. Conclusion

Climate change is the preeminent existential threat of the 21st century. Its effects have been examined both internationally and domestically. Humanity remains uncertain as to the extent

[305] Ibid.
[306] Schoeman (note 232 above) 10-1.
[307] Bodansky (note 63 above) 63-4.
[308] H Winkler & A Marquard 'SA's new climate legislation contains some shockers' (July 2018) *Business Day.*
[309] CAT (note 135 above). Shortfalls discussed in Part 6.1.
[310] Ibid. <https://www.dffe.gov.za/mediarelease/cabinetapproves_cop26sandc_climatechangebill>.
[311] Ibid.

of its repercussions. Thus, the international mitigation effort is vital, and every contribution is indispensable. Creating, adopting and implementing a strong regulatory framework is crucial for any nation to effectively mitigate climate change domestically. South Africa has begun this journey in its own domestic framework.

The domestic framework remains mostly underdeveloped or unimplemented where regulation does exist. Despite these setbacks – and South Africa's unenviable socio-economic constraints – mitigation action is taking place. Development of the framework is ongoing and as climate change awareness improves, so too should framework enforcement. In terms of the problem-solving grassroots effectiveness standard defined above; it cannot be deemed entirely effective. Its successes, however, have proven it can facilitate limited mitigation action presently.

The framework is workable but not entirely effective. Presently, the advancement of mitigation action relies heavily upon external intervention and interpretation. This slow advancement results from the framework's fragmented nature which sporadically enables mitigation where possible, but this is not feasible in the long term. It can be exponentially advanced by further development, increased certainty and a comprehensive framework. Additionally, remedying implementation shortfalls is essential for improving its effectiveness. While the regulatory framework is conducive for facilitating climate change mitigation it can only become (problem-solving) effective after further evolution, consolidation and increased implementation.

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