



Environmental Policy

Federal Policy Unit
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Foreword by John Steenhuisen

South Africa's natural environment is one of our greatest national assets. Our rivers, oceans, wildlife, ecosystems, forests, and landscapes sustain communities, support livelihoods, and anchor entire industries, from agriculture and tourism to clean energy and conservation. Yet these vital resources are under severe pressure: pollution, mismanagement, environmental crime, failing infrastructure, and the mounting effects of climate change all threaten the stability of our environment and the well-being of our people.

The DA's Environment Policy is built on the belief that our natural resources must be kept sustainable, to enable economic growth and opportunity.

This policy outlines how a DA-led government will protect South Africa's water sources, improve air quality, preserve biodiversity, strengthen environmental law enforcement, and promote responsible, sustainable resource management. It sets out a long-term, evidence-based plan for building resilience in the face of environmental shocks and ensuring that future generations inherit a country rich in natural beauty and ecological stability.

It also reflects the DA's belief that environmental stewardship must involve the whole of society: communities, civil society, the private sector, and young people who will inherit the results of our actions. Environmental awareness and shared responsibility are central to this vision, one which puts people at the centre of policy.

The voters who trust the DA where we govern have shown that South Africans want a future that is clean, safe, and sustainable. This policy is our public commitment to delivering that future. It demonstrates, with clarity and care, how a responsible, capable government can protect lives, unlock economic potential, and secure the natural heritage of every South African. The DA can fix this.

John Steenhuisen

Leader of the Democratic Alliance





Andrew de Blocq, DA Spokesperson for Forestry, Fisheries, and Environment

Section 24 of our Constitution affirms every person's right to an environment that is not harmful to their health or wellbeing, and to have that environment protected for the benefit of present and future generations. It further requires government to implement legislative and other measures that prevent ecological degradation, promote conservation, and secure sustainable development.

Having a gold-standard environmental policy is essential to realising this Constitutional mandate. With the release of this new policy, the DA is equipped to advance these principles through our environmental portfolios at every level of government.

A healthy environment is an existential necessity. As South Africans, we deserve to see our unique and diverse natural heritage both protected and sustainably leveraged to create jobs and drive economic growth.

The breadth and depth of this policy reflect the significance of this portfolio. I thank all contributors for their efforts and welcome its adoption.

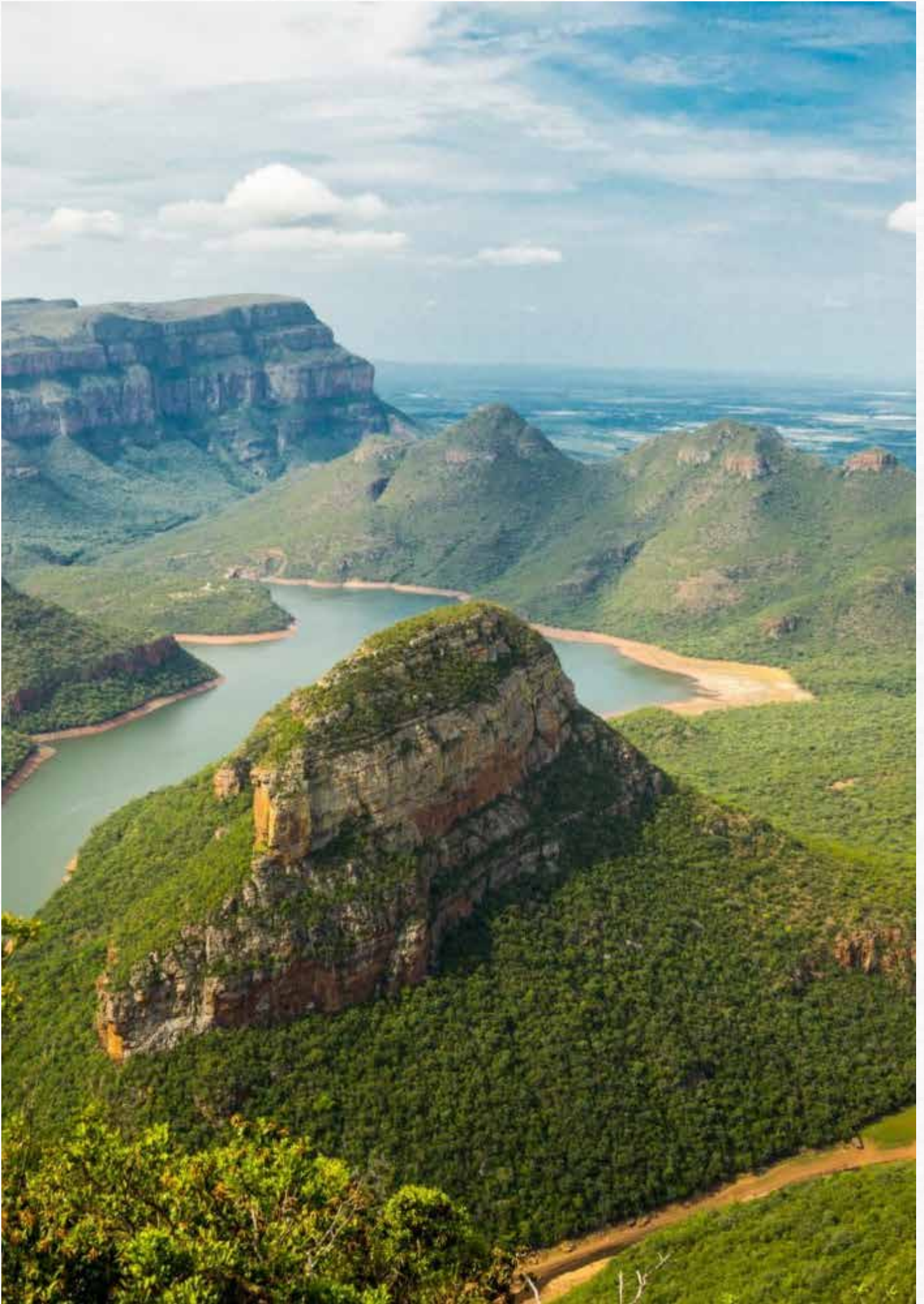
South Africa's environment faces pressing challenges, including climate change, ecological degradation, and resource scarcity. These challenges are exacerbated by significant socio-economic issues, such as low growth, high unemployment, and severe poverty.

Our policy offer aims to protect our natural resources, create a healthy environment for our citizens, and leverage the green economy by creating new opportunities in renewable energy, green technologies, eco-tourism, and sustainable agriculture.

This sensible approach to environmental stewardship allows us to minimise trade-offs and position South Africa for a sustainable economic future.



Mat Cuthbert, MP, Head of Policy DA Federal Policy Unit



List of Acronyms

AMD	Acid Mine Drainage
BDRR	Blue Drop Risk Rating
CAT	Climate Action Tracker
CBC	Community-based Conservation
CBD	Convention on Biological Diversity
CSR	Corporate Social Responsibility
DFFE	Department of Forestry, Fisheries, and Environment
DMR	Department of Mineral Resources
DPF	Diesel Particulate Filters
DWS	Department of Water and Sanitation
EBM	Effect-based Method
EIA	Environmental Impact Assessment
EPR	Extended Producer Responsibility
ESG	Equitable Share Grant
EV	Electric Vehicles
GHG	Greenhouse Gases
HSRC	Human Sciences Research Council
IAS	Invasive Alien Species
IPID	Independent Police Investigation Directorate
IPP	Independent Power Producers
JET	Just Energy Transition
MEA	Multilateral Environmental Agreement
MIG	Municipal Infrastructure Grant
MPA	Marine Protected Area
NBA	National Biodiversity Assessment
NDC	Nationally Determined Contributions
NEMA	National Environmental Management Act
NERSA	National Electricity Regulator of South Africa
NRW	Non-revenue Water
NWS	National Waste Strategy
PCB	Polychlorinated Biphenyls

PPP	Public-Private Partnership
PPPFA	Preferential Public Procurement Framework Act
PPR	Public-Place Recycling
PV	Photovoltaic
SANBI	South African National Biodiversity Institute
SAPS	South African Police Service
SAWIS	South African Waste Information Service
SDG	Sustainable Development Goals
SMNR	Small Modular Nuclear Reactor
SSA	State Security Agency
SSEG	Small-scale Embedded Generation
SWSA	Strategic Water Source Areas
TAC	Total Allowable Catch
UN	United Nations
UNFCCC	UN Framework Convention on Climate Change
USP	User Services Platform
WfW	Working for Water
WHO	World Health Organisation
WWA	World Weather Attribution

Vision

An environmental policy which builds a robust green economy and a sustainable future.

Executive Summary

Environmental policy provides the foundation upon which a country protects its natural resources, ensures the health and well-being of its people, and builds the conditions for long-term socio-economic development. In an era of accelerating climate change, ecological degradation and resource scarcity, a clear, coherent and forward-looking environmental policy is a necessity.

Regrettably, South Africa's environmental governance has been marred by socio-economic issues, political neglect, and a failure to integrate environmental protection with broader development goals. South Africa's environmental challenges are situated within a rapidly changing global context. Climate science increasingly underscores the urgency of action, which demands national policy coherence and delivery.

South Africa has fallen behind both in meeting its global carbon commitments and in capitalising on the economic opportunities of the green transition. Yet with the right reforms, the country can chart a new course – one which sustainably uses natural resources, supports livelihoods, and protects the environment for future generations.

Against this backdrop, this policy sets out the Democratic Alliance's approach to environmental governance. Grounded in evidence-based scientific consensus, proactive and accountable governance, and taking climate change seriously, the DA's Environmental Policy is built on the belief that an environmentally sustainable future will enhance, not sacrifice, economic growth.

The DA's approach to environmental policy is guided by six policy objectives.

The first objective is to reduce South Africa's contributions to climate change while preparing for its harmful effects. South Africa is among the world's highest per capita emitters of greenhouse gases due to its reliance on coal-based energy. The DA's climate approach is anchored in three interlinked transitions: decarbonisation, adaptation, and a Clean Jobs Transition. This involves reducing emissions through renewable energy expansion, electric transport, and green building techniques. It also involves managing climate risks and ensuring that vulnerable communities and workers are supported during the transition to a low-carbon economy.

The second objective is to ensure effective and efficient water resource management. South Africa's water crisis is driven by poor infrastructure, high demand, pollution, and climate-induced droughts. The DA proposes a multi-pronged approach: diversifying water sources, protecting strategic water areas, fixing leaks, addressing non-revenue water losses, and ensuring infrastructure investment. This includes embracing new technology, building resilience through water conservation, and ringfencing funds for water projects in municipalities with the capacity to deliver.

The third objective is to establish functional and sustainable waste management systems. Many municipalities have experienced a collapse of basic waste services, leading to overfull landfills, hazardous dumping, and environmental contamination. The DA's approach includes reforming municipal waste systems, incentivising recycling, regulating hazardous mining waste, and promoting a circular economy model. A particular focus will be placed on improving data transparency, enforcing corporate responsibility, and creating green jobs across the waste value chain.

The fourth objective seeks to ensure clean air for all South Africans. Air pollution, particularly in coal-heavy regions and urban centres, poses severe health risks and violates the constitutional right to a healthy environment. The DA will enforce air quality regulations, upgrade monitoring infrastructure, hold polluters accountable, and phase out high-emission technologies. Clean air interventions will be coordinated with a broader decarbonisation strategy and public health policy, recognising the intersection between environmental wellbeing and health.

The fifth objective is to preserve South Africa's natural resources and biodiversity. The country's rich ecosystems are under threat from invasive species, poaching, overfishing, deforestation, and habitat loss. The DA supports evidence-based conservation, improved enforcement against wildlife crime, expanded marine and terrestrial protected areas, and incentives for community-based conservation. Nature-based solutions such as reforestation, wetland protection, and sustainable land use will be central to addressing both ecological degradation and building greater climate resilience.

The sixth objective is to raise environmental awareness across our society. The protection of our environment depends not only on policy but also on public understanding and participation. In South Africa, environmental literacy remains low, particularly in under-resourced areas. The DA will invest in public awareness campaigns, school curricula, and local activism, while creating platforms for youth engagement and paid learnership opportunities in climate action.

Through the implementation of these six objectives, the DA seeks to reposition South Africa as a leader in sustainable development and good environmental stewardship. Environmental protection is central to economic growth, human development, and the well-being of future generations. This policy offers a roadmap towards a better environment.

Goals & Indicators

Goals	Indicators
Achieve carbon neutrality by 2050 while building a green economy that supports job creation and energy security.	- Lowering the percentage of coal that is used in our energy mix. - The number of new jobs created in the green economy. - A lowering of South Africa's carbon footprint.
Develop comprehensive climate mitigation strategies.	- Integrate climate planning into municipal development plans. - Have all three spheres of government coordinate a whole-of-society approach to climate disaster relief and management.
All South Africans have access to water which is clean and safe to drink, as well as adequate sanitation facilities.	- Decreasing quantity of water lost to poor infrastructure and theft. - Blue Drop reports, which reflect improved water quality in under-resourced areas. - An increase in the availability of water reserves.
A long-term goal of a zero-waste-to-landfill society.	- The percentage of South Africans who have access to waste collection services has increased. - An uptake in municipal recycling quantities. - Ensure consistent delivery of waste management services. - Increased availability of hazardous waste sites, resulting in reduced dumping levels. - Improved rehabilitation rates of mining sites. - Reduced littering levels.
The air is safe to breathe.	- The average amount of PM2.5 is below a suitable WHO limit, particularly in areas like Gauteng and Mpumalanga. - Increased electric vehicle utilisation. - Freight rail replaces trucks as the primary method of logistical transport.
Our biodiversity is protected.	- Harmful invasive species are reduced or eradicated. - Biodiversity levels are stabilised. - Poaching levels are reduced. - Fires are prevented or responded to timeously. - Commercial fishery operations resume development, and co-operatives are not forced to be party to collective bargaining agreements. - Increased forest density.
Raise environmental awareness and combat climate denial.	- Awareness of climate change is decoupled from education levels. - People are invested in the climate conditions of their neighbourhoods. - Improved access to digestible climate information available in multiple languages.





Objective 1: Reducing South Africa's Contributions to Climate Change and Preparing for its Harmful Effects



The DA aspires to establish South Africa as a carbon-neutral country by 2050 and implement an effective mitigation and adaptation strategy to protect our nation against the worst effects of climate change.

The DA believes that climate change represents a severe risk to the future development and prosperity of South Africa. As the human population surpasses 8 billion, our collective footprint, predominantly on the climate, biodiversity loss, pollution and waste, increasingly places us on a trajectory towards ecological collapse.

The DA recognises that climate change is a severe environmental crisis and that South Africa must play its part in keeping global warming below 2 degrees Celsius and ideally below 1.5 degrees Celsius as per the Paris Agreement. Life has flourished on Earth due to relative long-term stability in the planet's temperature,¹ which results from the atmosphere preventing the climate from becoming excessively hot or cold. However, human activities, such as the burning of fossil fuels, cutting down of forests² and intensive farming of livestock³ are increasing greenhouse gases (GHG) in the atmosphere, which traps the sun's heat, causing increasing global warming and climate change.⁴ As a result, the world is warming faster than ever in recorded history.⁵ The past 9 years have been the warmest in 174 years of recorded scientific observations,⁶ with 2023 confirmed as the hottest year in recorded history.⁷ These increasing temperatures are causing changes in weather patterns and disrupting the environment's natural balance.⁸

The DA aspires for South Africa to follow the least-cost path to a zero-carbon future while minimising this transition's impact on those employed within and possessing a stake in fossil fuel technologies. This will entail minimising the short to medium-term socio-economic impact of South Africa's green energy transition by ensuring that new job opportunities created by the transition are as accessible to as many negatively affected individuals as possible.



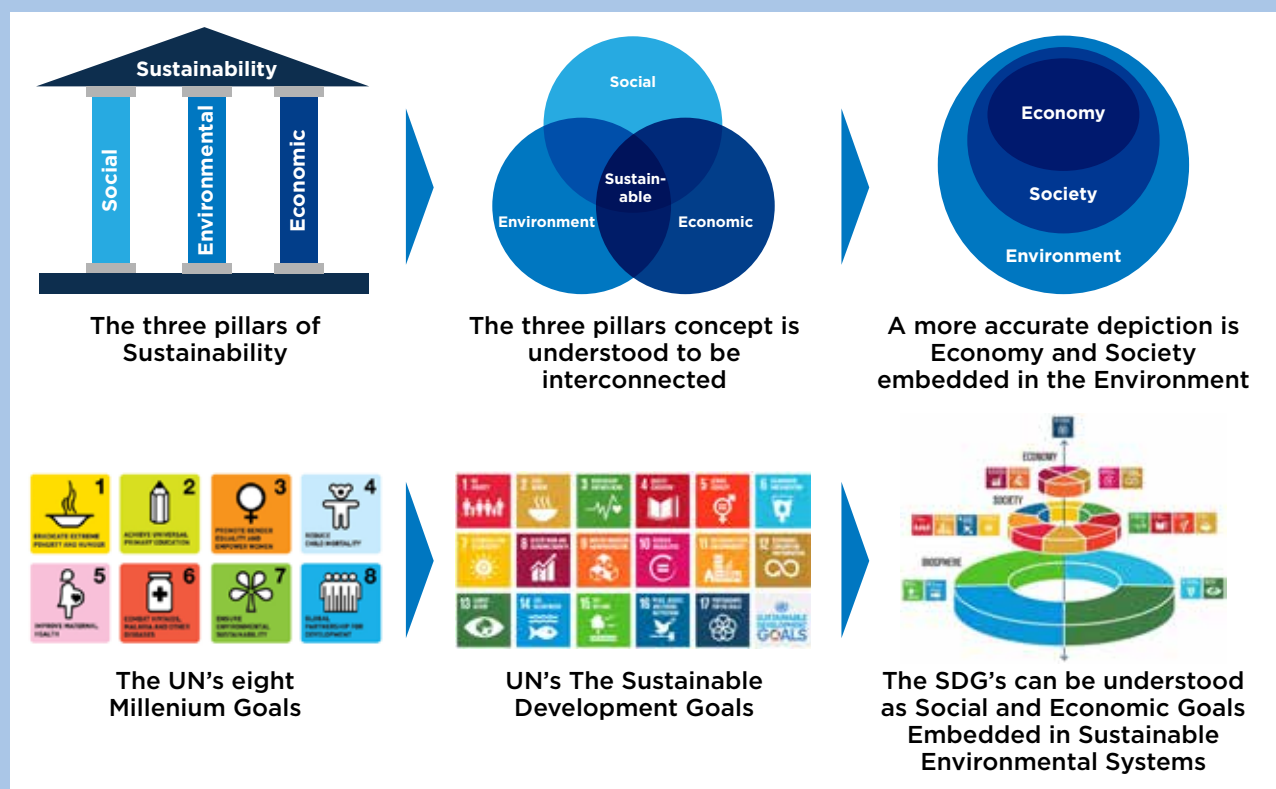
Background: A Sustainable Development Framework

The concept of ‘sustainable development’ was first defined by the World Commission on Environment and Development in 1987 as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”⁹ This was subsequently depicted as the three pillars of economic, social and environmental development.

This framework promoted a siloed conception of sustainability whereby economic growth could be achieved without consideration of social and environmental factors. However, this failed to recognise the dependency of our socio-economic development on the environment, whereby a well-managed environment serves as a foundation for strong socio-economic development.¹⁰

Subsequently, the idea of sustainable development evolved to place a greater emphasis on acknowledging the interdependence of sustainable economic, social and environmental development, leading to the current understanding of ‘embedded dependencies’ between the economy, society and the environment, which is now recognised within global sustainability policy.¹¹

Figure 1: The Interconnectedness of Sustainable Economic, Social and Environmental Development¹²



In 2015, the 17 United Nations Sustainable Development Goals (SDGs) were released as a set of aspirational goals for collectively addressing economic, social, and environmental challenges in the world.¹³ These goals are also understood as embedded, with a need to achieve goals together rather than in isolation. Additionally, these SDG goals are recognised as being embedded within and dependent on the four biosphere goals – life on land, life below water, clean water and sanitation and climate action.

Figure 1 illustrates the development of our understanding of sustainability from a siloed, pillared mindset to an embedded systems understanding, which promotes the interconnectedness of societal and economic well-being with planetary well-being. This is mirrored by understanding the 17 SDGs as being connected and embedded within each other.

The DA will prioritise the attainment of the four SDGs related to the environment, which are termed the ‘biosphere goals’, as these will promote the attainment of the social and economic development goals. The achievement of the environmental SDGs is a necessary requirement for achieving the social and environmental goals. The DA recognises that sound environmental management policies lay the foundation for conditions that facilitate future social and economic development.

The importance of a healthy and sustainable environment was recognised by the UN General Assembly when it adopted a resolution in July 2022, declaring access to a clean, healthy and sustainable environment a universal human right. The DA will seek to implement this right through domestic legislation and collective action. While the DA will address our own unique domestic challenges first, we will also implement multilateral environmental agreements (MEAs) that address climate change, biodiversity loss, waste and pollution.

The Causes and Negative Effects of Climate Change

The challenges that South Africa faces concerning climate change are two-fold:

- 1. South Africa is a significant contributor to climate change.** Due to our dependence on coal as a primary fuel source for electricity generation, South Africa is one of the world’s top 15 emitters of GHGs.¹⁴ In addition, South Africa’s per capita carbon emissions are significantly above the global average.¹⁵
- 2. South Africa is experiencing the impacts of climate change, with extreme weather events,** such as severe droughts, rains, landslides, and flooding, becoming increasingly frequent.^{16,17} It is important to note that these extreme weather events, resulting from climate change, also have a knock-on effect. For example, droughts significantly reduce dam levels in dry regions, resulting in chronic water shortages. Water shortages subsequently negatively impact crop yields and livestock production, which impacts food security, particularly for people experiencing poverty.^{18,19,20} This is concerning given that in South Africa approximately 11 percent of the population (6.5 million) is food insecure.²¹

Case Study

The Effects of Drought in the Eastern Cape

The Eastern Cape has experienced a severe multi-year drought since 2015. This drought is widely considered one of the worst in the region’s history. The South African government subsequently declared the province a ‘disaster area’ in October 2019.²²

The former DA mayor of Nelson Mandela Bay, Retief Odendaal, speaking on the drought, stated the following:

“There is no doubt that the Eastern Cape is currently experiencing one of the most disastrous and debilitating droughts in its history, with over four years of way-below-average rainfall. This period has been characterised as a once-in-a-100-year drought and has placed many farmers in financial ruin.”²³

The drought resulted in conservatively projected livestock production losses of R6.4 billion, with the province also experiencing water-shedding across a variety of towns and communities as dam levels were too low for effective water extraction.²⁴

The Challenge of South Africa's Contributions Towards Climate Change

The effects of climate change are not limited to South Africa. It is a global phenomenon with long-term implications for the sustainable development of all countries, making international cooperation towards the slowing of climate change of utmost importance.

While South Africa must draft environmental policy in accordance with our development status and goals, the interconnected nature of environmental challenges will require policy development to consider global cooperation within international policy development and agreements.

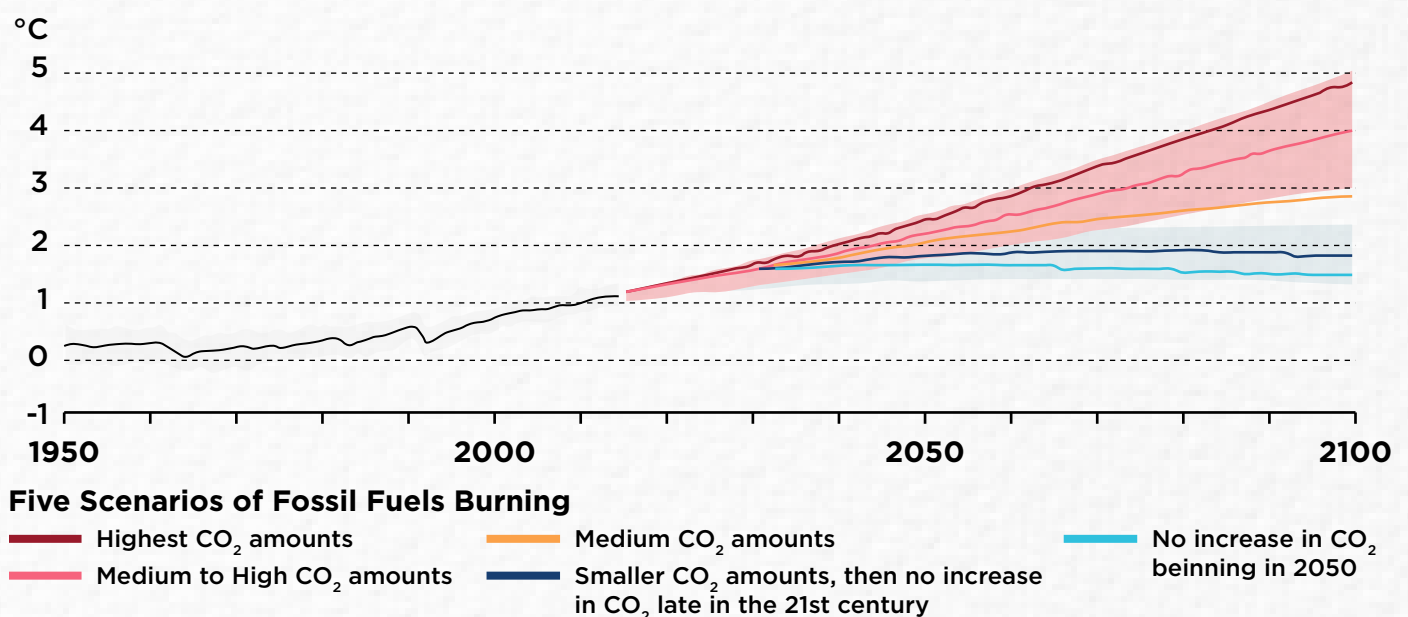
There are a variety of multilateral environmental agreements (MEAs) to which South Africa is a signatory. These agreements contain a variety of implementation commitments within which any environmental policy must be aligned. The most critical MEAs are the Convention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC).²⁵ Additional multilateral policy frameworks that must guide national policy development include the 2030 SDGs, which encompass all aspirations for a 'healthy, peaceful, prosperous and secure global society'.²⁶ However, the problem is that South Africa struggles to keep up with its counterparts in meeting international environmental obligations. These challenges are: 1) South Africa failing to meet its Paris Agreement obligations; 2) South Africa possessing high-emissions sectors, including high carbon production in our energy, transport, and construction sectors. These challenges are detailed as follows:

1. South Africa is Failing to Meet its Paris Agreement Obligations

The Paris Agreement²⁷ is a significant international treaty on climate change, which seeks to bind countries to achieving net-zero carbon emissions by 2050 and keep global warming below 2 degrees Celsius and ideally below 1.5 degrees Celsius. However, the United Nations Environment Programme's (UNEP) 2022 *Emissions Gap Report*²⁸, which contrasts commitments against required reductions in order to meet the Paris Agreement targets, notes that there is a lack of significant progress towards the achievement of global commitments by many other major emitters.

Global warming is estimated to be about 1.15 degrees Celsius above the pre-industrial average.²⁹ While this remains below the targets set by the Paris Agreement, should global warming continue, and if further urgent mitigation measures are not pursued, temperatures could rise over 2 degrees Celsius by 2050.³⁰ See Figure 2 below:

Figure 2: Projected Temperature Increase (Degrees Celsius)³¹



On 12 December 2015, the UNFCCC adopted the Paris Agreement, which came into force on 4 November 2016 and currently binds 194 parties (193 states plus the European Union regional bloc).³² Each country is responsible for developing its own climate mitigation plans and commitments and nationally determined contributions (NDC) every five years.³³

In November 2016, South Africa ratified the Paris Agreement, having already submitted its Intended Nationally Determined Contributions (INDC) on 25 September 2015.³⁴ South Africa's primary targets are that emissions will range between 398 and 614 Mt CO₂-eqⁱ between 2025 and 2030, the emission profile will peak between 2020 and 2025, and targets will apply to all sectors of the economy.

South Africa's new 2021 NDCs now set a target of between 398–510 Mt CO₂-eq for 2025 and a target of between 350 and 420 Mt CO₂-eq in 2030. While this is a move in the right direction compared to the 2015 targets (398–614 Mt CO₂-eq), only the lower bound target would see South Africa edge towards meeting its fair contribution necessary to achieve the 1.5 degrees Celsius temperature increase goal. Modelling by the Climate Equity Reference Project indicates that South Africa will ultimately need to adopt an emissions range target between 274 and 352 Mt CO₂eq to be in accordance with the Paris Agreement.³⁵

Figure 3: Target Emissions and 1.5 degree Celsius compatible emissions for 2030³⁶

2015 NDC	2021 NDC	CAT 1.5°C fair share contribution
398-614 Incl. LULUCF	350-420 Incl. LULUCF	350 Excl. LULUCF

(Table sourced from the DA Energy and Electricity Policy – page 11).³⁷

Although South Africa provided absolute targets in its INDC, the commitment did not place the country on the path to limit global warming to +2 degrees Celsius. This aligns with the UNFCCC's report that found that the aggregate effect of INDCs adopted by countries worldwide will not be sufficient to meet target warming levels.³⁸

While South Africa is making progress towards integrating more renewable energy sources, the Climate Action Tracker (CAT) indicates that South Africa's commitments are still insufficient to meet our NDC targets.³⁹

2. A Variety of South African Sectors are High Contributors to Global Emissions of Greenhouse Gases

Many sectors are contributing significantly to global emissions of greenhouse gases.⁴⁰ Below are the key sectors that emit GHG in South Africa:

2.1. High Carbon Energy Production

Over the past 150 years, fossil fuels, including coal, oil, and natural gas, have powered economies worldwide, supplying 80 per cent of the world's energy.⁴¹ Using fossil fuels in energy production significantly contributes to global warming and climate change since burning fossil fuels releases large amounts of carbon dioxide (CO₂), which traps heat in the atmosphere.⁴² Therefore, the reduction in fossil fuel utilisation for energy production is a priority area for addressing climate change. Although South Africa has increased its efforts to reduce greenhouse gas emissions and mitigate climate change, there are still considerable obstacles to meeting its Paris Agreement commitments.

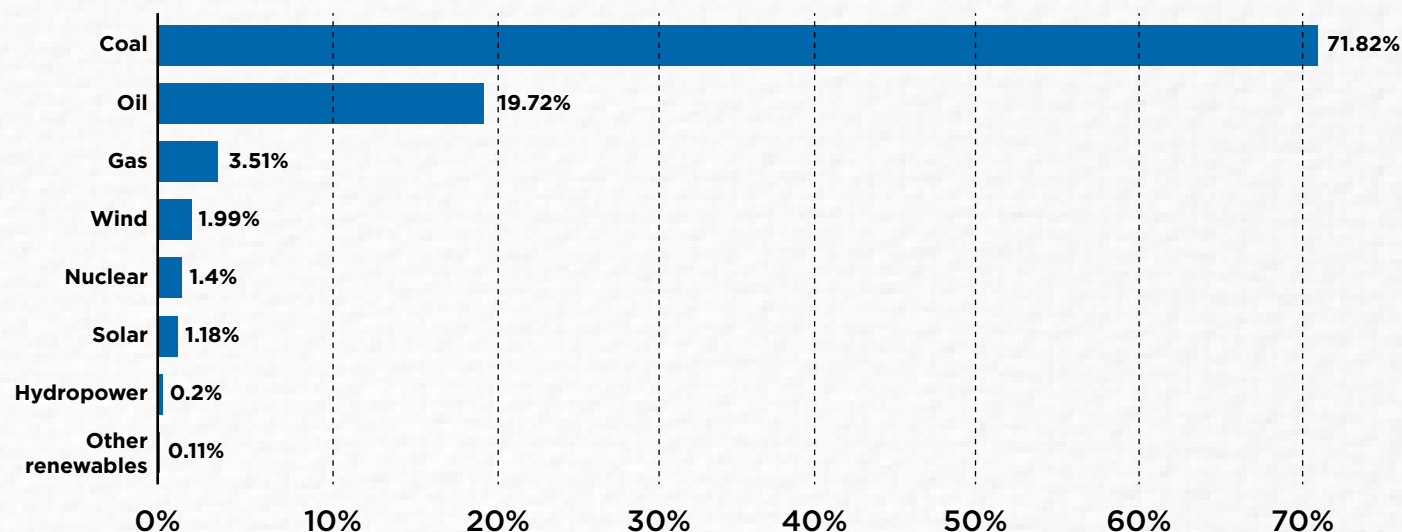
i Mt CO₂-eq - Million Tonnes of CO₂ equivalent.

South Africa's energy sector depends heavily on non-renewable energy sources, particularly coal. Coal accounts for approximately 70.6 percent of the country's primary energy.⁴³ Fossil fuels dominate our energy mix, contributing significantly to the country's CO2 emissions and posing a significant challenge in meeting our carbon emission reduction targets.

Figure 4: Sources of Energy in South Africa⁴⁴

Share of energy consumption by source, South Africa, 2024

Measured as a percentage of primary energy, using the substitution method.



Source: Our World in Data, South African: Energy Country Profile

South Africa is over-reliant on coal, which has significant environmental consequences. Coal is considered the 'dirtiest' fossil fuel, accounting for approximately 40 percent of global CO2 emissions resulting from energy use.⁴⁵ In addition, a significant number of jobs that depend on the coal industry must be accommodated through a 'just energy transition'.

South Africa has outdated and deteriorating coal-fired power stations, which are significant contributors to rolling blackouts and economic stagnation in South Africa.⁴⁶ President Cyril Ramaphosa announced on 25 July 2022 that his government would take several measures to address the energy crisis.⁴⁷ It proposed doubling the acquisition of renewable energy to more than 5,000 megawatts, and incentives will be provided to households and businesses that install rooftop solar panels to sell excess power to Eskom. This was followed through in the 2024 renewable project bid window, which saw the 5,000 megawatt limit oversubscribed.⁴⁸ To facilitate a Clean Jobs Transition, this cap should be increased over time.

South Africa will need to spend approximately \$250 billion over the next 30 years to close coal-fired power plants and transition to wind and solar power.⁴⁹ This will require significant financial assistance, with the Just Energy Transition Investment Plan (JET) having reached approximately \$11.9 billion.^{50,51} However, these funds will not be sufficient to support this effort adequately.^{52,53,54} As a result, greater involvement of the private sector in making the transition to a renewable energy future will be required.

2.2. A High-Carbon Emitting Transportation Sector

Transportation contributes significantly to greenhouse gas emissions, particularly CO₂. South Africa's transport energy mix is based on approximately 99 percent fossil-derived liquid fuels.⁵⁵ Fossil fuels power most cars, trucks, ships, and planes. Nearly one-quarter of global CO₂ emissions are attributed to transportation,⁵⁶ with the most significant contributors being road vehicles due to the combustion of petroleum-based products, such as gasoline, in internal combustion engines.

South Africa's transport sector is responsible for 10.8 percent of the total GHG in the country.⁵⁷ Therefore, establishing a green energy transportation sector is a priority area to reduce South Africa's GHG emissions.

2.3. High Carbon Emissions from Construction and Buildings

Direct and indirect emissions from the building sector in South Africa significantly contribute to CO₂ emissions. The country's building sector contributes approximately 4.57 percent directly and 21.68 percent indirectly to the total energy-related CO₂ emissions.⁵⁸ In addition, South Africa's building emissions per capita are 1.8 tonnes of CO₂, which is higher than the G20 average of 1.4, and shows little sign of decreasing.⁵⁹ The G20 average decrease in building emissions was about 3 percent from 2015 to 2020, while South Africa has achieved a decrease of only 0.5 percent.⁶⁰

Building construction and operations are one of the largest emitters of CO₂, contributing nearly 40 percent of energy-related CO₂ emissions globally.⁶¹ It is estimated that approximately 28 percent of global energy-related carbon emissions result from the energy needed to heat, cool and power buildings, while 11 percent results from building materials and construction.⁶²

Residential and commercial buildings consume over half of all electricity worldwide, with South African residential consumption being slightly lower at approximately 19 to 23 percent.^{63,64,65,66} Households rely on coal, oil, and natural gas for heating and cooling, emitting significant GHG quantities. Building emissions can occur directly from burning fuels for heating and cooking, and indirectly from grid electricity for air-conditioning and other appliances.

Energy demand for heating and cooling, air conditioners, lighting, appliances, and connected devices has increased in recent years, increasing building-related CO₂ emissions.⁶⁷ Therefore, the built environment and construction are low-hanging fruit to achieve reductions in carbon emissions.

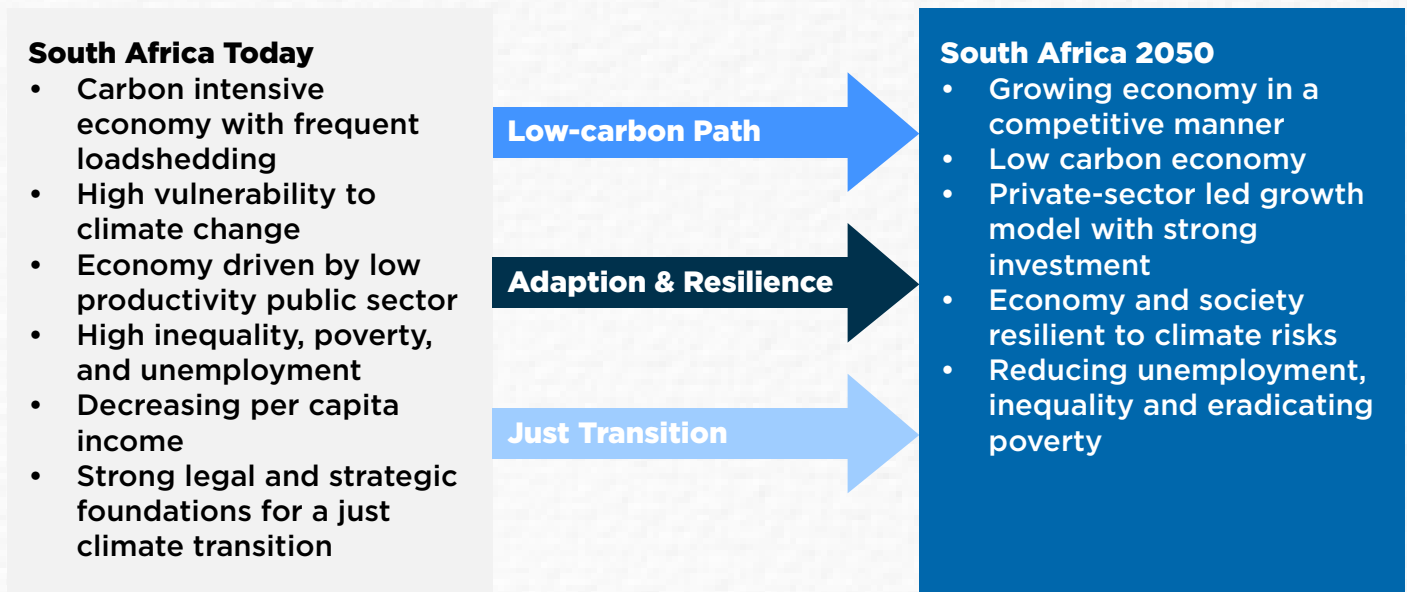
Recommendations for Addressing South Africa's Contributions to Climate Change

The DA will address South Africa's high contributions to climate change by:

- **Ensuring the concurrent implementation of the 'Three Interconnected Transitions.'** The DA will seek to focus its climate change policies on three foundations – these being decarbonisation, investing in adaptation and resilience against the harms of climate change, and establishing a 'Clean Jobs Transition' which addresses the social fallout from establishing a low-carbon economy. This focus is supported by the World Bank's most recent *Country Climate and Development report for South Africa*, which estimates that policies focusing on the three socio-economic transitions in tandem could boost GDP growth by 2.3 percent per year between 2022 and 2050.⁶⁸
- **Reaffirming commitments to combat climate change and work towards meeting our global emission reduction targets.** We will reaffirm South Africa's commitment to the Paris Agreement on Climate Change and work to bring South Africa's nationally determined contribution in line with South Africa's fair share contribution.

Figure 5: The Three Interconnected Transitions⁶⁹

Three interconnected transitions



However, we remain acutely aware of the developmental priorities that South Africa must consider in determining its fair share contribution and implementing these mitigation interventions. These include, but are not limited to, employment in certain sectors of the economy, particularly those in coal mining and related services such as transport. We will require substantial financial, human capital and technological support from the developed world to achieve our NDC and fast-track our transition towards a low-carbon future.

- **Ensuring a ‘Clean Jobs Transition’** by committing to a gradual transition towards a low-carbon future. This will include the following:
 - **Seeking to reduce the risks faced by workers, low-income communities, and small businesses involved in carbon-intensive industries.** The DA recognises that a ‘just transition’ will require establishing new opportunities such as a green hydrogen economy,⁷⁰ the production of electric vehicles, the mining of strategic minerals required for the production of clean energy, and training for all to ensure that as few people as possible are left behind during the transition to a low-carbon future.⁷¹ Significant stakeholder engagement must occur with affected communities to ensure fairness in decision-making when taking actions to support the transition.⁷² An international example of this is the Province of Alberta, Canada, where a community engagement process led to the creation of a programme for compensation of coal utilities for stranded assets, the provision of financial assistance for workers to relocate, retrain and find jobs, as well as the provision of funds for economic diversification in affected communities.^{73,74}
 - **Incentivising and supporting a ‘Clean Jobs Transition’** from the current unsustainable and carbon-intensive energy and electricity sectors to a sustainable, net carbon-zero energy sector that supports reindustrialisation around the green economy. This will be achieved through reskilling and retraining with a goal of net job creation, not only within the energy and electricity sector but also throughout the broader economy.⁷⁵ The DA will seek to ensure that jobs created through the ‘Clean Jobs Transition’ encompass all skill levels, are well-paid, and are better for a worker’s health.
 - **Ensuring a ‘Clean Jobs Transition’ to a low carbon future in mining areas** such as the Mpumalanga coal fields, the North West platinum fields, and the Free State gold fields, which all have the necessary infrastructure, skills and customer base to ensure an effective reindustrialisation and Clean Jobs Transition to a green economy.⁷⁶ This involves reskilling programmes focused on work in renewable energy industries and repurposing

manufacturing for renewable energy components.

- **Facilitating concessionary ‘green’ finance, loans and grants for a just energy transition.** These will be used to assist with accelerated decarbonisation of the South African economy through the increased uptake and usage of renewable hydrogen-based power fuels in the transportation, iron and steel, cement, mining and chemical sectors.⁷⁷ The DA will further ensure that any conditions attached to this financing are fair and take into consideration the unique socio-economic challenges which South Africa faces.

It should be further acknowledged that while a ‘just transition’ to a renewable energy sector is necessary, the establishment of a robust renewable energy sector has the potential to create new jobs. In 2021, renewable energy jobs totalled 12 million globally,⁷⁸ and within South Africa, a just energy transition is expected to result in the net creation of approximately 515 000 new jobs by 2050.^{79,80} Furthermore, additional jobs can be created throughout the value chain, for example, within manufacturing, distribution of equipment, production of chemicals and the installation and management of new renewable energy projects.⁸¹ The DA will promote the establishment of new jobs for all skill levels. The DA will simultaneously upskill and reskill individuals through educational programmes that provide individuals with the skills needed to secure jobs.

Decarbonising the Energy Sector. While South Africa is considered one of the most carbon-intensive countries in the world and the most carbon-intensive in Africa, the realisation of the need to decarbonise has begun to gain momentum. Our commitments to decarbonisation of the energy sector are extensively outlined in our [Energy and Electricity Policy](#). The DA will ensure that South Africa follows the least costly path to securing reliable and sustainable energy and electricity supply by:

- **Reducing greenhouse gas emissions through increased renewable energy in the country’s energy mix.** This will be achieved by expanding wind and solar photovoltaic systems (PVs) and will be complemented by flexible generation capacity with gas-to-power, hydroelectric power, pumped water storage and battery energy storage facilities.⁸²
- **Introducing legislative and regulatory interventions to empower independent private electricity** suppliers to generate and freely trade as much renewable energy as possible without delay.
- **Reviewing and streamlining restrictive regulations and processes** that unnecessarily inhibit and restrict the public and private sectors’ rapid procurement and uptake of new renewable energy generation capacity. This will be achieved by creating frameworks for residential Small-Scale Embedded Generation (SSEG) that municipalities can rapidly implement. The DA will further streamline IPP licensing and registration processes to ensure faster turnaround times and seek to address bottlenecks at Eskom for off-take agreements.⁸³
- **Promoting and actively facilitating the emergence of “prosumers”** where customers of electricity may also generate renewable energy into the grid when they have surplus energy, and working towards harmonised feed-in tariff structures and standards where we govern.⁸⁴
- **Incentivising the uptake of rooftop solar for residential purposes** by granting a once-off tax rebate of up to R75 000 for the installation of small-scale embedded generation.⁸⁵
- **Removing restrictions preventing consumers from feeding more electricity into the grid than they use.**⁸⁶
- **Ensuring that energy and electricity are provided sustainably, meeting statutory minimum emission standards,** at least cost, using the least water and at the lowest possible emissions, to mitigate climate change.⁸⁷
- **Adopting a cautious position on natural gas** and advocating instead for localised production of renewable, green hydrogen, green ammonia, and other green hydrogen-based derivatives, both for export and for local use.⁸⁸
- **Committing to the gradual phasing out of new coal-fired power stations** in a planned phased programme, as alternative, cleaner and more sustainable sources of electricity generation become available.⁸⁹

- **Upgrading, in the medium term, Eskom's remaining assets**, including its fleet of thermal coal power stations, to minimise emissions, or sold with emission requirements in place.⁹⁰
- **Focusing on smaller, micro-grid and off-grid hydroelectric power opportunities** and withdrawing from the Grand Inga hydropower project.⁹¹
- **Extending the lifespan of Koeberg by 20 years while simultaneously setting aside ambitions for new nuclear generation plants** in South Africa for the short and medium term. The DA will also seek private investment partners for potential medium-to long term nuclear builds.⁹²
- **Establishing watching briefs to monitor global developments in the international nuclear power sector.**⁹³ These briefs will be tasked with paying particular attention to developments with respect to the commercialisation of small modular nuclear reactors (SMNRs), new generation large nuclear reactors, and nuclear fusion technologies.⁹⁴
- **Adopting watching briefs on international developments** in the fields of 'clean coal' technology, underground coal gasification and carbon capture and storage to determine whether and when these new technologies may play a value-adding role in contributing towards South Africa's commitments to decarbonisation of the energy and electricity sectors.⁹⁵



Where We Govern

City of Cape Town

In January 2023, the City of Cape Town announced that it would pay cash for power fed into the local electricity grid from residents. This was possible after the City applied for an exemption from competitive bidding processes under section 3 of the Preferential Public Procurement Framework Act (PPPFA), which hindered the ability of the City to pay local residents for power fed into the grid from SSEG systems.

The City also rescinded the policy that mandated power sellers to be 'net consumers' of energy. This policy had previously only allowed for municipal bills to be credited for excess power rather than providing cash payments as compensation.

The collective impact of these changes will assist the City in enhancing its energy resilience and achieving its goal of load-shedding protection up to four stages.⁹⁷

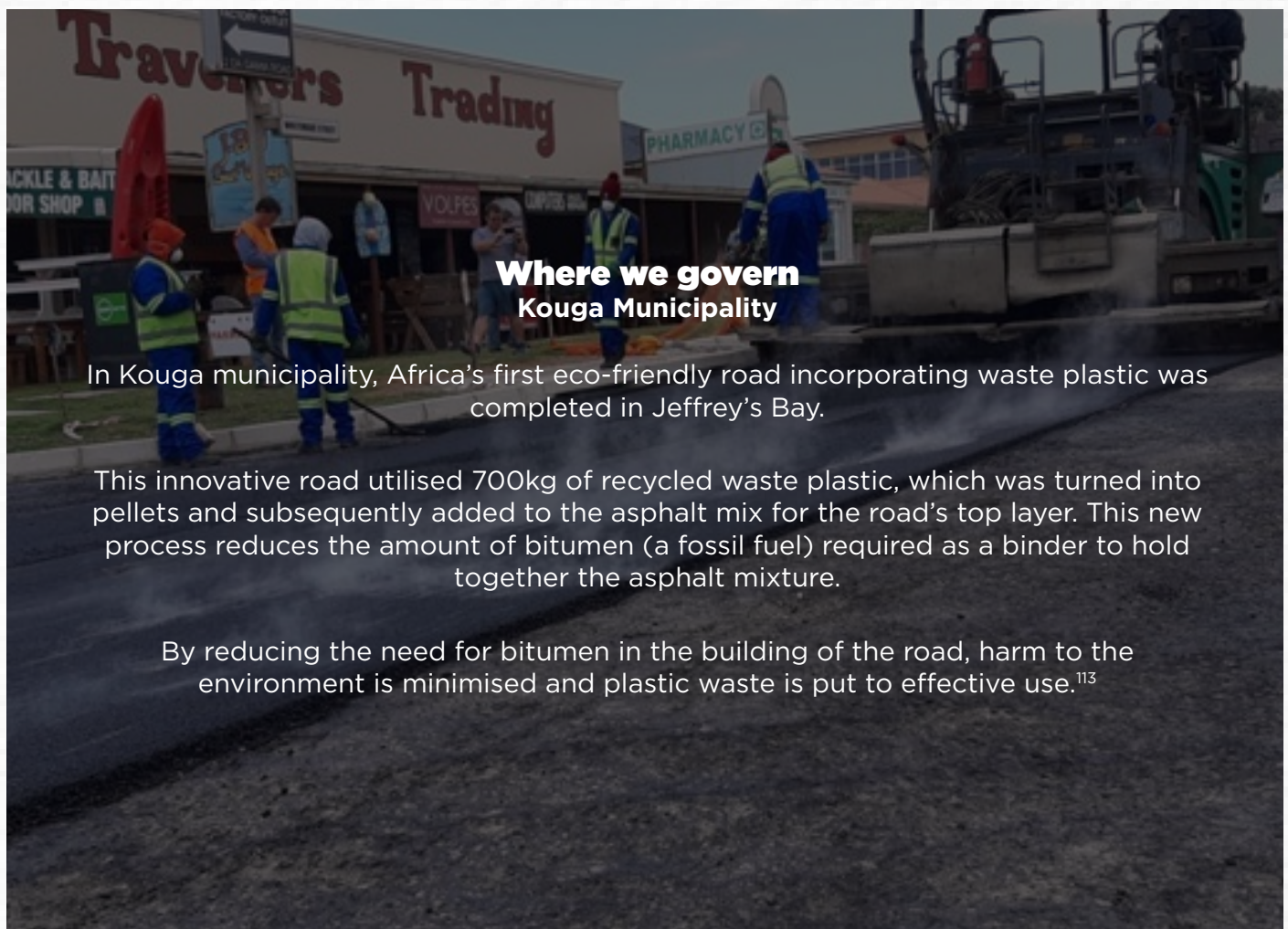
The DA will implement measures to decarbonise the transport sector by:

- **Reviewing and amending existing transportation sector policies**, regulations, and planning processes towards achieving zero-net emissions, as the sector is a large contributor to greenhouse gas emissions through fossil fuel combustion.⁹⁸ This supports the decarbonisation of the transportation sector towards fuel-cell and battery-powered electric vehicles.⁹⁹ However, this is contingent on the development of effective and reliable charging infrastructure in major cities and along key transportation routes.
- **Actively signalling, incentivising and facilitating a national commitment to a transition** from hydrocarbon-based liquid fuels to carbon-neutral, renewable hydrogen-based power fuels to power the transportation sector.
- **Encouraging local production of renewable, hydrogen-based power fuels** for cars, trucks, buses and trains through lower taxation levels and/or subsidies to make their pricing more competitive. These will be targeted, time-bound support for emerging industries. The incentive will only be in effect while the EV sector in South Africa is an emerging industry, rather than for established industries which have already benefitted from support over a prolonged period.
- **Initiating the transformation of the liquid fuels sector** through legislation to enforce compliance with standards comparable to Euro Emission Standards (Euro 5), which requires all diesel vehicles to have particulate filters (DPFs) which trap microscopic pieces of soot in them.^{100, 101} This will ensure cleaner fuels, thereby minimising harmful environmental impacts.¹⁰² This will be gradually phased in to ensure small businesses and private diesel vehicle drivers have the time required to adhere to the new standards.
- **Exploring cost-effective green synthetic fuels** (or e-fuels) as an alternative to traditional fossil fuels for ships and aircraft.¹⁰³
- **Actively signalling, incentivising and facilitating** the local manufacture, assembly and installation of electric vehicle charging and green refuelling facilities throughout South Africa to support the uptake of electric vehicles.¹⁰⁴
- **Removing any import tariff barriers on electric vehicles** and components for the local manufacturing and assembling of electric vehicles that inhibit the uptake and competitiveness of the electric vehicles sector in South Africa. This will improve the cost-effectiveness of electric vehicles in the market.

- **Implementing a zero rating of electric vehicles** to encourage their adoption through greater price competitiveness.¹⁰⁵ This will make the purchase price of electric vehicles more accessible to the public.
- **Supporting the local manufacturing and utilisation of battery-powered passenger trains and rail freight transportation** as cleaner alternatives to fossil fuel-based transportation methods.^{106,107,108}

The DA will address the environmental impacts of conventional construction by:

- **Investing in innovative designs and construction methods in new construction projects by the government.** These designs and methods can minimise the environmental impact of conventional construction and the consumption of natural resources. For example, the use of dry construction in buildings can reduce the consumption of fresh water. In dry construction, little or no water is used during the construction process. Instead, various materials are used, including glass, aluminium, and steel.¹⁰⁹
- **Conducting research and development on sustainable alternatives for building materials.** There is an embodied energyⁱⁱ in many conventional building materials that slowly dissipate throughout the building's life cycle. Embodied energy is used during a component's extraction, manufacture, transportation, and assembly. GHG emissions are also caused by embodied energy in buildings. For example, asphalt (also known as bitumen) emits bituminous aerosols and polycyclic aromatic hydrocarbons (PAHs) aerosols, which can adversely impact human health and ecosystems.¹¹⁰ These bitumens are used as a binder to hold together the asphalt mixture.¹¹¹ By conducting intensive research on building materials, sustainable alternatives can be developed. Drought and other extreme weather conditions are also caused by aerosol accumulation in the atmosphere.¹¹²



Where we govern Kouga Municipality

In Kouga municipality, Africa's first eco-friendly road incorporating waste plastic was completed in Jeffrey's Bay.

This innovative road utilised 700kg of recycled waste plastic, which was turned into pellets and subsequently added to the asphalt mix for the road's top layer. This new process reduces the amount of bitumen (a fossil fuel) required as a binder to hold together the asphalt mixture.

By reducing the need for bitumen in the building of the road, harm to the environment is minimised and plastic waste is put to effective use.¹¹³

ii Embodied energy is a calculation of all energy that is used to produce a material, as if that energy was incorporated or 'embodied' material itself.

The DA will address the environmental impacts of corporate activities by:

- **Introducing comprehensive legislation to create a standard methodology** by which companies measure their impact on the natural environment and regulate the practice of corporate greenwashing. This will be achieved by developing a Green Claims Code / Checklist with the intention of protecting South African consumers and providing clear guidelines to the business community on how to substantiate the green credentials of their products and services.¹¹⁴

Current and Future Harmful Impacts of Climate Change

The United Nations Environment Programme's 6th Global Environmental Outlook¹¹⁵ and UNEP's Global Synthesis Report for the UN General Assembly¹¹⁶ both highlight the compounding adverse effects of biodiversity loss, climate change, and pollution challenges, which now face civilisation.

The Intergovernmental Panel on Climate Change's Sixth Assessment Report¹¹⁷ describes how climate change is projected to have increasingly dramatic and widespread impacts on Africa's ecology, human societies, and peoples' interactions with their natural environment. These impacts are already experienced in terms of overall increasing temperatures, lowered crop yields, freshwater availability, and the increasing frequency of extreme weather events.

This requires climate adaptation policies which promote resilience to the effects of climate change, the establishment of sustainable livelihoods, and the restoration of ecosystems.¹¹⁸ The harmful effects of climate change include the following:

1. Rising Temperatures and Associated Ecological Changes

Global temperatures have been **rising at an alarming rate**.¹¹⁹ This is evidenced by 2023 being the hottest year on record, and the world being 1.48 degrees Celsius warmer than long-term temperature averages.^{120,121,122}

While temperatures in Africa have warmed at a comparable rate to that of other continents,¹²³ **temperatures over the South African interior are expected to increase between 1.5 and 2 times that of the global average**.¹²⁴ A report for the Centre for Environmental Rights highlighted that Southern Africa is particularly vulnerable to climate change, with the interior of Southern Africa warming twice as quickly as the global average.¹²⁵ According to projections, as temperatures rise, heat waves are more likely and will last longer.

There are multiple negative effects of high temperatures, which can include an increase in mortality, a reduction in productivity, and damage to infrastructure. The most vulnerable members of the population, such as the elderly and infants, will be particularly affected.¹²⁶

Temperature changes alter the distribution and abundance of several plant and animal species. Rising temperatures and changing seasons may also affect the phenology - the behaviour and life cycle of animals and plants, such as early flowering.¹²⁷ These climate changes will create significant potential for invasive alien species (IAS) to increase their rate and extent of invasion, thereby altering the distribution of plant communities and their related ecosystems.¹²⁸

The yields and viability of agriculture and livestock could also be adversely affected, as well as the ability of ecosystems to provide essential life resources (such as clean water and air).¹²⁹ Temperature increases accelerate water evaporation, which, in conjunction with a lack of precipitation, contributes to the increased risks of severe droughts.¹³⁰

2. Extreme Weather Events

South Africa suffered the most disaster weather events out of all African countries between 2010 and 2022.^{131,132} The country recorded 33 disaster events since 2010, followed by Madagascar with 32 events, and Kenya and Mozambique with 31 events each.

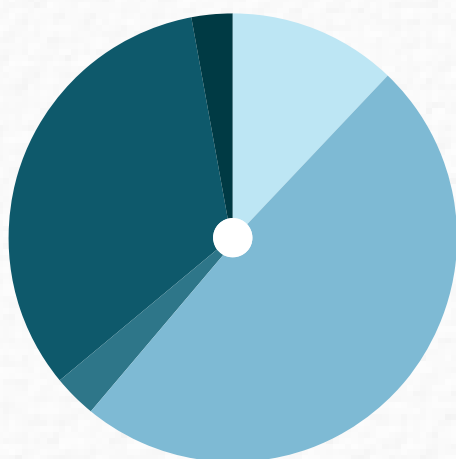
Floods were the most severe of these events. Between 11 and 13 April 2022, heavy rains caused flooding and landslides across KwaZulu-Natal and the Eastern Cape provinces in South Africa. These floods caused the deaths of more than 400 people, the destruction of more than 12,000 homes and the displacement of more than 40,000 people.¹³³ According to the World Weather Attribution (WWA) service, climate change has doubled the probability of this event from once every 40 years to once every 20 years.¹³⁴ According to the WWA, rainfall intensity over the two days was 4 to 8 percent higher than it would have been absent climate change.¹³⁵

Heavy rains were also experienced in the Western Cape in September 2023, where 143 mm of rain was recorded in Cape Town over two days, at least 11 deaths were recorded, and the Western Cape Government estimated R1.4 billion in damages to the Agricultural sector.^{136,137,138}

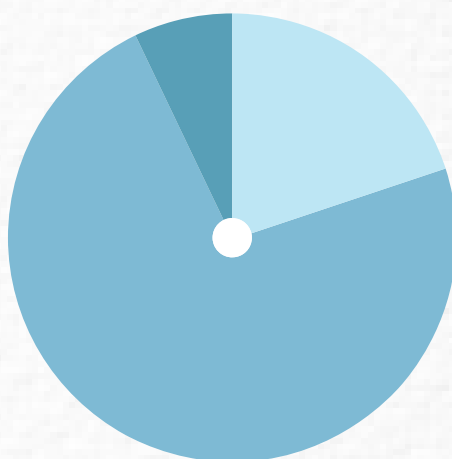
Other extreme weather events affecting South Africa are storms, droughts, wildfires, and extreme temperatures.

Figure 6: South African Water Consumption per Sector¹⁹⁴

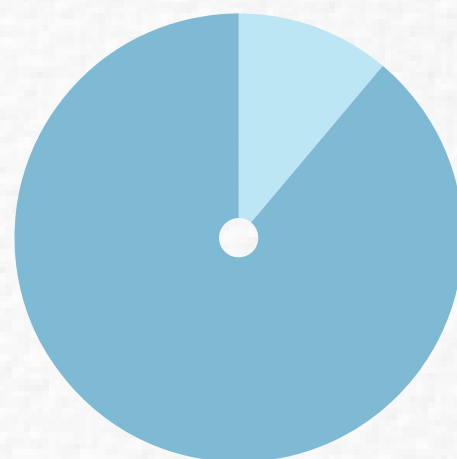
South Africa: extreme weather events (2010-2022)



Kenya: extreme weather events (2010-2022)



Angola: extreme weather events (2010-2022)



Legend:

- Drought
- Flood
- Storm
- Landslide
- Extreme Temperature
- Wildfire

Source: Mo Ibrahim Foundation, 2022

3. Water Scarcity

South Africa is considered a predominantly semi-arid country,¹⁴⁰ and water is already one of South Africa's most limited resources, with an average rainfall of 497mm a year¹⁴¹, which is below the world's average of 860mm per year.¹⁴² These water limitations are further exacerbated by climate change. Increasing extreme weather events, such as droughts, are likely to result in greater water scarcity in certain parts of the country.

4. Negative Health Impacts

Climate change will exacerbate health risks, including heat stress, vector-borne diseases, air pollution, and communicable and non-communicable diseases.¹⁴³ Recent research attributes 37 percent of heat-related deaths to climate change causes, and the World Health Organisation conservatively projects an additional 250 000 deaths between 2030 and 2050 due to climate change effects on diseases such as malaria, malnutrition, diarrhoea, heat stress and coastal flooding.^{144,145}

As a result of the changing climate, the distribution of disease vectors would also change over time. Shifting biotic ranges and the increasing contact humans have with previously undisturbed natural areas due to migration will increase the risk of diseases being transferred from animals to humans.¹⁴⁶ At a minimum, there are 10 000 virus species with the ability to infect humans at present, but the majority are circulating only among wild animals.¹⁴⁷

Biodiversity loss will result in significant health impacts under circumstances where ecosystem services are no longer adequate to meet social needs. In addition, biological diversity provides extensive products related to health and pharmaceutical sciences.¹⁴⁸ The loss of this biodiversity will result in limits on the future discovery of treatments for diseases and health problems.¹⁴⁹

5. Food Insecurity

Agriculture faces several key risks with climate change, including decreased crop productivity due to heat and drought stress, increased pest and disease damage, and flooding impacts on the food system infrastructure. This will directly impact regional, national, and household food security and livelihoods.¹⁵⁰

Rising temperatures and prolonged droughts may result in reduced soil moisture levels, which reduce plant growing days. In addition, heat stress may make agricultural labour difficult, thereby negatively affecting the entire agricultural sector. This may result in decreased crop and livestock production, which may significantly impact rural incomes.¹⁵¹

Much of the area suitable for maize production might become unsuitable due to decreased rainfall and soil moisture due to climate change.¹⁵² The effects of climate change on soil will vary with region and climatic conditions. This variation means that a broad, one-size-fits-all approach cannot be used to address the effect of climate change on soil health. Understanding the factors influencing soil at a local scale is critical for developing adaptation measures.¹⁵³

Global food production systems have already been experiencing more sudden shocks, with extreme weather events being the primary cause. Extreme events such as hailstorms, floods, and heat stress will increasingly destroy South African crops and livestock.¹⁵⁴ It is expected that small-scale farmers in environments that already experience significantly high temperatures and who lack resources for adaptation and mitigation measures will be most at risk from the effects of climate change.¹⁵⁵

6. Climate-Induced Migration

As areas become less habitable, large-scale migration towards more temperate climates, like South Africa, is likely. This will be due to increased resource scarcity. Informal settlements are expected to expand dramatically, including in-migration from countries to the north. Climate change can also impact livelihoods throughout the region, causing conflicts and xenophobia that breed violence.¹⁵⁶

7. Economic Impacts

In less developed countries, such as South Africa, where fiscal resources are already limited, disaster response, relief work, and reconstruction will likely exceed the ability of the state to respond adequately.¹⁵⁷ This will adversely affect future service delivery and socioeconomic well-being. To illustrate the magnitude of the costs involved in addressing climate impacts (projected to increase over the years), the amounts allocated to drought relief funds between 2016 and 2020 amounted to a staggering R990 million.¹⁵⁸ However, even this figure falls significantly below the estimated cost of the 2022 flood damages in KZN of R17 billion alone.¹⁵⁹ In a country with a weak economy, massive unemployment, and significant inequality, the rising costs of disaster relief and rebuilding will become increasingly unaffordable.¹⁶⁰

Recommendations for Addressing South Africa's Contributions to Climate Change

The DA will address the negative effects of climate change by:

- **Establishing awareness campaigns** to inform the public about the likely future effects of climate change.
- **Developing Climate Change Strategies** for all DA governments, to provide high-level strategic guidance for programme and project development, and general decision-making. These strategies will be modelled on the DA-led City of Cape Town's Climate Change Strategy, which seeks to reduce and adapt to climate change risks, while mitigating greenhouse gas emissions.¹⁶¹
- **Reviewing and amending health policies and programmes to deal with the future impacts of climate change.** Development of policies and programmes to deal with the future impacts of climate change requires effective public health surveillance, including high-quality observations of diseases and risk factors.
- **Ensuring that "Climate Risk" is incorporated into the terms of reference of the National Intelligence Estimates** produced by the State Security Agency (SSA). This will ensure that the SSA fully incorporates the risks and threats posed by climate into its approach when analysing national security threats to the Republic of South Africa.¹⁶²
- **Promoting multiple cropping to increase the chances of sufficient yields** in harsh climatic conditions. As a result of planting multiple crops, the surviving crops will provide a safety net in the event of adverse weather conditions. The practice of multi-cropping ensures that families will be able to harvest some crops even if other crops fail.¹⁶⁴
- **Developing localised and context-specific regional plans** tailored towards the climatic conditions and soil type of each area, and predicting climate change for each area. Impacts vary across regions, and the bulk of climate change impacts is felt at a local or regional level. Regional and local governments are important actors¹⁶⁵, and plans should further streamline the provision of services and resources required to meet regional needs.¹⁶⁶

This includes several provisions:

- **Areas predicted to have heavy rainfall and flooding under climate change will face greater water erosion and waterlogging of soils.** Adaptation methods include introducing drainage systems to slow surface runoff and restoring vegetation around rivers to reduce river flow. In contrast, areas predicted to have increased temperatures and a higher drought risk will face reduced water supply. These areas can adapt by introducing irrigation systems and backup water sources.¹⁶⁷
- **Promoting forest restoration.** These practices increase carbon sequestration (the transformation and storage of atmospheric carbon dioxide in soil). Additionally, forested areas regulate runoff and erosion and contribute to providing a stable source of water for irrigated agriculture, which is crucial as droughts increase.¹⁶⁸
- **Educating small-scale farmers on climate-smart agricultural techniques** such as rainwater harvesting and utilising drought-resistant seed varieties in South Africa.¹⁶⁹
- **Ensuring sufficient budgetary allocation for future disaster relief** is incorporated into the budgets of all spheres of government. These funds must be used to improve, maintain and protect existing infrastructure, which is vulnerable to the effects of climate disasters.
- **Establishing a Civil Protection Mechanism (The Thunderbirds)** to mitigate the impact of Disasters, to provide assurance, and to protect municipalities from catastrophic scenarios.¹⁷⁰
 - This mechanism will be accessible to all capable municipalities within the Republic who opt to contribute to the envisaged common municipal risk pool.
 - This civil protection mechanism will consist of a nationally deployable stand-by fleet of emergency vehicles, with heavy disaster management response air and ground assets, and highly trained rescue professionals who will operate under the envisaged Civil Protection Mechanism.

Where We Govern Western Cape

South Africa has over 2800 kilometres of coastline, which are vulnerable to coastal erosion and the impacts of sea-level rise. The effects of climate change are increasingly threatening the safety of our coastal areas, due to higher frequencies of storm surges, flooding, erosion, and dune shifting.

To mitigate and adapt to these challenges, the DA-led Western Cape Government established South Africa's first coastal management line. The coastal management line aims to assist in protecting citizens, their properties, and regional economic activities from extreme climate-related coastal events. This will be achieved through managing risk and encouraging sustainable and resilient coastal development as outlined in the Western Cape Provincial Coastal Management Programme.

This initiative demonstrates that DA governments are leading the way in climate change mitigation and adaptation measures.

The DA will address the substantive changes in biome compositions by:

- **Establishing improved 'real-time' data collection on changes in biome compositions.**
- **Promoting and enhancing conservation corridors** across the country to promote biodiversity conservation and reduce overpopulation of national parks.^{171,172,173} This will be achieved by partnering and working closely with conservationists and national parks to identify areas suitable for the establishment of conservation corridors.



Objective 2: Ensuring Effective and Efficient Water Resource Management



The DA will ensure that our water resources are effectively managed through improvements in water supply and related infrastructure, effective demand management, improved water quality, and prevention of water wastage.

South Africa is a water-scarce country, receiving just half of the global average annual rainfall, at around 460mm/yr.^{174,175} This results in our nation being unable to always provide sustainable access to clean water to all its people.¹⁷⁶ This is attributable to climatic conditions, such as insufficient rainfall and droughts, as well as escalating water demands (increasing population and industrialisation).

Water scarcity is also exacerbated by the government's mismanagement of water resources, as evidenced by the downward trend in the reliability of water services and infrastructure, which is reflected in frequent interruptions of the water supply in many parts of the country. Failure to effectively manage and conserve our water resources will adversely affect the nation's health, education, and economic development.

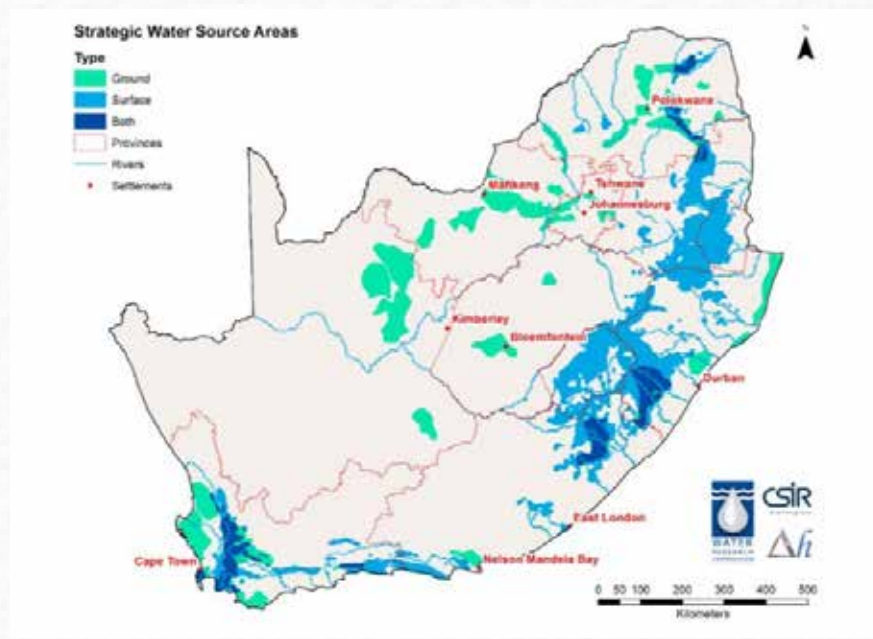
Therefore, if we are to grow a sustainable economy that meets the needs and aspirations of all South Africans, we must acknowledge the limitations of our water resources and take measures to protect and conserve them. **A DA government will address the various challenges** that prevent us from ensuring an effective and efficient water supply through improvements in water resource management. There are various challenges related to water, which will be addressed below.

Lack of Water Supply and High Consumption

1. Lack of Water Supply

Water availability is inconsistent across the South African landscape. South Africa's rainfall spatial distribution and seasonality are uneven because 43 percent of the rain falls on 13 percent of the land.¹⁷⁷ South Africa's Strategic Water Source Areas (SWSA) also cover just 10 percent of the nation's land area, yet provide 50 percent of the available freshwater resources for the country, supporting at least 50 percent of the population, approximately two-thirds of the economy, and supplying about 70 percent of the water used by irrigated agriculture.¹⁷⁸ These SWSAs should receive highly protected status, yet only 11 percent of these areas currently receive some form of legal protection.¹⁷⁹ This requires urgent attention, as formal legal protection would provide affected communities with legal remedies to enforce the protection of these critical water resources.¹⁸⁰

Figure 7: South Africa's Strategic Water Source Areas (SWSAs)¹⁸¹



In addition, rainfall is insufficient, with an average of approximately 460 mm annually – which is nearly 50 percent less than the global average of 860 mm per year.¹⁸² Another factor is the relatively low stream flowⁱⁱⁱ in rivers, which limits the amount of water resources that can be utilised. South Africa's water resources consist of the following three sources: surface water^{iv} (77 percent), recycled water^v (14 percent) and groundwater^{vi} (9 percent).¹⁸³ The country relies primarily on surface water resources for its urban, industrial, and irrigation needs.¹⁸⁴ This high reliance on a single source of water indicates a lack of diversification, thereby increasing the risk of volatility in South Africa's water supply. There is a need for South Africa to diversify its water supply portfolio to increase our nation's water security.¹⁸⁵

2. High Consumption

Population growth has resulted in increased water demand and pressure on limited water supplies, which necessitates a greater focus on demand-side management to resolve our water scarcity concerns. South Africa's population has been steadily rising, as evidenced by the 2022 census, which revealed the population to have increased from 40.6 million in 1996¹⁸⁶ to 62 million South Africans in 2022.¹⁸⁷ This has resulted in increased water demand as piped water access within dwellings has risen from 32.3 percent to 59.7 percent between 2001 and 2022.¹⁸⁸ This increase in demand is exacerbated by South Africa's high average domestic water use of 256 litres per person a day, which is 83 litres higher than the international benchmark of 173 litres per person a day.^{189,190,191}

In terms of overall water consumption by sector, South Africa's agricultural sector is the largest consumer of water, accounting for 61 percent of total water consumption. This is followed by domestic consumption accounting for 27 percent, industrial operations for 3 percent, and afforestation for 3 percent of total water consumption.¹⁹² The high percentage of usage from the agricultural sector makes this sector an important area for reducing demand pressures.

In addition, South Africa's coal power stations require large amounts of water to operate their cooling systems, and account for approximately 2 percent of South Africa's water consumption. Within the Upper Olifants Catchment region alone, it is estimated that power generation accounts for 37 percent of water usage.¹⁹³



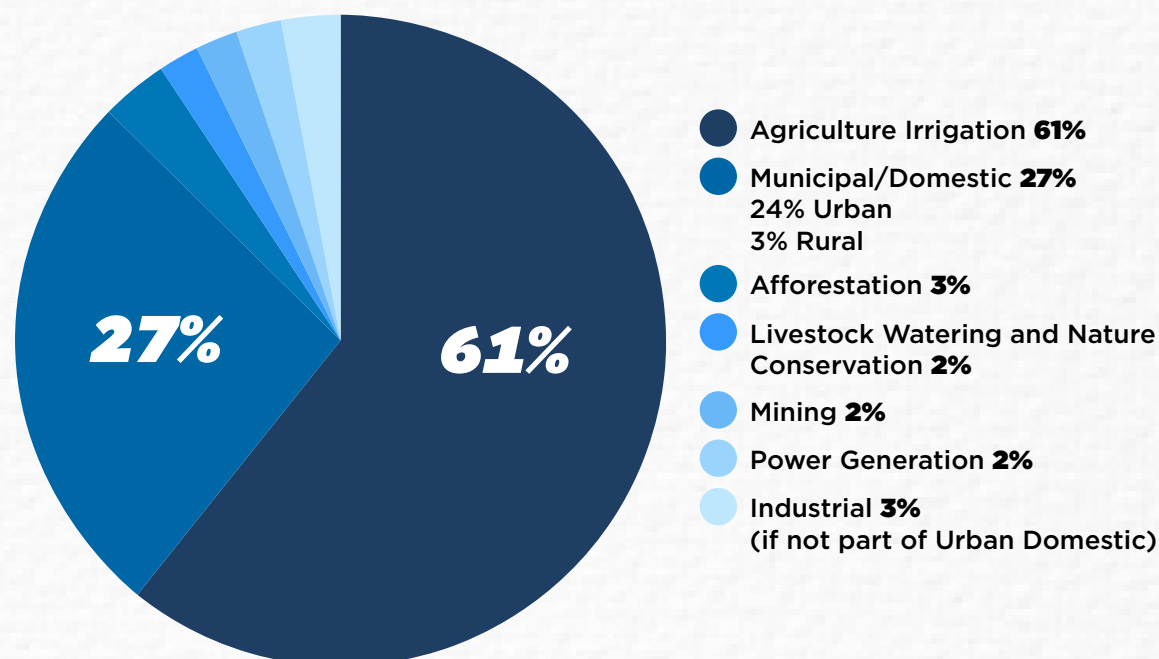
iii Stream flow refers to the flow of water in a natural watercourse (a stream or a river). Low stream flows occur when the water level flow in these watercourses is low, usually because of prolonged periods of dry weather conditions. See Raczyński, Krzysztof, and Jamie Dyer. 2022. "Development of an Objective Low Flow Identification Method Using Breakpoint Analysis" *Water* 14, no. 14: 2212. <https://doi.org/10.3390/w14142212>

iv Surface water is any body of water above the ground, such as a stream, river, lake, wetlands, reservoir, or creek. See National Geographic Society. 2019. "Surface Water." National Geographic Society. August 7, 2019. <https://www.nationalgeographic.org/encyclopedia/surface-water/>

v Recycled water involves the treatment of wastewater by removing solids and other impurities and disinfecting it in a water treatment facility to reuse it. See What is Recycled Water. 2014. "What Is Recycled Water?" USGA. May 20, 2014. <https://www.usga.org/course-care/water-resource-center/our-experts-explain--water/what-is-recycled-water-.html>

vi Groundwater is water found underground. It can be found in the cracks and spaces in soil, sand and rock. See CSIR. 2021. <https://pta-gis-2-web1.csiir.co.za/portal/apps/GBCascade/index.html?appid=73c7e05d7a1e4b0dbacc99b3709f7065>

Figure 8: South African Water Consumption per Sector¹⁹⁴

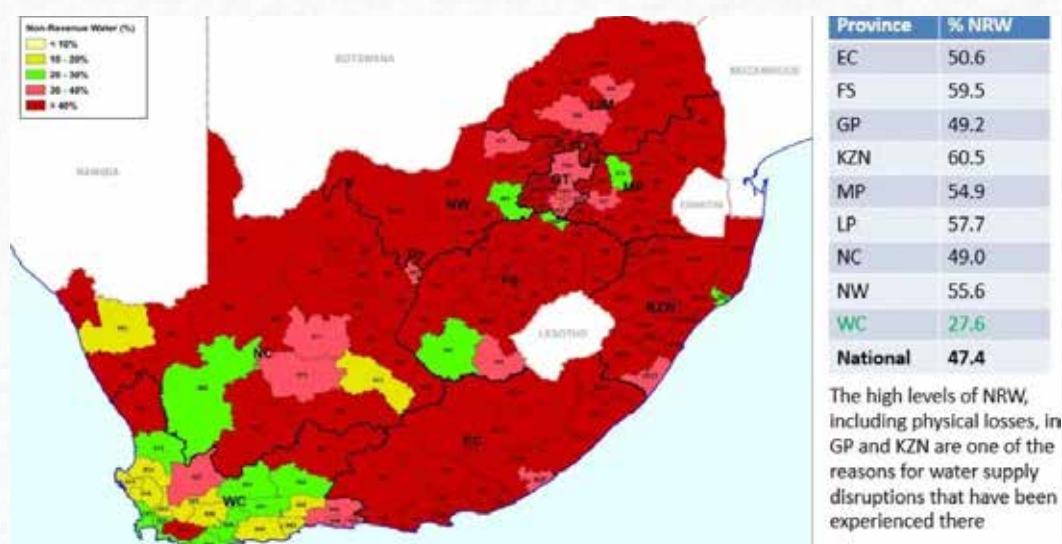


Source: ECD Tanks. 2022

South Africa's water resources are limited,¹⁹⁵ with consumption increasingly outpacing supply. This problem has been exacerbated by a failure to invest adequately in new water infrastructure, with no new large dams having been built since 2014.¹⁹⁶ To remedy the lack of new water infrastructure builds and maintenance, the Department of Water and Sanitation (DWS) estimated that R90 billion per year will be required over the next decade to repair and upgrade existing water infrastructure to provide reliable water and sanitation services across the country. However, between 2018 and 2022, expenditure averaged R16.93 billion^{197,198,199,200,201} annually for all water programmes, falling far short of the required amount.^{202,203,204}

Water wastage and lack of revenue collection are a serious concern, as close to half (47 percent) of municipal tap water is classified as non-revenue water (NRW), a figure significantly higher than the international average of 30 percent for non-revenue water.^{205,206} The highest levels of NRW are in Kwa-Zulu Natal (60.5 percent), the Free State (59.5 percent), and Limpopo (57.7 percent).²⁰⁷ The lowest NRW figure is in DA-led Western Cape (27.6 percent). The causes of this water wastage include leaking pipes, a failure to install water meters, illegal connections, and inadequate billing and revenue collection.

Figure 9: 2023 No Drop: Percentage NRW per WSA²⁰⁸



Water resources are now under significant distress, which could leave the water system vulnerable to droughts and increased temperatures caused by climate change.²⁰⁹ It is expected that demand for water will exceed supply by 17 percent in 2030.

Finally, South Africa's water supply is further threatened by invasive alien plants. Invasive alien plants use more water than indigenous species as they are typically larger and deeper rooted, while also possessing different physiologies which require greater water usage. These invasive species are estimated to reduce surface water resources by between 3 and 5 percent, and without remedial action taken, may threaten up to 30 percent of the water supply of major South African cities.^{211,212}

DA Policy Recommendations to Address the Challenges to Water Supply and Consumption

The DA will address the various challenges related to the supply of and access to water by:

- **Increasing the nation's water resilience by expanding the 'portfolio of water supply'.** A broader supply can be achieved by establishing multiple sources of water, such as surface water reservoirs, aquifers, desalination, wastewater reuse, rainwater harvesting and stormwater harvesting.²¹³ Therefore, when one supply of water becomes unavailable, other sources of water can be utilised. Models should be developed to determine the least cost or most convenient water supply at any given period, while considering consumer preferences for alternative water sources. For example, one study has indicated that storm and rainwater harvesting is the most acceptable alternative water source for consumers.²¹⁴

Where We Govern Kouga Municipality

At the height of the drought in 2022, the Kouga Municipality commissioned the construction of four water purification plants at existing water treatment centres across the municipality.²¹⁵ At maximum capacity, each plant can purify up to 15 megalitres of water a day, while Kouga's total water consumption in winter is 18 megalitres a day.²¹⁶ The plants are the first of their size for any municipality in South Africa and include a process of the water being oxidised to remove the high levels of iron and manganese found within the town's aquifers. This purified water is then sent to the water treatment plants, where it is treated with a chlorination process.

These water purification plants have enabled the Kouga Municipality to reduce its reliance on the national government's bulk water infrastructure. It is envisioned that the development and commissioning of these water purification plants will mitigate the effects of any future droughts.

City of Cape Town

The City of Cape Town has developed and implemented a New Water Programme, which seeks to diversify and expand Cape Town's water supply sources. The New Water Programme aims to add 300 million litres of water per day from new sources by 2030.²¹⁷ Some of the initiatives that form part of the New Water Programme include clearing of alien invasive plants, groundwater extraction through aquifers, water reuse, improved infrastructure maintenance and desalination over the longer term.

Some of the City's actions to improve water supply include:

- An alien invasive clearing programme which has already resulted in a gain of 44 million litres of water per day due to the removal of non-indigenous plants.
- The City plans to invest R4.7 billion into projects which bring approximately 105Ml per day of groundwater into its drinking supply by 2040.
- A plan to build the Faure Water Treatment Plant and Reservoir, which will augment and diversify the water supply by approximately 100 million litres per day.²¹⁸
- Ongoing proactive maintenance of existing water infrastructure, which includes upgrading existing water treatment facilities, expanding storage capabilities and implementing modern water distribution systems. To implement these maintenance programmes, the City has allocated R836.6 million towards the Water and Sewer Pipe Replacement Programme for the 2023/24 financial year.²¹⁹
- Establishing water reuse as 7 percent of the City's total bulk potable water supply by 2040.²²⁰

- **Prioritising water demand management and conservation measures in policies and planning at national, provincial and local levels.** Due to rising population levels and recent droughts in South Africa, it has become necessary to conserve water more effectively and to change consumer behaviour. Water conservation and water demand management are essential tools for meeting the country's future water needs by lowering demand pressures. New developments and infrastructure cannot be constructed to meet the increasing demand for water unless adequate measures are taken to conserve water and manage demand.²²¹
- **Reducing water demand through a combination of infrastructure improvements** that include rehabilitating and replacing ageing pipes, valves and pumps, implementing advanced leak detection technologies such as acoustic sensors and remote sensing.²²² When rehabilitating and replacing pipes, the DA will use a variety of cost-effective methods, including trenchless methods such as cure-in-pipe replacement, where a liner is placed inside a pipe, thereby preserving the flow rate of the original pipe, and pipe bursting, where new pipes are pushed inside of old pipes, thereby replacing pipes that are too damaged to be repaired while removing the need for costly excavations.²²³
- **Reducing non-revenue water**, which is water that does not pass through a meter because it has been stolen or is leaking from pipelines and reservoirs,²²⁴ by introducing incentives to install water-efficient appliances, effective water pressure management, and the introduction of tiered water pricing structures where pricing increases alongside higher consumption.^{225,vii} Where applicable, water rationing and water cuts must also be considered for residents who break water restriction rules.²²⁶



vii Tiered water pricing structures charge an escalating rate based on tiers of water consumption. This pricing structure provides a strong financial incentive for customers to conserve water, as this leads to a lower monthly water bill.

Where We Govern

City of Cape Town

The City of Cape Town demonstrated good water management practices during the water crisis in 2017-2018, by implementing strict water restrictions, increasing water tariffs for high usage households, rolling out widespread education campaigns, and utilising pressure management practices.^{227,228} During the water crisis, dam levels dropped to 11 percent of their capacity, and the City faced a real possibility of becoming the first city to run out of water in the world.²²⁹

By implementing heavy water restrictions, the City reduced its daily water consumption by more than 50 percent, saving approximately 500 million litres of water daily.²³⁰ As a result of these substantial water savings, combined with the good rains in June 2018, the dam levels gradually began to rise again by September 2018, reaching 70 percent of their capacity.

- **Providing accessible methods to report water leakages** and ensuring an efficient and effective government response to limit leaks and wastage of water once reports are received.
- **Enhancing the uptake of water-efficient technologies and practices.** The role of technology and innovation is critical in the areas of scarcity and safety, utility operations, monitoring and treatment, and data and analytics. Remote sensing, for instance, can assist with water accounting and non-revenue water remediation.²³¹ Households should also be encouraged to adopt technologies such as water-efficient irrigation systems, rainfall shutoff devices that turn off the irrigation system during rainy weather, rain sensors, water-saving sprinkler heads, and micro-irrigation or drip irrigation.²³²
- **Changing household perceptions on water conservation and water saving through intensified educational campaigns.** A study has shown that water conservation campaigns can produce an average water consumption reduction of 7.6 percent and are cost-effective compared to other policy instruments and may be as effective as price increases in achieving water conservation.²³³ These campaigns should be tailored to specific demographics and regions, considering cultural sensitivities and local practices, to maximise their effectiveness.
- **Promoting public-private partnerships in seawater desalination projects.** Currently, desalination contributes only a small percentage (less than one per cent) of the total water consumed in South Africa. As the cost of desalination decreases, it will become an increasingly viable option for municipalities along coastlines.²³⁴ Until then, partnership with the private sector will be a viable option, as risks and rewards will be shared, and the arrangement (financing, construction, operation and maintenance) would be tailored to each project, considering factors such as size and cost.²³⁵ Incorporated into this will be fund tracking and auditing success, so that the public can see how the private company is performing. Despite its potential benefits, we are mindful that desalination might not be able to address water scarcity in South Africa's inland areas and will therefore have a limited impact on the biggest water consumer, the agricultural sector.²³⁶
- **Introducing formal legal protections for SWSA areas.** The current lack of formal protection for SWSA areas has resulted in them facing various threats such as biodiversity loss, degraded ecosystems, acid mine drainage and water use by large plantations.²³⁷ Recognition of the strategic importance of SWSAs must extend to the creation of legislation which will provide enforceable legal protection for aggrieved communities to protect these regions and their water resources.

- **Expanding the installation of modern water monitoring devices.** These devices will assist residents in tracking and lowering their water usage. Count Dropula, a water monitoring device, has been installed in various schools. The device has resulted in an average water savings of approximately 400 000 litres per school, per month.²³⁸ The device is connected to an app and sends a user an SMS when there is a sudden spike in water usage. The device can alert the user of a leak within minutes.²³⁹ Currently, water meter readings require a visit to the outside water meter and a comparison of the latest month's invoice to the previous months one.²⁴⁰
- **Controlling invasive alien plants.** Programs which clear invasive plants along rivers can result in stream flow increases of between 800 and 12 000 litres/ha a day in winter rainfall regions, and up to 34 000 litres/ha a day in the summer rainfall region.²⁴¹ A further modelling study of alien tree clearance in mountain catchments predicted that the benefits of clearing mature infestations of alien trees in catchment areas can increase streamflow by between 15.1 and 29.5 percent.²⁴² It has also been predicted that clearing the current levels of invasion in the catchments above the Berg River Dam could increase streamflow by over 1 percent and result in approximately 4.1 million litres of additional water per day.²⁴³ Invasive plant control programs successfully combine environmental benefits with social development benefits through empowerment and skills training.²⁴⁴ Existing programmes such as the Working for Water programme, which has cleared one million hectares of invasive plants, and provided jobs and training to 20 000 people since 1995²⁴⁵, will be supported and expanded.

Where We Govern

City of Cape Town

The clearing of non-indigenous, high-water-consuming plants is a key component of the City of Cape Town's Water Strategy and the long-term New Water Programme, which aims to add 55 billion litres per year to the water network by 2026.

In 2021, the City committed R50 million to the Greater Cape Town Water Fund to combat alien invasive plants. The collected efforts of the Fund have resulted in 16.1 billion litres of water being replenished and 30 972 initial hectares and 18 740 follow-up hectares of land being cleared of alien plant species. In addition, 787 green jobs and 151 specialised technician jobs have been created.

A further R25 million has been committed to clearing invasive alien plants in four catchment areas for the 2023/24 fiscal year. This will ensure that increased water supplies will reach the City's dams, bolstering the City's water resilience into the future.

- **Implementing the widespread harvesting of rainwater off roofs and out of stormwater drains and into storage tanks and retention/detention ponds²⁴⁸ for domestic use purposes.²⁴⁹** Rainwater and stormwater are not currently recognised as a valuable natural resource which can enhance our nation's water resilience, as it primarily flows into stormwater drains where no harvesting takes place. This form of water is therefore an almost entirely untapped source of water. Harvested and stored correctly, this water can be economically used for cleaning, irrigation and flushing purposes, thereby optimising the usage of rainwater and stormwater. A 2015 study established the effectiveness of stormwater harvesting in reducing potable water demand in the Liesbeek River Catchment area. The study found that stormwater harvesting had the potential to reduce potable water demand in the area by 20 percent if residents widely adopted it for uses such as flushing toilets and outdoor irrigation.²⁵⁰

- **Reducing Agricultural water consumption levels.** The high levels of agricultural water consumption make reductions in this form of water consumption a low-hanging fruit for reducing water demand levels. This can be achieved by investigating the utilisation of sustainable intensification.^{251,viii} The utilisation of smart irrigation scheduling will also be encouraged to assist farmers in scheduling watering when it is necessary. This can be achieved by allowing farmers to monitor plant and soil moisture, as well as taking into account rainfall forecasts.²⁵² Finally, the utilisation of drip irrigation systems must be encouraged over conventional spray watering systems, which waste significant amounts of water due to evaporation losses.^{253,254}
- **Reducing water utilisation at power stations.** Water cooling systems play a significant role in South Africa's coal-fired power stations. Recovering this water is important as it is expensive to produce. A substantial amount of water is lost due to evaporation when water is used for cooling.²⁵⁵ The DA will actively promote the use of indirect and direct dry cooling systems at coal power stations to reduce water losses. Dry cooling systems use air instead of water to lower the temperature of turbine exhaust steam. These systems consume between one-tenth and one-twentieth of the water that wet cooling systems use.²⁵⁶ However, these dry cooling systems are more expensive to build and consume greater amounts of electricity to operate their fan systems. This makes a move to renewable energy sources the best solution to reducing water usage within power generation, as they require little water to operate, outside of periodic washing of turbine blades or panels.²⁵⁷

Poor Water Quality Levels

The country's tap water safety is in decline. Both the Green Drop^{ix} and Blue Drop^x reports confirmed these alarming trends. Reports highlighted that the state of our water quality, including management processes in many rural districts and some larger towns and cities, is in severe decline.

All water supply systems are classified into one of four categories based on their Blue Drop Risk Rating (BDRR) (focusing on treatment capacity, water quality, technical skills and Water Safety Planning). The higher the BDRR percentage deviation value, the closer the risk is to its maximum value.

Figure 10: Blue Drop Risk Ratio Parameters

Low	Medium	High	Critical
<50%	50%<70%	70%-<90%	90%-100%

Source: DWS, 2022

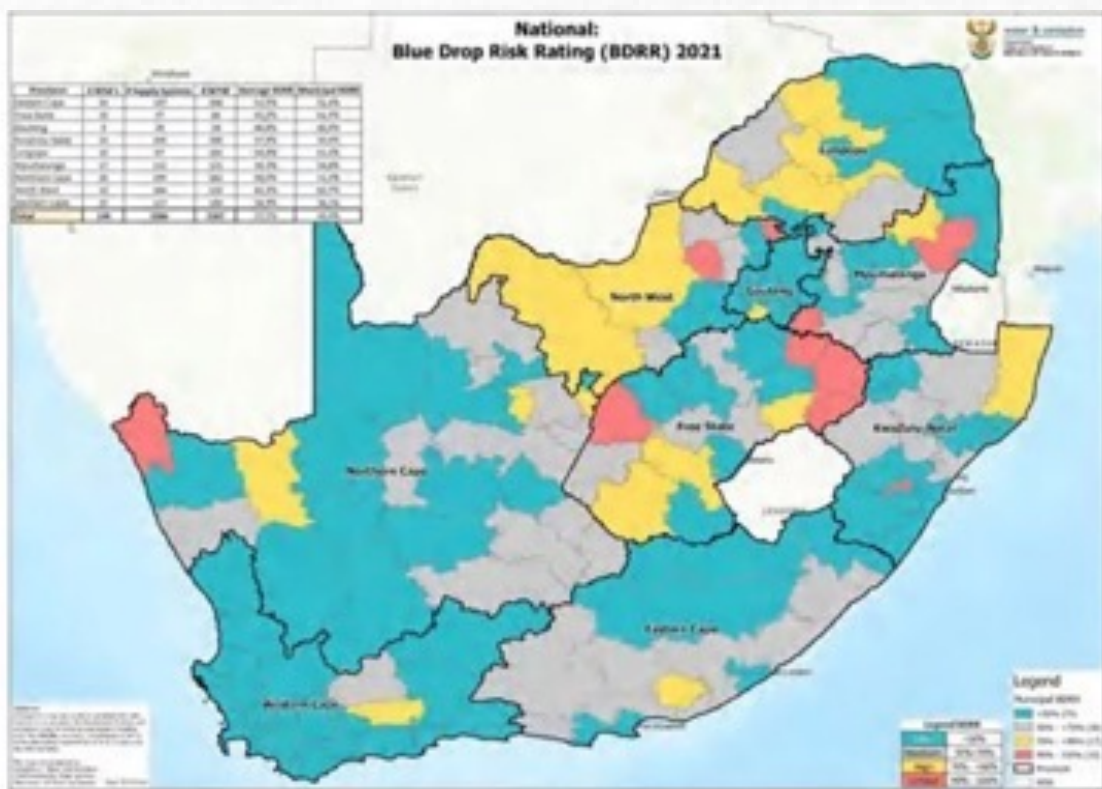
The Blue Drop Progress Report illustrates that, while tap water in most major cities appears to be safe to drink, there has been a decline in the overall tap water safety checks compared to previous assessments.²⁵⁸

viii Sustainable intensification is a process which uses innovations that increase productivity on existing agricultural land with positive social and environmental impacts.

ix The Green Drop Assessment focuses on the performance of wastewater treatment works in South Africa.

x The Blue Drop Report is a comprehensive assessment of the state of all water supply systems in South Africa.

Figure 11: Blue Drop Risk Rating (BDRR) 2021



Source: DWS, 2021

* Blue areas indicate low risks, while red areas indicate critical risks.

The 2023 Blue Drop report is based on an audit conducted between 1 July 2021 and June 2022. Conducted by 26 audit panels, they consist of inspectors who are qualified after attending a Blue Drop short course and achieving the required minimum threshold examination score. The scorecard was designed to consider evidence against 5 Key Performance Areas: 1. Capacity Management; 2. Drinking Water Quality Risk Management; 3. Financial Management; 4. Technical Management; 5. Drinking Water Quality Compliance. Each KPA has different weights based on regulatory priorities²⁵⁹.

It was determined that more than half (60.2 percent) of South Africa's water supply systems were considered "low risk", while the other remaining systems failed or barely made it through the risk quality tests, with 9.9 percent classified as "critical risk", 10.2 percent as "high risk", and 19.2 percent as "medium risk".²⁶⁰

The Causes of Declining Water Quality

There are several causes of declining water quality, which negatively affect all South Africans. There are: 1) Waste from Human Activity; 2) Declining Water Treatment Works; 3) Ageing Infrastructure; 4) Acid Mine Drainage; and 5) Poor Governance.

1. Waste from Human Activity

The decline in water quality challenges in South Africa is primarily caused by human activity. Chemical waste from industries, metals introduced from mines, and untreated or poorly treated effluents from wastewater treatment works introducing excessive nutrients, phosphates, and coliforms are among the human-caused problems. In addition, pesticides, herbicides, and fertilisers are used in agriculture, introducing salts and other toxic substances into the water supply. These all pose significant threats to our water resources.

2. Declining Wastewater Treatment Works

Wastewater treatment is another issue concerning South Africa's water quality. Over 60 percent of South Africa's wastewater treatment works have been classified as "poor to critical", with 39 percent being in a critical state and 24 percent in a poor condition, with the cost of fixing these facilities estimated to be over R8.14 billion.²⁶¹ In addition, a survey of 88 municipalities found that more than two-thirds of wastewater treatment facilities did not meet quality control standards.²⁶² This translates to wastewater treatment works not properly treating sewage before it gets discharged into rivers. This poor-quality effluent increases the cost of bringing water sources to a quality level which is safe for drinking purposes.

The failure to effectively treat wastewater could have adverse consequences for people and the environment, as the presence of high levels of contaminants in rivers and streams poses a health risk to populations that may consume surface water. Further negative consequences of poor-quality wastewater treatment can be seen at Hartbeespoort Dam. This dam is in a hypertrophic state due to declining upstream water quality, whereby aquatic weeds have multiplied partly because of nutrient supply from urban effluent.

Invasive Hyacinth Hartbeespoort Dam²⁶³



3. Ageing Infrastructure

Ageing infrastructure, insufficient maintenance, and a lack of human capacity and financial resources have contributed towards poor quality wastewater treatment. This has a direct impact on the economy and livelihoods of South Africans, as seen in 2022, when declining quality of water infrastructure and wastewater treatment works in Ethekeeni contributed towards the closure of beaches during the holiday season, due to critical levels of E. Coli bacteria being found in the water.²⁶⁴

A lack of technical and management capacity at water plants has contributed to the poor condition of water plants. Even if a water facility is built with the latest technology, the necessary technical and management skills are required to operate these facilities effectively. The latest Blue Drop report showed that water supply systems across South Africa require an additional 400 qualified individuals (203 technical staff and 197 scientists). In addition, 67 percent of water treatment works staff had no training during the audited period.²⁶⁵ There is therefore a need for greater hiring of qualified staff and continuous training programs within South Africa's water facilities.

4. The Harmful Effects of Acid Mine Drainage on Water Quality

Another threat to water quality and security is acid mine drainage (AMD), which results from the discharge of acidic water after mines have closed and tailing dams have been decommissioned. AMD is a major environmental problem in South Africa because it is costly to address and persists long after mines close.²⁶⁶ For example, the coal and gold mining activities in Gauteng and Mpumalanga have led to significant water quality issues in those provinces.

AMD affects both surface and groundwater in the areas where it occurs. In AMD, high salinity²⁶⁷ levels are associated with high concentrations of sulphate, iron, aluminium, and manganese, as well as toxic heavy metals (cobalt, copper, zinc, radionuclides, etc.).²⁶⁸ Several potential health effects can also be associated with AMD, including skin irritation, renal diseases, neurological diseases, and cancer. In addition, heavy metals contained within AMD can accumulate in animal and plant tissue as they move up the food chain, causing further damage.²⁶⁹

5. Poor Governance

Poor governance has resulted in a number of critical wastewater management and maintenance issues, which result in extensive water losses and a lack of investment.²⁷⁰ The Poor governance of water facilities was highlighted by the Department of Water and Sanitation issuing non-compliance notices to 90 municipalities, instructing them to correct shortcomings identified in the 2023/2024 Green Drop Report. By March 2023, only 34 out of 168 plans submitted to the Department were being implemented, and 43 municipalities declared that they could not develop corrective action plans themselves.²⁷¹

South Africa's fragmented water governance departments, combined with a culture of non-accountability and limited consequences for non-performance, have resulted in dramatic differences in municipalities' performance in maintaining water infrastructure. Reasons for this include differing financial resources, a lack of skills in rural areas, and the mismanagement of funds.²⁷² This decline in municipal capacity is evident in the increase in critical condition wastewater treatment systems from 248 to 334 between 2013 and 2022.²⁷³

Water infrastructure in South Africa varies across the country due to different managing institutions. South Africa currently has seven Water Boards,^{xi,274} which are responsible for the provision of bulk water and related infrastructure, some retail infrastructure and wastewater systems.²⁷⁵ In addition, South Africa's municipalities are both water service authorities and providers, although the physical provision of water supply and sanitation services can be contracted out to third parties such as non-governmental organisations, community-based organisations or a private sector company.²⁷⁶ As the size, technical capacity and performance of these entities vary across the country, the means and effectiveness of their respective water service delivery will differ. This was demonstrated in a study which found that only three water boards were technically efficient, while six of the smaller water boards exhibited high levels of inefficiency, equivalent to wastage of expenditure at R3.7 billion.²⁷⁷

xi As of 2023 there are seven water boards. Prior to this reconfiguration there were nine water boards.

Furthermore, an audit conducted by the Auditor General into South Africa's water boards found that only six complied with the minimum requirements for safe drinking water, and the remaining three were only compliant with certain specifications. The audit further found that ageing and improperly maintained infrastructure was the primary cause of water losses of approximately 74.6 million kilolitres, and a loss of R794 million in lost revenue in 2020/21.^{278,279}

There is also a lack of experienced operators and maintenance teams, which leads to infrastructure systems not operating as designed and deteriorating more rapidly than expected, resulting in increased water leakages from the pipe network. As most of this infrastructure is underground, failures are typically not visible until a catastrophic event, such as the burst of a major pipe or the failure of a pump.

Many of South Africa's wastewater treatment works are also poorly managed and overextended, which results in major sewer spills into the river systems. This is supported by the Green Drop Progress Assessment Report, which indicates that 64 percent of wastewater treatment works are at high or critical risk of discharging partially treated or untreated water into rivers and the environment.²⁸⁰ Urban development and rapid urbanisation also put a strain on existing infrastructures and systems. Ideally, engineering professionals should be employed in the public sector, particularly in decision-making capacities, to implement proper asset management, operation, and maintenance of water infrastructures.

DA Policy Recommendations to Improve Water Quality

The DA will ensure water is of a high-quality standard by:

- **Including water and hydraulics engineers in decision-making and increasing skill levels within waterworks facilities.** We must establish an organisational culture that places engineers at the centre of decision-making to manage water effectively. These engineers must be of the highest calibre to provide the highest quality water and sewage management for an area's residents. They should lead administrations in making key decisions.²⁸¹ Greater hiring of qualified individuals within water facilities must be prioritised, vacancies must be filled, and regular training programmes must be implemented for new and existing staff.
- **Improving long-term planning of maintenance and expansion of water supply facilities.** A long-term plan aimed at improving or maintaining high-quality water standards needs to be developed by engineers in conjunction with municipal managers. The plans, such as the construction of new wastewater treatment facilities, should be robust enough to last several years and withstand changes in administration.²⁸² South Africa must develop a technocratic culture for managing its water resources.
- **Implementing stricter consequences for non-performance.** The right engineers are only one component of the solution; municipal officials must be held accountable for non-performance through fines or even criminal charges when neglect of water infrastructure is established.²⁸³
- **Making reporting of water quality management more readily and publicly accessible.** A well-established annual review of municipal water management practices is conducted as part of the Green and Blue Drop assessments. However, these reports have not always been regularly released,²⁸⁴ and the information in them can be complex to understand. These reports must be published at regular intervals and in an accessible format for the public.²⁸⁵

- **Adopting an Effect-Based Method (EBM) for water quality testing:** EBM captures the impacts of the various chemicals present in water in tandem.²⁸⁶
 - EBMs help us find out if different mixtures of chemicals in water can harm aquatic animals and people's health.
 - They ensure we do not miss any harmful chemicals or their byproducts when testing the water.
 - EBMs can identify areas with a lot of contamination, so we know where to look in the future.
 - They help us determine what is causing the risks and prioritise them so we can manage them better.
 - EBMs also show us how much of the environmental condition is affected by chemical pollution.
- **Improving the quality and amount of wastewater that is treated and reused.** The improvement of wastewater treatment will require significant investments in infrastructure. The DA will seek to modernise outdated filtration methods by implementing newer energy-efficient and ecologically sensitive methods. One example of this is the R1.9 billion upgrade at the City of Cape Town's Zandvliet Wastewater Treatment Works, where a new membrane biological reactor was recently completed.²⁸⁷ This facility upgrade expanded the capacity of the facility's wastewater treatment by 18 million litres a day, while simultaneously improving the quality of effluent released at the facility.
- **Utilising bioremediation^{xii}** of water, as it does not require power, is economical, and can increase the capacity of water treatment in excess of 30 percent. It is also a more natural process of cleaning and purifying water without byproducts like sludge. Bioremediation can render water neutral with sufficient oxygen that it can support aquatic life at the receiving end. Wastewater can also be treated to different standards, and depending on the level of treatment, it can be reused for a variety of non-potable uses. This will effectively commodify water that currently has no economic value.
- **Addressing acid mine drainage (AMD), which affects both surface and groundwater in the areas where it occurs.** This will be achieved by reclamation of contaminated land by adding lime or other alkaline materials to neutralise acidity, relocating contaminated material to new sites away from fresh water sources where it can be monitored and treated, filling in abandoned mines with materials which prevent further AMD, diverting water from a mine site to prevent it from running through AMD forming materials, and disposing of mine waste underwater to prevent exposure to oxygen.²⁸⁸ The prevention of AMD generation will also be prioritised by protecting sulphide minerals from air and water. This can be achieved through the usage of dry covers, water covers, oxygen-consuming covers and subaqueous tailing disposal, which can be used as oxygen barriers to prevent AMD generation.²⁸⁹



xii The utilisation of microorganisms to remove contaminants, pollutants and toxins from water.

The Deteriorating Water Infrastructure in South Africa

Our ageing and leaking water infrastructure is causing over a third of the country's water supply to be lost before it can be used.²⁹⁰ Approximately 25 percent of the total water consumption is lost to leakages,²⁹¹ while roughly 40 percent of municipal water supplies nationwide are now classified as “non-revenue water”.^{292,293} This can be attributed to outdated and poorly maintained water infrastructure.²⁹⁴ In addressing water scarcity, the challenges with water infrastructure need to be addressed.²⁹⁵

Water infrastructure has consistently performed poorly due to 1) Insufficient asset management and performance; 2) Underinvestment and financial mismanagement; and 3) Theft and vandalism of water infrastructure.

1. Insufficient asset management and performance

Due to underfunding and under-prioritisation, water infrastructure maintenance and refurbishment have been neglected throughout the country, as evidenced by service delivery failure. South Africa's water infrastructure is also ageing, with significant parts of the infrastructure being over two decades old and in a state of decay.²⁹⁶ The deteriorating condition of infrastructure is resulting in high volumes of water losses caused by pipe bursts and leaks, which result in substantial revenue losses for municipalities. In Gauteng, the percentage of NRW caused by leaks and burst pipes is approximately 20 percent.²⁹⁷

Many municipalities, particularly smaller and rural municipalities, do not manage their assets strategically, compounding the problem of inadequate infrastructure. In many cases, they do not know what assets they possess, where they are located, how old these assets are and what investments are necessary to prolong their lifespan. Without these details, it is almost impossible to determine the level of investment that is necessary. Asset registration is also a costly undertaking, with many municipalities outsourcing this function due to a lack of in-house capacity.²⁹⁸

2. Underinvestment and financial mismanagement

Service delivery of water and sanitation has been slow, and in some cases, it has deteriorated due to under-investment in infrastructure maintenance and delays in renewing outdated infrastructure. Since 1996, the country has made significant progress in expanding water services, particularly in rural and disadvantaged communities. Nevertheless, inequalities in access to basic services continue to exist. This can be attributed to a limited budget, inefficient revenue management by local municipalities, and the misappropriation of funds. Therefore, South Africa is faced with the stark reality that one-third of its water infrastructure is not fully operational.²⁹⁹

Municipalities generally allocate between 5 and 12 percent of their annual operating budgets to repair and maintain water and sanitation infrastructures.³⁰⁰ Still, some municipalities have reported massive overspending to the National Treasury with little results to show for it. One of these projects is the Giyani water supply project in Limpopo. The project was conceived in 2014³⁰¹ to provide clean water to the surrounding villages by 2019. However, with delays, investigations into corruption, and the cancellation of contracts, the project has not been completed as of 2023.³⁰²

There is a need for significant infrastructure spending to improve the state of our nation's water infrastructure. Johannesburg Water has estimated that R88 billion is required for the replacement of infrastructure, with a total renewal backlog of R20.4 billion.³⁰³ This is significantly greater than Johannesburg's 2022/23 budget allocation for capital expenditure on water supply and sewer infrastructure of R930 million.^{304,305} On a national scale, R90 billion per year is required to repair and upgrade existing water infrastructure, yet between 2018 and 2022, expenditure averaged only R16.93 billion.^{306,307,308,309,310} Therefore, there is a clear need for increased expenditure on water infrastructure.

Finally, private investment in water infrastructure remains limited, with the bulk of expenditure costs being borne by the government. Where the private sector has been involved in the water sector, it has primarily financed large infrastructure programmes with government guarantees. The primary challenges to increasing private sector funding in water infrastructure projects include the following³¹¹:

- A lack of clarity in the regulatory framework for the financing of municipal water services infrastructure.
- The precarious financial performance of many local municipalities discourages private sector fundraising for local infrastructure programmes.
- A high focus on private sector involvement within new water-related infrastructure, rather than the provision of funding for maintenance and operations.
- A lack of innovative funding mechanisms to unlock further investment opportunities.

3. Theft and vandalism of water infrastructure

Theft and vandalism of water and wastewater treatment works are reported throughout the country, leading to many of these facilities being dilapidated. It is common for criminals to target this infrastructure, especially during load-shedding periods and when they are shut down for repairs. As a result, pumps, copper cables, and even bricks and roofing are frequently stolen, and repairs can cost millions. Examples of these costs include Themba wastewater treatment works incurring damage worth about R400 000 due to cable theft and vandalism in a single week,³¹³ and the losses incurred by the City of Cape Town in damage to water and sewerage infrastructure at a cost of R41 million in 2021/22.³¹⁴ The often-lengthy process of implementing repairs results in communities being without water for an extended period.³¹⁵

DA Policy Recommendations for Improving Water Infrastructure

Well-maintained water infrastructure is essential to reducing water losses and ensuring safe, clean water reaches the public. The DA will improve and protect these infrastructure networks by:

- **Ringfencing budget allocations towards water infrastructure maintenance and renewal.** Revenue from water will be used only for infrastructure investment in water and sanitation – bills paid on water will not go into a general municipal fund. In many municipalities, the main obstacle to improved service delivery is not only technical failure, but a shortage of dedicated funds to replace broken infrastructure or expand supply.
- **Ensuring implementation of a comprehensive infrastructure plan.** Stages of the plan will include³¹⁶:
 - Data collection and analysis: Identifying the current state of water infrastructure.
 - Performance modelling: This would include forecasting infrastructure deterioration, demand, and technology necessities. This step will assess the current output of water infrastructure versus the current or future needs.
 - Alternative scenarios: The plan should consider alternative scenarios for supply generation.
- **Improving asset management expertise in municipalities.**³¹⁷ DA-led governments will recruit skilled engineers and competent personnel within municipalities to improve asset management expertise. In addition, regular workshops will be conducted and booklets disseminated on asset management and newly developed asset management software.³¹⁸
- **Implementing cost-reduction strategies**, which could be redirected towards infrastructure maintenance and upgrading. In a community in the United States, Hidden Valley Lake saved \$70 000 per year in energy costs by pumping water during off-peak times when energy rates were lower, saving on operational costs, which could be redirected towards infrastructure improvements.³¹⁹

- **Safeguarding water infrastructure through increased surveillance.** Increased surveillance equipment (e.g. CCTV) should be utilised to continuously monitor water systems, to protect against theft and vandalism. Surveillance should be monitored on-screen by staff situated at a central control centre to ensure immediate action in case of any suspicious activities.
- **Contracting experts temporarily through public-private partnerships.** The need for skilled technical expertise is essential for ensuring that infrastructure meets or exceeds its expected useful life. However, employing this expertise could be costly to government budgets, especially local governments. This is of particular concern given the fiscal constraints South Africa's budget currently faces. Therefore, one way to attract these skills in the short term is to establish public-private partnerships through the temporary contracting of experts. This is relevant to areas where these skills are lacking.³²⁰ Incorporated into this will be fund tracking and auditing success, so that the public can see how the private company is performing. This will allow experts to contribute to key infrastructure planning and decision-making - and can be used for transferring additional technical skills and knowledge to government officials.
- **Allowing private water authorities to manage client relations and metering management** when these authorities are better resourced and equipped to do so.
- **Increasing private sector investment in water infrastructure by:**
 - Reviewing and amending legislative and regulatory mechanisms governing municipal financial systems to allow local authorities to expedite market-based mechanisms for financing of water infrastructure.³²¹
 - Improving relations between municipalities and private sector financiers, to develop clear understandings of priority funding areas, and to gauge interest in what types of infrastructure projects elicit funding interest.
 - Improving the capacity and financial stability of municipalities to improve their ability to secure private funding for water infrastructure projects.

Where We Govern

City of Cape Town

In 2023, the City of Cape Town announced an allocation of R10.9 billion towards infrastructure.^{322,323} This is the largest allocation towards infrastructure of any metro. This funding will service upgrades to water and sanitation systems, including bulk sewer upgrades, multibillion-rand upgrades to wastewater treatment works, new informal settlement water connections, pipe replacements and pump station upgrades.

Communities such as the Cape Flats and Phillippi, which will see a 226 percentage increase in water and sanitation spending over the next three years.³²⁴ While making these investments, the City has still managed to table the second-lowest water tariff increase of all metros in the country, and 40 percent of Cape Town households receive water and sanitation services without charge.³²⁵







Objective 3: Establishing Effective Waste Management and Recycling Systems



The DA believes that all South Africans should live in a clean environment where waste is responsibly managed and does not threaten environmental and human health. The DA will work to establish effective, well-managed, financially sustainable and safe waste management systems, which will improve societal health outcomes and expand economic opportunities. The DA's vision of an effective and safe waste management system includes the establishment of a circular economy, widespread recycling practices, responsible management of hazardous and mining waste, reduced littering, and landfill usage only as a disposal method of last resort.

Establishing a circular economy is central to the DA's position on waste management. A circular economy aims to extend a product's life cycle by repairing, sharing, leasing, reusing, refurbishing, and recycling materials.³²⁶ A circular economy will ensure that waste is minimised and our society's finite resources are managed sustainably. This approach will be implemented to work towards the long-term goal of a zero-waste-to-landfill society.

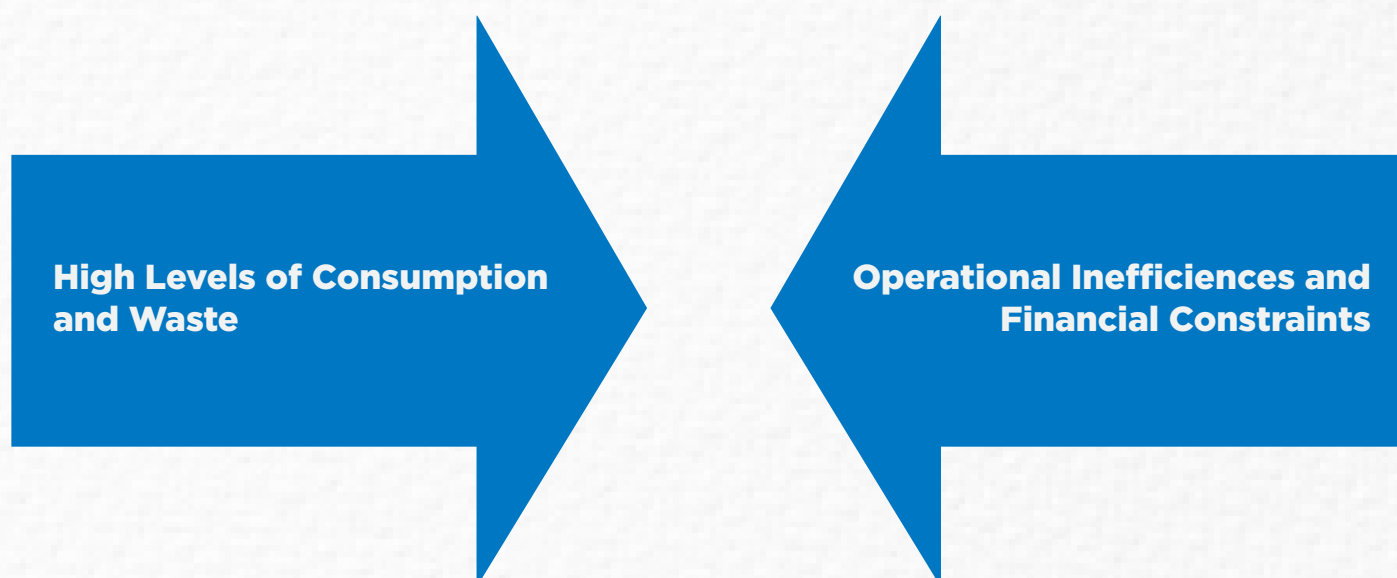
Inadequate and Deteriorating Municipal Waste Management Systems

Waste generation in South Africa is extremely high. South Africans generate approximately 122 million tonnes of domestic waste per year and an average of 41 kg of plastic waste per citizen,³²⁷ a figure significantly above the global average of 29 kg per citizen.^{328,329} This significantly burdens South Africa's waste management systems, necessitating innovative new solutions to address this pressing issue.

In South Africa, waste management has become a major environmental concern due to inadequate waste services, which have resulted in unpleasant living conditions and a polluted environment. As of 2022, only 59.9 percent of households benefitted from weekly household waste collection, a figure which has been steadily declining from 65.4 percent in 2016.³³⁰ Unfortunately, the decline in household waste collection services since 2016 illustrates a deterioration of municipal waste services management. Considering the country's high levels of waste production, existing waste services are increasingly unable to meet demand.

As per Schedule 5B of the Constitution, municipalities are responsible for refuse removal, refuse dumps, and solid waste disposal.³³¹ Since waste management is a visible urban service, its effectiveness and sustainability are indicators of sound municipal management, successful urban reforms, and good local governance.³³²

The challenges that negatively impact a municipality's ability to deliver quality waste management services can be divided into two categories: 1) High levels of consumption and waste creation and 2) Operational inefficiencies and financial constraints.



1. High Levels of Consumption and Waste Creation

Population growth, urbanisation, economic growth, globalisation, and higher consumption levels have increased waste generation.³³³ Due to high levels of waste creation, there is an increased reliance on waste disposal in landfills, which is an unsustainable method of waste management. As of 2011, approximately 90 percent of the waste generated in South Africa is disposed of in landfills or dumped illegally, with only 10 percent of waste being recycled.^{334,335,336} As a result of the failure to utilise waste as a resource through reuse, recycling, and recovery, many large municipalities are running out of landfill space, with few or no alternatives available.³³⁷

Single-use plastics are a significant contributor to unnecessary waste creation.^{xiii} It has been estimated that approximately 50 percent of plastic waste is generated from packaging.³³⁸ A poll conducted in 2024 by IPSOS, found that 88 percent of surveyed South Africans believed it was important to ban unnecessary single-use plastic products.³³⁹

Despite the significant impacts of single-use plastics on the environment, the South African government has made few attempts to address their effects since introducing Plastic Bag Regulations in 2003.³⁴⁰ These regulations did not outright ban plastic bags but instead set a minimum thickness level and imposed a levy on retailers per bag sold. **Research has shown that while these regulations initially reduced the utilisation of plastic bags, consumers become increasingly habituated to paying for them,** leading to a rebound in utilisation over time.^{341,342} This has been demonstrated by the revenues collected from the plastic bag levy having increased from R86 million in 2007/8 to R232 million in 2016/17.³⁴³

Many South Africans have deeply entrenched attitudes and behaviour patterns, which can be characterised as a ‘throwaway’ culture which views disposal as easy. Consequently, this culture fails to acknowledge the value of waste and the importance of recycling and separation at source initiatives.³⁴⁴ There is often a lack of awareness on how and where to recycle and a belief that recycling is inconvenient.^{345,346}

Electronic waste (E-waste) significantly contributes to municipal solid waste. Approximately 360 000 tonnes of e-waste are disposed of annually, with only 12 percent being recycled.^{347,348} This constitutes between 5 to 8 percent of total disposed waste. E-waste poses environmental risks as it can contain toxic substances such as mercury, cadmium, lead, and polychlorinated biphenyls (PCBs). These substances are carcinogenic, teratogenic, and mutagenic.^{xiv} They can cause health risks by inhaling their fumes and contaminating food, water, and soil. Communities that are exposed to these compounds may be at increased risk of cancer, birth defects, and degradation of the DNA itself.^{349,350}

2. Operational Inefficiencies and Financial Constraints

Insufficient separation at source impedes recycling efforts, often due to a lack of access to adequate drop-off recycling facilities, a lack of knowledge on what is recyclable, and the perceived inconvenience of sorting recyclables into multiple bins.³⁵¹ A lack of curb-side collection and inconvenient facilities are also significant causes of low recycling levels among South Africans.³⁵² However, the viability of curb-side collection of recyclables is heavily dependent on economies of scale to justify the costs associated with collection.³⁵³ A lack of separation at source and recycling behaviour among households is evident by the fact that 70 percent of plastics that are recycled are recovered from post-consumer sources such as landfills.³⁵⁴ This landfill material is typically of poor quality and can be contaminated, which increases the cost to recycle it.³⁵⁵

xiii Single-use plastics include grocery bags, food packaging, straws, containers, cups and cutlery.

xiv Causes cancer, birth defects in fetuses, and genetic mutations, respectively.

Waste management suffers from widespread under-pricing, which results in additional financial strain for municipalities.³⁵⁶ While the cost of waste removal services can vary significantly between municipalities, it remains a significant financial obligation for municipal service delivery. The provision of waste services is highly capital-intensive, and the cost of collection vehicles, maintenance and fuel can place significant financial burdens on a municipality's budget.³⁵⁷ The Department of Forestry, Fisheries, and Environment (DFFE) has provided tariff guidelines to assist municipalities in determining sustainable tariffs; however, in many municipalities, these suggested tariffs may prove to be unsustainable due to the high number of indigent households.³⁵⁸

Residents and businesses often fail to pay for municipal services, directly affecting a municipality's ability to provide services. By the end of 2023, aggregate municipal consumer debts amounted to R305.8 billion, an increase from R261.5 billion in 2022.³⁵⁹ This places additional financial strain on a municipality's ability to deliver effective waste services.

Free basic refuse removal services for indigent households become strained when unpaid bills compromise the income sources needed to absorb these costs. The National Policy for the Provision of Basic Refuse Removal Services to Indigent Households ensures that municipalities absorb the cost and provide free services to indigent households.³⁶⁰ These policies intend to facilitate the provision of at least basic refuse removal services and the issuance of a free bin for refuse storage at no cost.

The financing of this service is expected to come from two sources: 1) Internal sources, which include core municipal administration revenue and cross-subsidies from non-residential and wealthy consumers and 2) External sources, which include the Equitable Share Grant (ESG) and the Municipal Infrastructure Grant (MIG). While the Treasury provides financial assistance to implement this service,³⁶¹ municipalities are placed under an additional burden when they fail to collect rates from higher-income households adequately.

Service interruptions and waste collection backlogs are exacerbated by strike action. Residents of various municipalities across South Africa have experienced service interruptions and backlogs in waste collection services due to strike action. This can result in waste being illegally dumped when their refuse is not collected at scheduled intervals.³⁶² For example, in 2023, the rubbish piled up in parts of Mamelodi, east of Pretoria, where workers embarked on an unprotected strike over salary increases, which lasted over three months.^{363,364}

Waste collection vehicle breakdowns are a significant issue and are typically the result of vehicle age, poorly maintained roads, overloading, and inadequate maintenance schedules.³⁶⁵ The breakdown of waste collection fleets disrupts collection services, which is a key contributing factor towards illegal dumping.³⁶⁶ An unreliable waste collection service and a lack of waste collection infrastructure can increase illegal dumping. Research suggests that illegal dumping is caused by a lack of containers for shared waste collection, the limited capacity of 150l black bins for household purposes, infrequent waste collection, and backyard dwellers who share a bin with a homeowner.³⁶⁷ These factors can result in frustrated residents illegally dumping their waste, which becomes the municipality's responsibility to clean up.

Finally, many municipalities lack the necessary skills to perform their waste management functions effectively. Employees in waste management often lack the educational background or required experience. Civil engineering, in particular, is a noticeable gap, one that is required for waste management and landfill operation.³⁶⁸

DA Policy Recommendations for Enhancing Municipal Waste Services

The DA will address high levels of consumption and waste creation by:

- **Ensuring effective enforcement of legislation and regulations**, alongside fines, to establish ethical industry standards and practices concerning the collection, dismantling, recycling and, where necessary, disposal of e-waste products. This will include raising awareness and promoting extended producer responsibility (EPR) to ensure that manufacturers are responsible for the complete lifecycle of their products.^{369,370}
- **Updating and enforcing mandatory recycling targets for municipalities, businesses and households through legislation.** The existing targets set out in the National Waste Management Strategy, of 2020 set a target of 70 percent of paper, 60 percent of plastic, 90 percent of glass and metals, and 40 percent of fly-ash to be recycled by 2025.³⁷¹ The DA will update and enforce these targets for different types and percentages of waste which must be recycled and mandate that a percentage of all packaging products be reusable, recyclable or compostable by a predetermined date. These targets should also require businesses and municipalities to report on their progress towards achievement.

International Examples of Recycling Waste Targets

International examples of these targets include Australia's National Waste Policy Action Plan, which sets a target of 80 percent recycling or reusing the country's waste by 2030. Additionally, there is an industry-led target of making 100 percent of all packaging reusable, recyclable, or compostable by 2025.³⁷² The European Union has also set recycling targets, with 27 Member States being required to recycle or reuse 55 percent of municipal waste and 65 percent of packaging waste by 2025.³⁷³

- **Increasing public awareness about the importance of recycling and proper e-waste disposal.** This can be achieved through various types of education initiatives: public talks in town halls and schools, posters, radio segments, and being included in classroom curricula. The efficient operation of waste management services depends on effective communication between waste management organisations and citizens. More importantly, if citizens know what happens to waste sent for recycling and the benefits associated with this process, they are more likely to participate in waste sorting and recycling activities.³⁷⁴
- **Expediting, facilitating and expanding the process** of establishing municipal and private e-waste recycling and buy-back centres.³⁷⁵
- **Implementing a progressive and phased ban on using and selling single-use plastics, including plastic bags and plastic packaging within grocery stores.**³⁷⁶ These single-use plastics must be progressively replaced with biodegradable alternatives. The progressive phasing out of single-use plastics must be accompanied by strict enforcement of penalties for any stores or manufacturers which fail to comply with legislative requirements.
- **Increasing the number and accessibility of drop-off centres and public place recycling (PPR) facilities.** Easy access to clean public drop-off recycling centre facilities is essential for effective separation at source initiatives. In addition, PPR allows citizens to sort their waste into recyclable categories in areas where large numbers of persons gather or pass by, which facilitates 'recycling away from home' opportunities while raising awareness among the public about recycling.^{377,378}

- **Investigating the implementation of mandatory separation-at-source requirements and rolling out separation-at-source initiatives** to ensure that recyclable materials maintain their value and are diverted away from landfills and into the recycling economy. Increased awareness will aid in compliance. For example, awareness campaigns which provide information and educate households on available waste and recycling collection services and the importance of separating waste into recyclable categories at the source of waste generation will aid in consistent separation-at-source.³⁷⁹ The municipality of Kamikatsu in Japan has proven to be a pioneer in reducing waste and improving recycling levels. The town established a Zero-Waste Centre in 2020, which serves as a hub for residents to sort their waste into 13 types and 45 different categories. Residents also earn points for recycling which can be exchanged for a variety of vouchers.³⁸⁰ Kamikatsu's efforts to work towards a "zero-waste" strategy have resulted in the town achieving an impressive 81 percent recycling rate as of 2020, and a reduction in overall waste generated by 65 percent per person.³⁸¹
- **Increasing the establishment of swap shops in low-income and informal communities.** Individuals who bring recyclable materials to swap shops can receive remuneration in the form of clothes, toiletries, blankets and food. Mobile swap shops have proven effective, as they can travel to different communities at set times of the week. These swap shops can also serve as a platform for environmental education and serve as an effective mechanism for addressing socioeconomic challenges present in affected communities.³⁸²

The DA will address municipal operational inefficiencies and financial constraints by:

- **Ensuring that municipalities conduct full cost accounting, as municipal tariff services do not always include the full costs of service delivery.**³⁸³ This is necessary to ensure that municipalities do not under-price their waste services, as this fails to deter waste generators from minimising their waste levels and places a municipality's finances under severe strain.³⁸⁴ Municipalities should conduct a comprehensive cost accounting exercise, which will serve as the foundation for municipal financial sustainability by considering all operational and capital costs related to waste management services. This will assist in developing cost-reflective charges, enabling municipalities to maintain, renew, and expand their waste management infrastructure effectively.³⁸⁵
- **Exploring public-private partnerships (PPP) for waste and recycling collection services in line with existing legislative provisions.** Where financially feasible, the private sector could be utilised to reduce costs and improve efficiency in waste collection while freeing up municipalities from the responsibility of maintaining their own removal and disposal services.³⁸⁶ Well-structured contracts and private sector-assisted technological integration are likely to be the most effective mechanisms for incorporating private sector involvement in municipal waste management systems.³⁸⁷ Incorporated into this will be fund tracking and auditing success, so that the public can see how the private company is performing.

Cooperation with the private sector can provide financial tools and instruments to overcome waste management cost barriers. The private sector is also able to deliver better consumer-focused services than the public sector while often delivering greater efficiency and labour productivity through incentives and career advancement opportunities.³⁸⁸

Case Study – Public-Private Partnership Singapore

One example of a successful public-private partnership is between the Alba Group, a German Recycling company, and the Singapore government. Alba secured the contract to commence operations in Singapore in 2020 alongside a local waste management company to become the public waste collector in the Jurong sector. This was expanded in 2022 to include the Woodlands-Yishun sector, therefore totalling 2 out of 6 sectors in Singapore. Alba further became the sole Producer Responsibility Operator for E-Waste in Singapore in 2021.

The company established an nationwide recycling network and deployed over 600 e-bins found in busy public spaces. Within a year of this public-private partnership, Alba collected approximately 5 745 tonnes of consumer E-Waste, almost 5 times the amount collected by the previous government programme.³⁸⁹



- **Investigating the efficacy of dedicated service workshops or utilising private contractors to ensure routine fleet vehicle inspection, repair, and maintenance.** Keeping fleets running requires routine repairs and maintenance. Dedicated workshops can be established with qualified personnel specially trained in servicing waste vehicles. This will ensure that dedicated mechanics are immediately available when breakdowns occur, reducing the time vehicles are out of service.³⁹⁰ Where feasible, these workshops should operate 24 hours a day to attend to breakdowns and to ensure that minor repairs are performed without delay. The alternative is to contract out these services. We will investigate the cost and efficacy of both options and decide which is better based on those criteria (cost and efficacy).^{391,392} In addition, there should be at least one standby truck in case another truck malfunctions. This will allow services to continue when a breakdown occurs, which can be a regular occurrence due to the age of many municipal fleets and poor maintenance schedules.³⁹³ By doing so, waste services can continue uninterrupted, and interrelated problems, such as illegal dumping, can be minimised.

- **Investigating the leasing of waste vehicles as an alternative to ownership where a business case exists.** Leased vehicles are typically newer, which results in reduced downtime due to breakages. Lease agreements can also include a provision for regular maintenance, and the responsibility for ensuring the required number of vehicles are operational can be placed on the contracted service provider rather than the municipality.³⁹⁴
- **Implementing a double shift work policy when beneficial** to maximise the utilisation of leased waste collection trucks and reduce overtime payments when collection shifts may previously have extended into the evenings. A double shift system, therefore, optimises the utilisation of leased trucks and employs more workers at a stable fixed salary rate.³⁹⁵



Where We Govern City of Cape Town

For the 2023/24 financial year, the City of Cape Town's Waste Management Directorate has allocated a budget of R294.9 million for the purchase of a new waste management fleet. This will include 18 refuse compactors, and ten refuse trucks to remove illegally dumped litter.

This will revitalise an ageing fleet, leading to less maintenance downtime and improving service delivery for City of Cape Town residents.³⁹⁶

- **Launching a national clean-up campaign.** Clean-up campaigns are an effective way to demonstrate to communities the importance of waste management. This will promote community ownership for the cleanliness of their environment. All levels of government can partake in this initiative. Rwanda has developed a highly effective clean-up campaign called 'Umuganda Day'. Once a month, the nation shuts down for three hours and neighbourhoods clean up their environment together.³⁹⁷
- **Incorporating the required skills and expertise for various waste management functions** when drafting job descriptions and specifications for employee recruitment. Vacancies must also be filled in a timely manner and with appropriately skilled staff to ensure that staff shortages do not affect service delivery levels. Finally, municipalities must invest appropriate resources into attracting qualified graduates.

- **Implementing rewards schemes to improve waste collection performance.** These incentive schemes can include 100 percent work attendance rewards for individuals, and teams who finish waste collection rounds on time.³⁹⁸
- **Investigating how municipalities can implement the circular economy^{xv} in their waste planning and operational stages:** The circular economy is among the concepts that can assist in implementing the waste hierarchy and boost economic activities related to waste management. For example, municipalities can establish recycling programmes to collect recyclables and reintegrate them into the economic cycle. This can maximise the economic value of what has previously been considered waste while saving money and landfill space.
- **Investigating the promotion and implementation of mandatory deposit-refund schemes for certain forms of easily recyclable waste, such as beverage containers.** This entails the payment of an initial deposit when purchasing a product, which is refunded when the item is returned for recycling. A deposit refund scheme, therefore, serves as a financial incentive to collect and recycle used products – incentivising positive behaviour.^{399,400} This is already done with items like glass bottles, we will aim to expand this to other forms of waste. Deposit refund schemes will discourage littering, and are fair to consumers as the price increases can be offset by returning the product for a refund, and will be less regressive than taxes, as lower-income households are more likely to return their waste products.⁴⁰¹

A Lack of Effective Disposal of Hazardous Waste

The National Environmental Management: Waste Amendment Act defines hazardous waste as any waste containing organic or inorganic elements or compounds that, owing to their inherent physical, chemical, or toxicological characteristics, may have a detrimental impact on health and the environment.⁴⁰² Hazardous waste generation can occur in many different sectors, including households, agricultural production, mining, manufacturing processes, medical facilities, and research facilities.⁴⁰³

Hazardous waste includes mercury-containing waste, waste oils, sewage sludge, pesticides, solvent-based paints, pharmaceuticals and cleaning chemicals.^{404,405} These forms of waste can contain a wide variety of toxins, which, if released into the environment, have the potential to spread and contaminate air, water and land, and pose a serious threat to human health.⁴⁰⁶ As a result, hazardous waste must be handled carefully and according to strict hazardous waste regulations. Despite the strong environmental reasons and social obligation to manage hazardous waste systems, municipalities are currently not mandated to do so.⁴⁰⁷

In 2019, the government banned liquid and hazardous waste with a calorific value above 20 MJ/kg from being disposed of in standard landfills.⁴⁰⁸ Liquid waste and hazardous waste can only be processed by facilities that are certified to handle them.⁴⁰⁹ While there is now a greater emphasis placed on the effective management of landfills and the disposal of dangerous waste, more work is needed to resolve these issues.

xv A circular economy entails designing products for durability, reuse and recyclability. In addition, materials for new products should be sourced from old products, with disposal being a measure of last resort.

Key issues which currently exist in terms of hazardous waste management include the following:

1. Current regulations relating to Extended Producer Responsibility are limited

Current regulations relating to Extended Producer Responsibility are limited to waste streams of paper and packaging, lubricant oils, portable batteries, tyres, electrical and electronic equipment and lighting products.^{410,411,412,413} The DFFE introduced EPR via Regulations within the National Environmental Management: Waste Act and came into effect in 2021.⁴¹⁴ The EPR regulations provide the framework for the development, implementation, monitoring, and evaluation of EPR schemes, ensuring the effective and efficient management of identified end-of-life products and encouraging the implementation of circular economy initiatives.⁴¹⁵ However, other forms of hazardous waste are not currently subject to the existing EPR regulations.

2. Poorly Managed Industries

Poorly managed industries, as well as associated toxic dumps, produce and handle hazardous materials throughout South Africa. This can cause toxic pollution that can lead to health complications.⁴¹⁶ One study has found evidence associating exposure to hazardous waste with certain cancers, non-Hodgkin lymphoma, asthma, and several birth defects.⁴¹⁷

3. Improper disposal

Improper disposal of household hazardous waste is a major challenge.⁴¹⁸ Many households dispose of hazardous products such as CFL^{xvi} bulbs, electronic waste, batteries, paints, aerosols and solvents by either throwing them in the trash, burning them, pouring them down the drain, or dumping them at landfill sites, which can be detrimental to the environment.^{419,420}

DA Policy Recommendations for Effective Disposal of Hazardous Waste

The DA will ensure that hazardous waste is disposed of responsibly by:

- **Expanding EPR to more Hazardous Waste Products, as opposed to their current limited scope.** EPR is an environmental policy approach that extends a producer's responsibility for a product to the post-consumer stage of a product's life cycle and relies on the "polluter-pays" principle.⁴²¹ Producers of hazardous products must ensure that their used products are returned to collection sites for proper disposal to prevent their release into the environment.^{422,423,424}
- **Establishing widespread, dedicated household hazardous waste drop-off facilities.** There are too few compliant landfills and hazardous waste management facilities in South Africa.⁴²⁵ Therefore, it is essential to establish new facilities to receive, treat and recycle liquid and hazardous waste over the next few years. These facilities could be full-service, where all types of hazardous waste are received, and limited-service facilities, where only common and easily handled wastes such as batteries, CFL and e-waste are received.⁴²⁶ Full-service sites could be established near high-density residential areas, with more limited-service sites being placed in surrounding areas. These sites could also be complemented by mobile drop-off units for hazardous waste, which operate on a rotational basis.⁴²⁷ Well-located and visible waste drop-off facilities and targeted educational campaigns about these facilities will encourage individuals living near these sites to drop off their hazardous waste at these facilities rather than through unsafe disposal methods. Funding for these sites could come from reallocations of municipal budgets and levies imposed on producers of hazardous waste products.

xvi Compact fluorescent lamp

- **Developing awareness of the harmful effects of hazardous waste on health and the environment**, as well as how households may safely dispose of hazardous household waste in an environmentally sustainable manner. The success of waste management measures depends significantly on public awareness of waste management practices and subsequent behavioural change.⁴²⁸ Citizens must be aware of the health and environmental risks associated with hazardous waste and know how to dispose of these materials safely. Educational materials, brochures, radio ads, and social media campaigns can be distributed to achieve awareness. Greater awareness through education programmes is also likely to result in cost savings for municipalities. Due to improved disposal practices by households, waste collection and recycling may be more effective, and less hazardous waste is likely to end up in landfills or be illegally dumped.⁴²⁹

Case Study – Victoria, Australia **Detox your home**

A successful example of an awareness campaign is the “Detox Your Home” campaign in Victoria, Australia. Under this programme, Local Councils hold one drop-off event a year, supported by 40 pop-up events hosted around Victoria. The pop-up events serve to inform residents on how to dispose of hazardous waste safely, and to promote permanent drop-off stations available in the surrounding areas.⁴³⁰ Since 1994, the Programme has collected approximately 17 000 tonnes of hazardous waste, which upon drop off is sorted by chemists, and sealed in drums to be transported to specialised waste management facilities.⁴³¹ The campaign also distributes brochures, posters and newsletters, and utilises social media posts to raise awareness among households on how to dispose of hazardous waste.⁴³²

Poor Management and Disposal of Mining Waste

Non-compliant mining operations are causing significant damage to South Africa’s environment.

In mining communities, environmental degradation occurs when mining owners fail to comply with regulations designed to ensure that the environment is not harmed or degraded.⁴³³ The actions by mining companies have an adverse effect on the health and well-being of individuals and communities.

It is not uncommon for the impacts to be so severe that the entire town is abandoned, resulting in the creation of “ghost towns” after the departure of the mining company, which is often the legacy and image of the industry.⁴³⁴ One example is Blyvooruitzicht, where a gold mine abruptly ended its operations in 2013.⁴³⁵ The mine owners set aside inadequate funds for rehabilitation, and the town subsequently experienced severe environmental problems. This included sewage running in the streets, tailings impoundments, lack of access to water, and harmful mine tailings.^{436,437,438,439} These environmental challenges were coupled with significant socio-economic challenges such as high unemployment (approximately 75 percent), rising poverty, and inequality. The area has subsequently experienced an almost 50 percent decline in population between 2001 and 2011.⁴⁴⁰

Moving the community to another location will only reduce the impact if it is sufficiently far from the mining site, particularly if it is still close to the mining site. For example, Tharisa Minerals relocated the Mmadithlokwa village in Marikana just a few kilometres from the mining operations, which did little to improve their health.⁴⁴¹ The mining companies required proof that mining activities caused the dilapidation of the houses, but those who resided there could only demonstrate their cracked houses, which were insufficient for the company to relocate them. Standard environmental guidelines must be enforced to protect the health of communities.

Some of the key environmental problems caused by mining, which must be addressed, include 1) water pollution and 2) a lack of effective rehabilitation and remediation processes upon mine closure:

1. Water pollution from mine waste facilities, called tailing facilities, is a significant source of waste pollution, particularly water pollution.⁴⁴²

For example, the Witwatersrand gold fields contain more than 120 mines, which have left over 270 tailings facilities which extend over approximately 400 square kilometres.⁴⁴³ These tailings cause air, water and soil pollution, which harms the health of surrounding communities.⁴⁴⁴

2. A lack of effective rehabilitation and remediation processes

The National Environmental Management Act (NEMA) is inadequate to deal with the enforcement of rehabilitation and closure of mines as a result of mining operations closing due to a lack of funding. This leaves the mine abandoned without the required funds to implement rehabilitation and remediation processes at the mine. While NEMA and the Financial Provisions Regulations have made it obligatory for mining companies to set aside security for mine rehabilitation, before the commencement of mining operations, there has been a history of poor compliance with these laws and a failure to collect the required funds from these mining companies for mine closure rehabilitation.^{445,446}

This was confirmed in a report by the South African Human Rights Commission, which found that the Department of Mineral Resources (DMR) had ‘not taken adequate steps to secure financial provision for rehabilitating damage to the environment and water resources’ and that the government was partly responsible for the harm caused to communities by mining due to “non-compliance, the failure to monitor compliance, poor enforcement, and a severe lack of coordination amongst government stakeholders.”^{447,448}

DA Policy Recommendations to Reduce Harmful Mining Waste

The DA will address the environmental harms of mining waste and ensure effective rehabilitation and remediation processes are followed upon mine closure by:

- **Ensuring that existing mines that are to be closed are properly rehabilitated and remediated** and funding for rehabilitation and remediation processes is secured before mine closure is permitted. Mine rehabilitation is a process that restores land damaged by mining operations to an economically usable state, while mine remediation focuses on the cleanup and decontamination of mining sites.⁴⁴⁹ The purpose of rehabilitation and remediation is to mitigate the harmful impacts of mining and ensure that mined land is restored to a state comparable to or better than what it was before mining began. This will allow for the land to be used for post-mining purposes, which could generate economic activity.⁴⁵⁰ Rehabilitation and remediation will involve backfilling underground mines, clearing and removing buildings and equipment, removing contaminated ground and water, soil stabilisation, re-vegetation, re-establishment of wildlife habitats, and rehabilitation of the land to allow for post-closure activities such as farming, conservation, and recreational uses.⁴⁵¹ The state must enforce the provisions of NEMA and the Financial Provisioning Regulations, to ensure that sufficient financing from mining companies is secured before a mine’s closure for rehabilitation and remediation purposes.^{452,453} Mining licences should also not be granted when long-term sustainable land use cannot be guaranteed upon the cessation of mining operations.⁴⁵⁴

- **Improving laws and regulations and using stricter enforcement protocols**, including criminal charges, against mines which do not adequately manage their tailings facilities and discharge untreated mine water into watercourses. The DA will ensure the appropriate regulations are in place to prevent potential harm from mine closures. These regulations will ensure transparency and monitoring of tailings facilities and create sufficient buffer zones between tailings facilities and communities.⁴⁵⁵ The DA will also ensure that mining companies are held accountable for discharging untreated mine water into the watercourse through increased legislative penalties. Mining adversely affects water quality and poses a significant threat to South Africa's water resources. When mine water is not properly treated and discharged into watercourses, it harms ecosystems, pollutes water sources, and poses health risks to the surrounding communities.⁴⁵⁶
- **Utilising mining water treatment** through a series of processes that remove and reduce contaminants from wastewater. Treatment processes can include filtration, chemical precipitation, disinfection, and sedimentation. The method chosen is dependent on the mine site and the water quality standards sought to be achieved before the water is discharged or reused.⁴⁵⁷
- **Investigating sustainable zero-waste-to-landfill solutions, such as bioremediation for mining waste streams.** The waste streams generated by mining (or tailings) are diverse. However, hydrocarbon-contaminated soils and stones are the most common. Numerous mines have yet to find solutions to these problems and remain prevalent across various mineral subsectors of the mining industry.⁴⁵⁸ Bioremediation⁴⁵⁹ is an effective method of achieving the objective of zero-waste-to-landfill for mines. In chemical remediation, hazardous waste is made safer through the use of chemicals, whereas in bioremediation, living organisms are genetically engineered to perform specific tasks. Through microbial bioremediation, mine tailings can be converted into safer materials that can be disposed of over time. The converted waste can also be left in its natural state. These technologies allow mining and other industries to offer immediate zero-waste-to-landfill solutions that would otherwise require significant expenditures to resolve. A bioremediation system, as opposed to other solutions requiring expensive transportation and treatment, is an elegant and sustainable solution that reduces carbon emissions, chemical usage, and overall costs.⁴⁶⁰

The Harmful Impacts of Littering in South Africa

Littering is the careless and improper disposal of small amounts of waste, which degrades the environment. It is an act by an individual or group that prioritises private interests over those of the public and places the consequences of the litter on the community.

The causes of littering are varied. It is rare for a person to view themselves as a litterer, and instead, blame is typically placed on infrastructure issues, such as a lack of bins.⁴⁶¹ However, cultural and societal attitudes may also play a role. The externalisation of private costs onto the public, a lack of 'community spirit', and a culture of not caring about the environment are causes of littering.⁴⁶²

Some of the key challenges relating to littering include:

1. Environmental and health impact

Littering harms the environment and human health. Litter can pollute waterways and soil quality while also lowering air quality due to vapours released by littered waste. An environment polluted by litter can encourage the spread of diseases, particularly within contaminated water systems, which can spread illnesses when untreated water is consumed.⁴⁶³ Litter can also block stormwater drains, which may result in localised flooding events.⁴⁶⁴

2. Threatens wildlife

Litter threatens wildlife, as it can be consumed by animals who mistake it for food. Ingested foreign objects can reduce stomach capacity as they cannot be ingested and may damage an animal's internal organs if sharp or poisonous.⁴⁶⁵ It is estimated that 100 000 sea mammals are killed by plastic litter per year.^{466,467}

3. Economic costs

Littering also causes economic costs. Estimating the costs of cleaning litter is difficult, as many municipalities do not report this as a separate line item and instead report these costs as part of cleansing or waste collection services.⁴⁶⁸ However, one international study has estimated that litter clean-up costs in the United States amount to approximately \$11.5 billion per annum.^{469,470}

The economic costs of littering extend beyond clean-up operations and include the opportunity cost of this expenditure, which could have been used for more pressing societal needs such as electricity sanitation, and housing.⁴⁷¹ Furthermore, litter also reduces an area's aesthetic value, which results in the social value of communal areas such as parks and playgrounds being diminished. The presence of large amounts of litter may also reduce the values of surrounding properties.⁴⁷²

Revenue generated from tourism may be affected by littering, as it reduces the attractiveness and desirability of tourist destinations. This was outlined in a survey that sought to determine the importance of beach cleanliness to domestic and foreign tourists in the Cape Peninsula. The study found that half of the respondents were prepared to spend more than seven times as much to travel to a clean beach. In addition, it found that a litter density greater than 10 large items per metre of beach would act as a deterrent to 40 percent of foreign tourists and 60 percent of domestic tourists.⁴⁷³

DA Policy Recommendations to Reduce Littering Levels

The DA will reduce littering to create a clean environment by:

- **Ensuring sufficient and accessible waste disposal infrastructure is available.** Public garbage bins must be installed throughout busy public areas to allow for accessible disposal of small amounts of waste. These garbage bins must be placed in town centres, walking routes, public gathering areas and near transportation hubs and shopping districts.⁴⁷⁴ Just as important as the placement of these bins must be their regular emptying and maintenance by municipalities to ensure that they are not overfilled. In addition, drop-off facilities that accept bulky items and garden waste must be strategically located near residential neighbourhoods as a complement to public garbage bins.
- **Enforcing strict littering laws and penalties to deter littering in public spaces.** The existence of garbage bins does not guarantee that they will be used. It is also important that there is a strong perception of the likelihood of receiving a fine or penalty, as this significantly increases the deterrence effect of fines for littering.⁴⁷⁵

Where We Govern

City of Cape Town

The City of Cape Town is combating littering and illegal dumping through its Urban Waste Management By-law Enforcement Unit. Over three months in 2023, the unit issued 50 fines for unlawful dumping, totalling R1 615 100, and 353 fines for littering, amounting to R176 000.⁴⁷⁶ For the year 2022/23, an average of 144 fines were issued per month, and in the first quarter of 2023/24, a surge of 115 per cent in fines issued occurred, with an average of 311 fines being issued per month.

The City is also providing cash rewards of between R1000 and R5000 for information provided by Whistleblowers, which leads to convictions for illegal dumping through its #SpringCleanCT campaign.⁴⁷⁷

The City of Cape Town's crackdown on littering and dumping is an important step to ensure that the aesthetic value of the City is maintained. This will help keep the City's status as a top destination for both domestic and international tourists, while also allowing residents to enjoy clean and sanitary public spaces.

- **Rolling out of widespread littering education and awareness campaigns.** Education campaigns are a critical component of efforts to reduce littering over the long term. Campaigns utilising television adverts, social media posts and newsletters can serve an important role in raising awareness about the harms of littering and changing community attitudes surrounding illegal waste disposal. Schools and community organisations should also be approached to bring littering awareness campaigns directly into schools and public meeting facilities to enhance the reach of anti-littering messaging. Anti-littering signs could also be placed in highly littered areas to remind individuals in these areas that littering is discouraged and that fines could result from their actions

Poorly Managed and Overutilised Landfills

A landfill site is a place where waste is dumped, levelled, and covered with earth. The material is then gradually left to decompose over a predetermined period. South Africa's high reliance on landfills is counter to the aims of the National Waste Management Strategy, which has adopted a Waste Management Hierarchy which places treatment and disposal of waste at the bottom of the hierarchy and as a method of last resort.⁴⁷⁸ High levels of landfill utilisation run contrary to the aim of establishing a circular economy, which requires that waste be reduced, reused or recycled, with landfills only being utilised once all other options have been exhausted.

Under section 24 of the Constitution, the Government is obliged to protect all South Africans' environmental rights. South Africa has a highly advanced legislative and regulatory framework governing waste management. However, compliance and enforcement of legislation and standards are often lacking.⁴⁷⁹ Under the Constitution, waste management is a service which must be carried out by local government. In addition, section 9(1) of the National Environmental Management Waste Act⁴⁸⁰ states that municipalities must employ their executive powers to provide waste management services, which includes refuse removal and the storage and destruction of waste, in a manner which does not conflict with national and/or provincial standards.⁴⁸¹

Improperly managed landfills pose environmental and health risks to surrounding communities. The government must introduce measures to reduce landfilled waste, promote alternatives for reuse and recycling, and ensure that landfilled waste is treated and disposed of as safely as possible.⁴⁸²

There is currently a lack of formal statistics on the amount of available landfill space.⁴⁸³ However, the DFFE has stated that the number of landfills in South Africa stands at 826 sites.⁴⁸⁴ As mentioned earlier, landfills should be considered a disposal method of last resort, as they present several negative externalities, which include the emission of greenhouse gases, noise creation, odour, litter, and pests such as vermin.⁴⁸⁵ Landfills can also affect water quality when the water content of waste and rain, which filters through the waste layers, creates leachate.^{xvii} Landfills in wet climates or with waste with high water content will generate more leachate, posing a significant risk to the surrounding environment.⁴⁸⁶

There are several issues relating to landfills in South Africa. These include: 1) high landfill use; 2) a lack of reliable data; 3) exposure to waste sites; 4) unlicensed landfills; 5) municipal challenges; 6) negative financial incentives; and 7) inappropriate disposal of specific waste types.

1. High landfill use

South Africa still has high levels of landfill utilisation, with approximately 90 percent of waste being disposed of at landfill sites in 2011.^{487,488,489} The causes of South Africa's continued high utilisation of landfilling include legislative barriers, low costs of landfilling, high costs of alternative waste management methods, a lack of funding, and behavioural factors within society.⁴⁹⁰

Municipalities' Constitutional mandate to collect and dispose of waste can prevent recycling from being viewed as part of their responsibility. Municipal solid waste managers' KPIs also focus on disposing of waste in landfills. This results in a focus on landfill disposal rather than the diversion of waste from landfills.⁴⁹¹

The National Waste Management Strategy (NWS) fails to allocate roles and responsibilities within municipalities to ensure waste reduction, reuse, recycling and diversion from landfills. The NWS has set a long-term goal of "Zero Waste going to Landfill" through staggered 5, 10 and 15-year landfill waste reduction targets.⁴⁹² However, the failure to allocate responsibility for these targets can result in municipalities waiting for other stakeholders to take the required actions.⁴⁹³

Several legislative hurdles make it difficult for the private sector to participate in waste diversion activities. These include requirements to obtain Waste Management Licences, municipal by-laws assigning ownership of waste to municipalities, which prevent the private sector from accessing waste streams, and red tape that makes the establishment of public-private partnerships difficult.⁴⁹⁴ Currently, materials classified as waste require licensing to be obtained in order for beneficiation to occur, which makes it difficult for the private sector to participate in the beneficiation of these materials.⁴⁹⁵

xvii Contaminated liquid which may escape a waste disposal site, and subsequently contaminate groundwater, surface water and soil.

2. A lack of reliable data

There is a lack of reliable data to inform policy decisions on landfills. Municipal baseline data on types, volume, composition and quality of waste generated is currently insufficient, with significant under-reporting and inconsistencies in the data stored.⁴⁹⁶ The South African Waste Information Service (SAWIS) was developed to create a reporting framework for generators, recyclers, exporters and disposers of waste.⁴⁹⁷ However, this SAWIS has not been adequately used by waste managers, which has led to waste management planning being based on assumptions.^{498,499}

This issue was highlighted in the 2020 National Waste Management Strategy, where only 30 percent of waste management facilities filed data reports to SAWIS.⁵⁰⁰ This is compounded by the fact that few municipalities possess fully functional weighbridges, which makes collecting and reporting accurate data on landfill disposal difficult.^{501,502}

3. Exposure to waste sites

There has been an observed increase in household exposure to waste sites between 2008 and 2015, with the median distance decreasing from 68.3km to 8.5km.⁵⁰³ The harmful impacts of landfill sites include odour, wind scatter, fires and pollution, which can significantly harm communities that live near these sites.⁵⁰⁴ A study of a landfill site in Limpopo found that 78 percent of participants living close to a landfill reported experiencing serious air quality contamination and experienced symptoms such as influenza, eye irritation and body weakness at a rate higher than those who lived further away from the landfill.⁵⁰⁵ In addition, residing within 5 km of a waste site was found to be associated with asthma, tuberculosis, diabetes, and depression even after socioeconomic factors are controlled for.⁵⁰⁶

This extends to unregulated salvaging at landfill sites, which poses several health risks to waste pickers. South Africa has more than 90 000 informal sector waste pickers⁵⁰⁷, however some recent estimates place the number at almost 215 000.⁵⁰⁸ They play a valuable role in diverting recyclable materials away from landfills. Waste picking emerged in the late 1980s, when waste pickers identified a gap in the waste value chain which allowed for them to collect and sell recyclable materials. Waste pickers therefore serve as an important link between waste creators, recycling brokers or private recycling companies.⁵⁰⁹

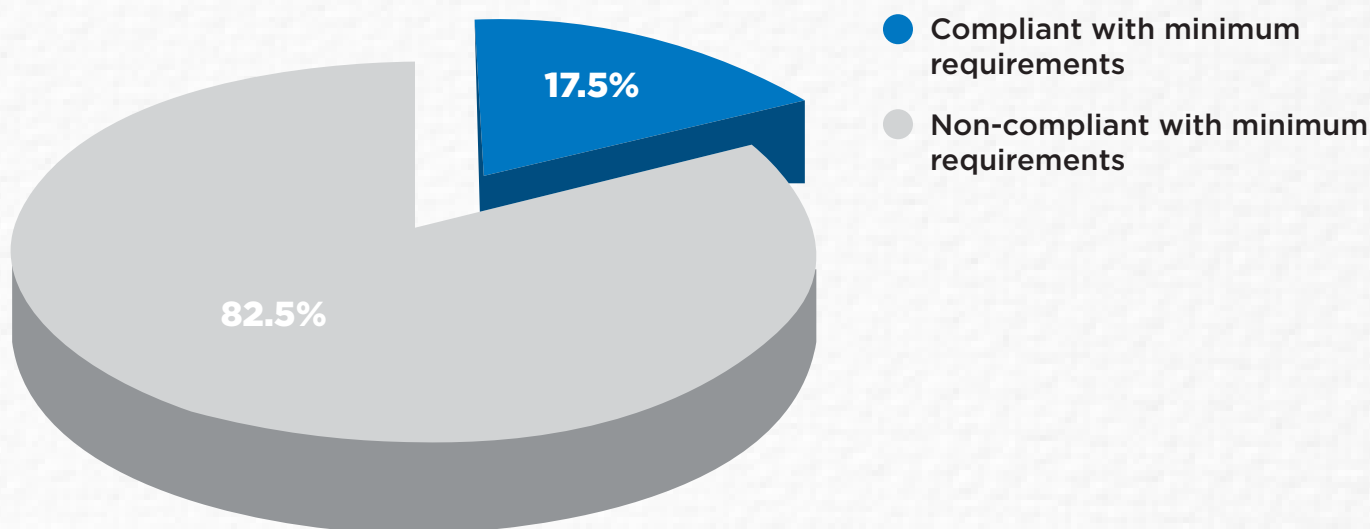
An estimated 80-90 percent of paper and packaging materials are recovered by informal waste pickers.⁵¹⁰ In addition, waste pickers save municipalities between R309.2 and R748.8 million by removing recyclables from landfills.⁵¹¹ A study of 176 waste pickers in Tshwane showed that 43 percent of waste pickers believed their illnesses were work-related.⁵¹² A further study of 114 waste pickers in Limpopo province, established that waste pickers were 1.7 times more likely to develop a common health disorder, and that there was a significant correlation between the health conditions of a waste picker and number of days worked at a landfill site.⁵¹³

4. Unlicensed landfills

There are a large number of unlicensed landfill sites in South Africa.⁵¹⁴ Of the reported 826 landfill sites in South Africa, 667 (81 percent) are licenced in terms of the National Environmental Management Waste Act.⁵¹⁵ However, there are reports of large numbers of unregulated dump sites which are not licenced or reported to the South African Waste Information Centre (SAWIS). One report estimated that 639 general and 58 hazardous waste sites are unlicensed.⁵¹⁶

These sites typically are not subject to permit conditions and compliance standards, and even when landfills are licenced, they often do not operate according to their permit conditions. These unlicensed or non-compliant landfill sites are likely to lack proper infrastructure, which results in artificially low costs of running and utilising these landfills.⁵¹⁷ These landfill sites are also likely to negatively impact the environment due to their non-compliance with licencing conditions.⁵¹⁸ A landfill audit conducted by Afriforum in 2023 found that only 17.5 percent of all audited landfill sites complied with 80 percent or more of the minimum landfill site requirements.⁵¹⁹

Figure 12: Percentage of Afriforum Audited Landfill Sites Which Complied / Did Not Comply with Landfill Site Minimum Requirements.⁵²⁰



5. Municipal challenges

Many landfill sites are poorly managed due to corruption, a lack of leadership, a lack of waste management expertise, a lack of compliance with relevant legislation, insufficient allocation of budgets towards the development of landfills, and low priority afforded to waste management and landfills, in comparison to other service delivery priorities.^{521,522}

Lack of funding results in municipalities having difficulty managing landfill sites. Establishing and operating landfill sites is capital-intensive, which leads to many municipalities having inadequate sites.⁵²³ Solid waste tariffs and landfill tipping fees are often set too low to reflect the true costs of providing these services, which results in municipalities lacking sufficient funding to maintain and improve their infrastructure.⁵²⁴ A lack of funding also prevents municipalities from bringing their landfill sites into full compliance with relevant legislation and permit conditions.⁵²⁵

The causes of insufficient funding include: a lack of full-cost accounting^{xviii} (which, while required by the National Waste Management Strategy, is utilised by very few municipalities); municipal councils who seek to balance cost recovery with ratepayer affordability; the setting of tariffs as a flat fee, which fails to account for the quantity of waste generated; the obligation to provide free waste management services to indigent households; and a tendency by municipalities to charge low or no tipping fees to avoid incentivising illegal dumping or due to a lack of weighbridges.⁵²⁶

xviii Full cost accounting seeks to calculate the full cost of providing a service, which includes capital and operating costs, as well as overhead, maintenance, administration, replacement and interest charges.

6. Negative Financial incentives

There is a need for the costs of landfilling to accurately reflect the negative externalities (harms) caused to the environment by accounting for these costs in landfilling fees. A failure to accurately account for the full cost of landfilling on society, when compared to the high cost of alternative waste management systems, is a partial cause of South Africa's dependence on landfills. For example, recycling requires segregating waste and, in some instances, pre-processing steps such as washing. This significantly increases alternative waste systems' capital and operating costs compared to landfilling.⁵²⁷

There is a perceived lack of financial benefit associated with the diversion of waste from landfills to alternative waste management systems. For example, if there is sufficient airspace remaining at a landfill, there tends to be no immediately perceivable benefit to reducing landfill usage. Many operating costs such as salaries at a landfill remain constant irrespective of the amount of waste dumped, which creates a negative incentive to maximise landfill usage as the costs per tonne of waste become progressively lower. In addition, the significant capital investment required to establish a landfill results in municipalities seeking to recover these costs through the continued utilisation of remaining landfill airspace.⁵²⁸

7. The inappropriate disposal of specific waste types

Tyre waste contributes significantly to both landfills through dumping and air pollution through burning. Only about 20 percent of tyres produced in South Africa were recycled in 2020.⁵²⁹ Dumping of industrial tyres is prohibited by regulations as found in the *Industry Waste Tyre Management Plan*, but this is not adequately enforced.⁵³⁰ In many rural areas, without a disposal alternative, tyre waste is often burnt, significantly contributing to air pollution.⁵³¹

Large amounts of organic waste are disposed of at landfills, with organic waste accounting for approximately 34.6 percent of all waste generated,⁵³² and approximately 40 percent of all landfilled waste.^{533,534} When this waste decomposes, it produces a greenhouse gas - methane - which is more than 22 times more damaging to the environment than CO₂,^{535,536} and can create leachate, which can contaminate surrounding water sources.^{537,538}

DA Policy Recommendations to Reduce Landfill Usage and Improve Landfill Operation

The DA will improve the operation of landfills by:

- **Improving the quality of waste data** by upgrading the SAWIS to improve ease of use and establish consistent data formats. Reporting to SAWIS must be made mandatory and municipalities must receive sufficient training and resources to improve their reporting capacity.⁵³⁹ Incentivisation of reporting to SAWIS can also be achieved through conditional landfill infrastructure grants.⁵⁴⁰
- **Ensuring that all waste management facilities and landfills are licenced** to guarantee that significant environmental impacts are identified and mitigation actions are prescribed and implemented.⁵⁴¹ Permit compliance must be facilitated through the widespread implementation of a compliance checklist to assist landfill operators in meeting the requirements of their permit conditions.⁵⁴² Punitive measures such as non-compliance fees and penalties must also be pursued to ensure compliance with licencing conditions.⁵⁴³
- **Ensuring that the landfill tariffs fully reflect all costs through environmental full cost accounting, which considers all direct and indirect costs imposed on society and the environment.** This will incentivise the utilisation of alternative disposal methods by private operators and households who take waste directly to a landfill, as when landfill tariffs are set below their true cost, the utilisation of landfills is effectively subsidised. This creates a perverse incentive to utilise landfills over alternative disposal mechanisms.⁵⁴⁴

- **Ensuring that cost-benefit analyses and municipal budgeting processes incorporate negative externalities** associated with landfills when compared to alternative waste management systems. In addition, the value of waste, the long-term benefits of using alternatives to landfills, and the potential benefits of waste-to-energy production must be incorporated into municipal waste management planning.⁵⁴⁵ Training and capacity development must be provided to municipalities to improve their ability to implement an accurate full-budget plan.⁵⁴⁶
- **Ensuring sufficient buffer zones are established and enforced** between residential and landfill sites.
- **Mitigating the negative externalities caused by landfills** by improving landfill infrastructure. This will include utilising liners to prevent leachate,^{xix} and capturing landfill gas to prevent the release of greenhouse gases. Additionally, the construction of improved landfill infrastructure will help internalise the environmental costs of landfill, as these infrastructure improvements will be passed on to landfill users through higher waste service pricing.
- **Encouraging and implementing legislative reforms** to ease the establishment of public-private partnerships in the involvement and operation of landfills. This must include expanding the number of waste types permitted for beneficial use by the private sector and updating municipal by-laws to remove municipal ownership of waste.⁵⁴⁷ Public-private partnerships should also be encouraged in the operation of landfills, as municipalities often cannot utilise modern technologies due to high costs. The private sector can also assist in utilising proven management processes, technologies, experience, and expertise, helping municipalities improve the operation of landfill sites cost-effectively.⁵⁴⁸ Fund tracking and auditing success will be incorporated into this process, so that the public can determine the relevant company's performance.
- **Investigating establishing a conditional waste management infrastructure fund**, to financially support infrastructure upgrades. Conditions to access this funding may include the licensing of landfill sites, compliance with licensing conditions, the implementation of full cost accounting principles, accurate cost-reflective tariffs and tipping fees, and a requirement to report waste management data to the SAWIS.⁵⁴⁹
- **Providing waste pickers at landfill sites with adequate personal protective equipment**, hand sanitisers, hand-washing stations and premises to separate and store recyclables – which would prevent waste pickers from taking collected waste materials back to areas where they live.^{550,551}
- Establishing municipal waste management forums, where municipalities can share best practices and experience in waste management and landfill operation.⁵⁵² This will prevent the operation of municipalities in silos and the repetition of previously experienced and resolved mistakes.

The DA will seek to reduce waste to landfill by:

- **Adjusting Key Performance Indicators (KPI's)** of municipal solid waste managers to include the diversion of waste away from landfills.⁵⁵³
- **Running education campaigns** to raise awareness among households and businesses of the harm that landfilled waste causes to the environment, in comparison to recycling and reuse.
- **Conducting trials for the establishment of quantity-based waste collection charges ('pay-as-you-throw') to be imposed by municipalities on households to incentivise waste reduction** in comparison to existing flat rate collection charges.⁵⁵⁴ These trials will seek to understand the administrative challenges in rolling out this system and determining the feasibility of a subsequent widespread rollout.

xix Leachate is the toxic sludge that forms when water is washed around waste in a landfill.

- **Investigating cost-effective waste-to-energy^{xx} solutions.** In addition to contributing to climate change, landfills emit greenhouse gases that can cause respiratory diseases and contaminate the soil around dump sites. Thermal waste to energy could divert up to 90 percent of received waste away from landfill sites while also addressing South Africa's power deficit.^{555,556} There is only one large-scale waste-to-energy plant in South Africa, the New Horizons Waste-to-Energy plant in Athlone, Western Cape which was launched in 2017. The facility processes approximately 500 tonnes of municipal solid waste per day.^{557,558} Waste-to-energy initiatives are also being intensified in other emerging market economies such as Brazil, which in 2018, established a biomethanisation^{559,560} unit in Rio de Janeiro to convert organic waste into biogas for generating energy and biofuel.⁵⁶¹

The DA will seek to reduce industry tyre waste and improve its recycling by:

- **Coordinating with industry to increase the number of recycling depots in rural areas and incorporate small businesses into the recycling supply chain.** Tyre recycling is handled primarily by tyre manufacturers at present.⁵⁶² Expanding their recycling capacity in less urban areas and incorporating SMMEs into their recycling supply chain will reduce tyre waste.
- **Adopting a watching brief for technologies that can improve the efficiency of tyre recycling.** Two innovative processes, pyrolysis and cryogenics,^{xxi} greatly improve the quality and quantity of materials recovered from recycling. However, these processes are very costly and energy-intensive. As improvements to the cost-effectiveness are made, they can be incorporated into recycling processes in South Africa.^{563,564}

The DA will seek to reduce the organic waste-to-landfill pipeline by:

- **Improving the ability of residents to manage their organic waste collection at home.** Community projects, in individual households, are also vital for the collection and distribution of organic waste. In the US, the increased ability of residents to separately package and drop off organic waste collection via municipally supported services caused a considerable increase in the amount of organic waste being processed by nearby larger sites.⁵⁶⁵ In South Africa, there are beginnings of such projects with the free composting programme launched in Cape Town, which provides free compost containers and education on the process and aims to encourage residents to compost their own organic waste.⁵⁶⁶
- **Establishing widespread organic composting sites.** The United States has hundreds of designated organic waste sites around the country, including large-scale ones.^{xxii,567} Community sites that are near to one another typically combine waste to feed into the larger site. The facilities vary in efficiency, but there is evidence to support that a collection of both small - and large-scale organic waste sites significantly lowers water usage and improves air quality.⁵⁶⁸ Composting is a proven method of organic waste minimisation, as shown in places like Brazil (the Tera Ambiental. Facility in Sao Paulo, for example, processes 90000 tonnes of organic waste each year).⁵⁶⁹ Composting organic waste reduces the amount of waste requiring landfill and the generation of landfill gas. This further supports our water management objectives, which is to reduce high water usage, as composting is a highly water-efficient waste treatment method.⁵⁷⁰

xx Waste-to-energy refers to technologies that convert waste into energy sources (electricity, heat, fuel, etc.). See "Waste to Energy," Southern African Renewable and Alternative Energy Association (SAAEA), accessed November 26, 2022, <https://www.saaea.org/waste-to-energy.html>.

xxi These refer to using extreme heat and extreme cold, respectively, to breakdown tyres.

xxii Defined as sites that take in more than 10000 tonnes per year.

- **Incentivising private sector investment in the development and maintenance of organic composting sites** through two primary means: public-private partnerships and increased green reporting. The DA believes a green, just transition can be economically viable and will ensure that private sector involvement is both sustainable and grows South Africa's economy.
- **Initiating public-private partnerships to involve the private sector in building and managing organic waste sites as well as training and hiring employees.** This works together with the [DA's Economic Justice Policy](#) – public-private partnerships will create jobs, ensure high standards from the management of the sites, and allow the processing of organic waste to be managed at a more localised level.
- As the standards for green reporting within companies improve and become better defined, companies will be incentivised to deal with waste sustainably. Green certifications can be given to companies participating in organic waste management projects, which can enhance their brand value and corporate social responsibility (CSR) reputation.⁵⁷¹
- **Establishing community-led projects and education workshops** on organic waste. An example is the "Sustainable Community Project" in Ghana, where one community successfully recycled 4000kgs of organic waste in one year. The programme improved sanitation, created a small, productive circular economy, and increased awareness of the benefits of organic waste recycling.⁵⁷²



Where We Govern City of Cape Town

The City of Cape Town is actively working to reduce the amount of organic waste which is landfilled. To achieve reductions in landfilled organic waste, the City utilises a local composting company to shred and chip garden refuse at nine of its drop off facilities and landfills. The garden refuse is then transported to a composting facility, with approximately 500 000 tonnes of organic garden refuse being diverted away from landfills annually.⁵⁷³

The City is also creating jobs through its Langa Organic Waste Diversion Project., which collects organic waste from five fruit and vegetable traders and 400 households. Expanded Public Works Programme workers collect the organic waste on bicycle-drawn trailers and transport the waste to a composting facility, which produces compost to be used at a local food garden, which assists in feeding some of the community's most marginalised residents.⁵⁷⁴

Finally, the City, through its Home Composting Programme is providing a limited number of free home composting containers to residents who apply and have a secure yards. The containers can be used by residents to compost their organic waste and use the compost they produce to feed nutrients back into their gardens' soil. This has the potential to assist residents in establishing their own backyard food garden while diverting their organic waste away from landfills.⁵⁷⁵



Objective 4: Ensuring Clean Air for All



The DA believes that all South Africans should enjoy clean, safe air and that efforts must be made to maintain good air quality. The adage “*Water is life*” applies equally to air; air is life, and its quality must be maintained sustainably.

To achieve this goal, the DA will work towards transitioning South Africa to cleaner energy sources in a phased approach. Dirty fuel sources that cause air pollution will be replaced with economical, sustainable, and cleaner alternatives.

The DA will further work to improve public transportation options and invest in electric vehicles, which offer cheaper, more sustainable, and safer commuting options to the public and for the movement of goods and supplies.

The DA believes in adopting the United Nations SDG framework for environmental goals. In particular, the goals of *SDG 3: Good Health and Well-being*, *SDG 13: Climate Action Efforts*, and *SDG 15: Life on Land* are of paramount importance. Key objectives include reducing the disease burden resulting from air pollution, ensuring the health of our population, and protecting the environment for the future.

Causes of Declining Air Quality in South Africa

Pollutants found in poor air quality can take various forms. Contaminants include particle pollutants,^{xxiii} soot, carbon dioxide (CO₂), sulphur dioxide (SO₂), and lead.⁵⁷⁷ Pollution is bad for health and bad for the environment.

Like many other countries, South Africa faces significant air quality challenges. South Africa ranks 47th in the global air quality index out of 134 countries listed (with 134th being the cleanest). The main pollutant is PM_{2.5}^{xxiv}, and South Africa's PM_{2.5} range is four times the recommended World Health Organisation (WHO) limit. Pollution is concentrated in big cities and industrial areas such as Johannesburg, Bloemfontein, and various smaller mining and industrial towns in Gauteng and Mpumalanga.⁵⁷⁸ Johannesburg is the most polluted major city in the country: its PM_{2.5} range is around three times the WHO-recommended air quality limit.⁵⁷⁹ The pollution average is pushed up by coal power stations, leading to South Africa's high pollution levels. This is particularly so in the Vaal Triangle (Sasolburg, Vanderbijlpark, and Vereeniging), which lacks strong pollution mitigation and management.⁵⁸⁰

A 2022 study by the *Global Air Initiative* reported that, in 2019, roughly 30 000 deaths occurred prematurely in South Africa because of poor air quality.⁵⁸¹ The health impacts are worsened in South Africa, a country with a high rate of HIV/AIDs infections and tuberculosis (TB). These two diseases weaken the immune system and lungs.⁵⁸² Therefore, respiratory illnesses contracted by HIV or TB patients are exacerbated by air pollution due to their already weakened immune systems.

There are three leading causes of pollution in South Africa, with some factors contributing more than others: 1) High reliance on coal; 2) Car-dependence; 3) Wood-burning and lack of electricity supply.

xxiii There are many pollutants: particle pollutants (2.5 and 10), Ozone, Carbon Monoxide, Sulphur Dioxide, Nitrogen Dioxide. However, the particle pollutant PM_{2.5} is the most dangerous for human health and is commonly used as a metric to evaluate air quality.

xxiv This stands for ‘particulate matter’: small pieces of dust which are 2.5mm in size on average. It is the most common pollutant that damages lungs.

1. A High Reliance on Coal and Fossil Fuels

Coal mines contribute significantly to air pollution. The mining communities in Gauteng and Mpumalanga, when analysed in 2019, were exposed to the worst air quality in the world.^{583,584} South Africa as a whole is one of the highest CO₂ emitters in the world.⁵⁸⁵ In absolute numbers, South Africa was 15th in terms of CO₂ emissions in 2024 and the largest emitter in Africa.⁵⁸⁶ Fossil fuels provided 91 percent of South Africa's total energy supply in 2022, compared to 80 percent globally. Coal dominates the electricity sector, accounting for 86 percent of all generation, while wind and solar make up only 6 percent.⁵⁸⁷ This ranks us *third* in the world when it comes to coal dependence. This is despite the average cost of renewable energy installations in South Africa having decreased by more than 77 percent since 2011.⁵⁸⁸

There has been minimal effort to move away from fossil fuels as a primary energy source. Government subsidies for fossil fuels have tripled since 2018.⁵⁸⁹ These include fuel cost subsidies for PetroSA, carbon tax exemptions, and VAT exemptions on gasoline and diesel sales. South Africa's CO₂ emissions from fossil fuels and industry have remained roughly consistent, between 400-500 million tonnes per year, since 2010. The same is true for PM_{2.5} emissions, which have not decreased since 2010.⁵⁹⁰ Meanwhile, countries of similar population size⁵⁹¹ – Spain, France, and the United Kingdom (UK) – that have invested in cleaner energy sources have halved that number over the last decade, reporting roughly 200-300 million tonnes per year. Brazil, a country with three and a half times the population of South Africa, has equivalent emissions of CO₂.⁵⁹² Therefore, they produce almost four times less CO₂ per capita by aggressive investment in renewable energy sources, accounting now for 83 percent of their energy supply.⁵⁹³

2. Poor Public Transportation and an Overreliance on Cars

South African transport emissions, as a contributor to outdoor air pollution, are the highest in Africa. Like many developing countries, we have an overreliance on cars and road transport. In Johannesburg, a total of 7 percent of air pollution arises from cars alone.⁵⁹⁴ Public transport alternatives are poorly funded and managed, and are considered unsafe.^{595,596} As demonstrated in France, from their extensive reworking of the Parisian metro system, effective public transport vastly improved the city's air quality in just a decade.⁵⁹⁷ While some exceptions exist in South Africa, such as the MyCiti bus service in the DA-led Cape Town, public transport is underused and not readily available.

Figure 13: Different pollution contributions from different sectors. In South Africa, our energy sector contributes the most to pollution and is the highest in Africa.⁵⁹⁸

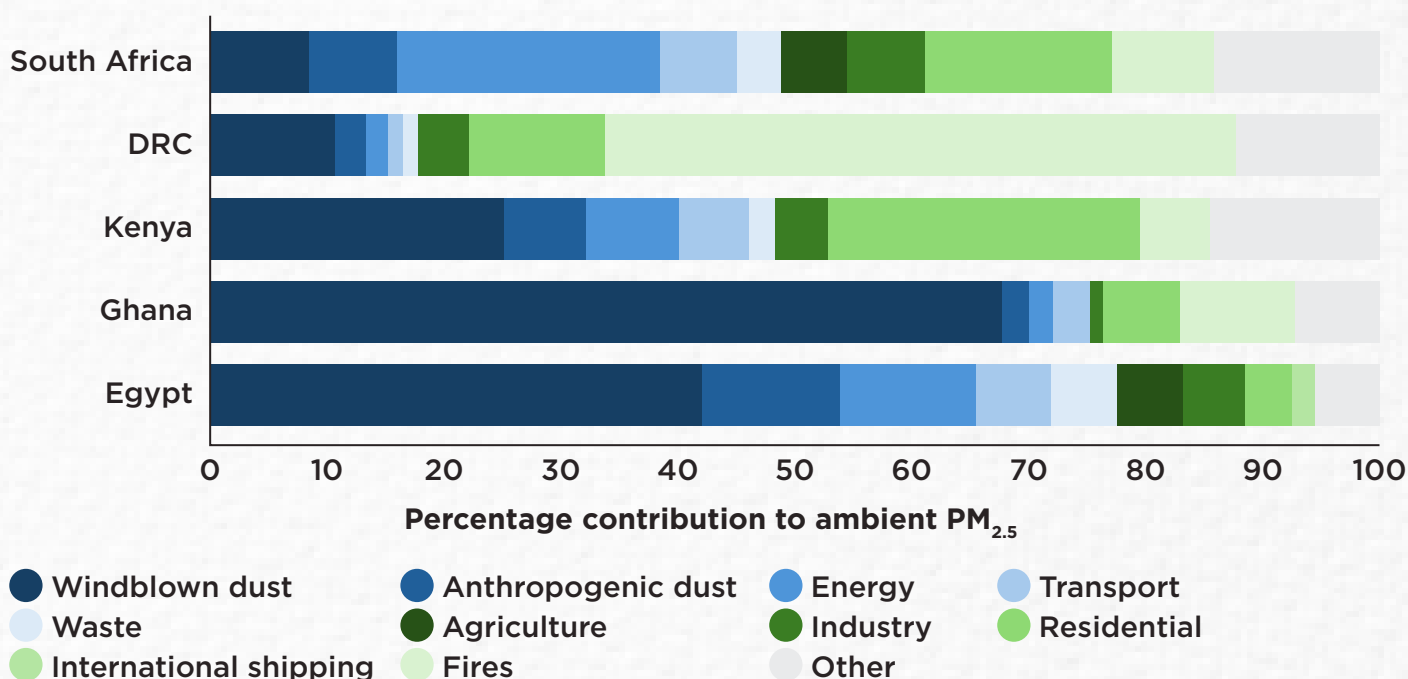
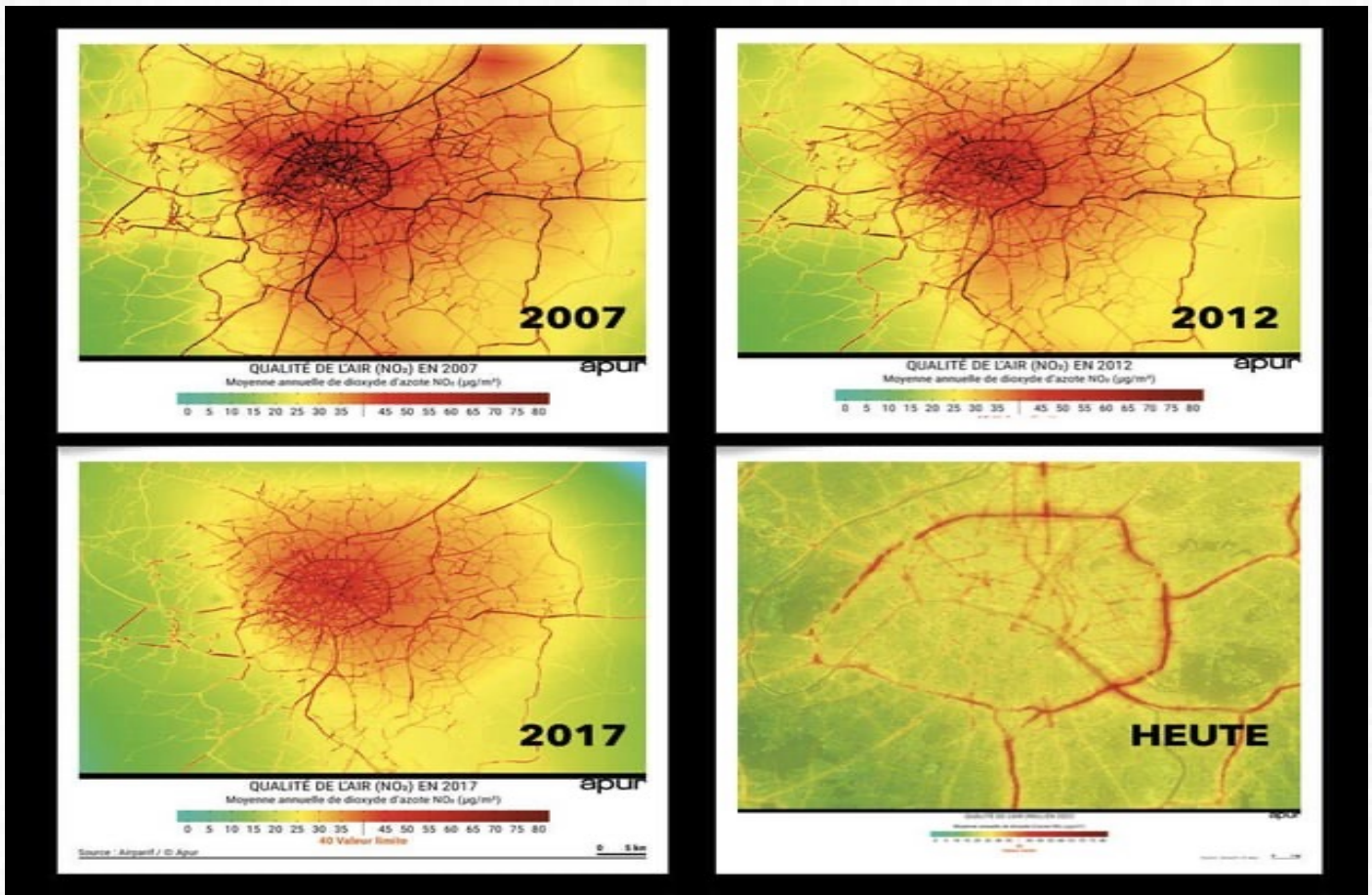


Figure 14: Air quality map of Paris. Red indicates air pollution levels above healthy WHO guidelines. As the transit network expanded and improved, and cars were banned from the city centre, air quality improved (“Heute” means “today”).⁵⁹⁹



South Africa produces the most CO₂ from commuting in the world, according to data collected from Numbeo.⁶⁰⁰ Cars are often the only way for many people to get to work, do leisure activities, and go to the shops. Our failing rail infrastructure is of particular concern as 90 percent of passengers use some form of road transport,⁶⁰¹ and 80 percent of goods are transported on the road. This means there is an abundance of trucks, which contribute significantly to air pollution.⁶⁰²

The majority of our vehicles are not “clean”. In keeping with South Africa’s reliance on fossil fuels, we have no investment or incentives for electric vehicles (EVs). However, EVs are not completely clean, given the lithium extraction required in their manufacturing process and the fact that, in South Africa, the electricity supply is mainly from coal.⁶⁰³ However, they significantly reduce air pollution in local regions and are more energy-efficient than petrol vehicles.⁶⁰⁴ For example, Norway’s air quality has improved dramatically after adopting EVs, having have seen a 35 percent reduction in CO₂ emissions since 2012.^{605,606} With Eskom’s repeated failings and the energy crisis, any electrification of the transport network – including cars – would require a stable and sustainable energy supply and expansion of the charging grid.

Car-centric urban design and the Apartheid spatial planning have left enduring negative consequences. People living in poorer areas that are historically disconnected from economic hubs have relied on cars to commute. This, in turn, has led to city planning revolving around vehicles. Finding physical space and funding for public transport alternatives becomes increasingly difficult when cars dominate public space.⁶⁰⁷

3. Wood Burning in Homes

Household air pollution results from the burning of various fuels for cooking or heating using open fires or cookstoves with limited ventilation. Burning fuels such as coal or wood produces pollutants, including PM2.5 and CO. The concentrations of pollutants in homes where solid fuels are burned often far exceed guideline levels for protecting human health.⁶⁰⁸

Wood burning is needed in low-income households. The 2021 General Household Survey shows that 89.3 percent of households in South Africa are connected to the electricity grid and only 77.7 percent use electricity for cooking. *This means about a quarter of South Africans use solid fuels for cooking*, which contributes to household emissions and may have potential health consequences.⁶⁰⁹ Wood is the second greatest source of energy for cooking, used by 7.7 percent of South Africans.⁶¹⁰

This will be elaborated upon further in *Objective 5 – Preserving our Natural Resources*.

Negative Consequences of Poor Air Quality

Poor air quality has dire consequences in two main sectors: human health and the environment.

1. Air pollution is significantly harmful to human health

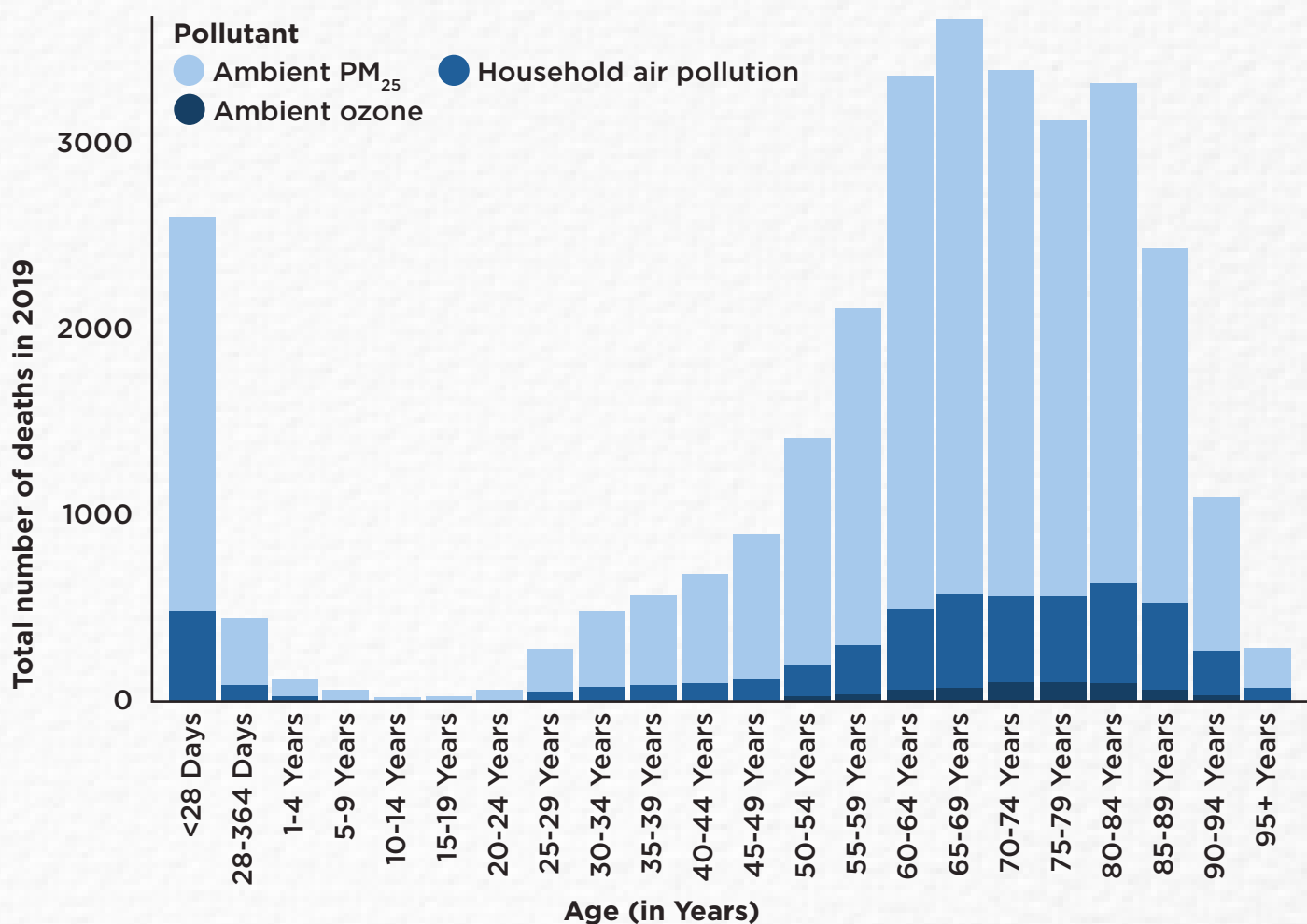
Air pollution is the fourth leading cause of death globally, accounting for nearly 7 million deaths annually and the second leading cause of death in Africa. Air pollution's impact on life expectancy is greatest in less-developed areas, where many people suffer the double burden of outside air pollution and exposure to household air pollution.⁶¹¹

The disease burden for air pollution-related deaths in South Africa was 30 000 in 2019.⁶¹² The coal industry has contributed significantly to South Africa's disease burden, as almost half of South Africa's PM2.5 emissions come from coal usage.⁶¹³

Both short-term and long-term exposure to air pollution are linked to an increased likelihood of death associated with pre-existing conditions. These are primarily lung and heart diseases: asthma, bronchitis, lung cancer, type 2 diabetes, heart attacks, and strokes.⁶¹⁴ These conditions are worsened by exposure to air pollution. Infants and older people are disproportionately affected by poor air quality. Infants in Africa are disproportionately affected by air pollution, especially household air pollution, partly due to the role pregnant women play in childcare as well as cooking and preparing food. Older people already have weaker immune defences and likely a lifetime of exposure to poor quality air.⁶¹⁵

Airborne pollutants can settle into water bodies, affecting water quality and aquatic life. Pollutants can also accumulate in the soil, affecting plant growth and soil health.⁶¹⁶

Figure 15: Death count for different age groups in South Africa as caused by different pollution sources.⁶¹⁷



2. Air pollution worsens climate change

The production of several greenhouse gases, such as ozone, CO₂, sulphur dioxide, nitrous, and methane, is accelerated by, and worsens, climate change. These gases are produced by various causes, such as vehicles, electricity processes, and home heating systems. They are associated with the development of lung diseases. The worsening of climate change has a knock-on effect: rising temperatures mean further electricity generation for cooling, which in turn produces more greenhouse gases.⁶¹⁸

3. Negative Economic Impact of Air Pollution

The economic costs of poor health are high. The average cost to Africa's GDP is around 6.5 percent, primarily from health damages resulting from air pollution.⁶¹⁹ These healthcare costs are caused by several factors, including missed school or working days.⁶²⁰ An already overburdened public healthcare system must accommodate additional patients, which could have been mitigated if measures were implemented to improve air quality.⁶²¹

DA Policy Recommendations for Improving Air Quality in South Africa

The DA's plan to ensure clean air in South Africa significantly overlaps with our climate change commitments (*Objective 1*). To lower air pollution, we must progressively decarbonise our energy and transport sectors. Reducing indoor air pollution is also a priority, and it will require providing greater access to electricity within South African homes.

To ensure communities can live in clean air environments and lead healthy, prosperous lives, the DA will reduce South Africa's reliance on coal and dirty fossil fuels by:

- **Developing a pipeline for renewable energy sources**, primarily solar and wind. This is outlined in more detail in our [Electricity and Energy Policy](#). The key recommendations are:
 - Revamping our energy supply around the green economy while ensuring a 'Clean Jobs Transition'. Energy generation needs to be made cleaner, but this must be done in a way that boosts the economy and increases employment.
 - Reskilling and retraining workers such that the move away from coal does not cost an already underperforming economy more jobs. This will promote significant net job creation in the energy and electricity sectors and the economy.
 - Decarbonising the sector through the construction of solar and wind farms and the uptake and use of renewable bio-fuels in the transportation, iron and steel, cement, mining, and chemicals sectors.
 - Offer tax rebates for rooftop solar installations for up to R75000 (once-off rebate) to enable small-scale embedded generation.
- **Investing in and developing a competitive market for greener energy sources**. This will require diversifying and enhancing the competitiveness of the generation sector, including newly established public and private generators. Private participation will be needed to enable a more affordable energy sector for consumers^{xxv} and will involve removing or amending regulations that unnecessarily inhibit the uptake of new renewable energy sources.
- **Maintaining our current nuclear capacity**. The DA has a cautious approach to new large-scale nuclear developments in the short term but will support the life extension of the Koeberg Nuclear Power Station in the Western Cape Province by twenty years. The air pollution capacity of a nuclear plant is far lower than that of a coal plant, making this form of power a potentially cleaner long-term energy solution.⁶²²

The DA will reduce South Africa's vehicle emissions by:

- **Removing tariff barriers on electric vehicles** and components for local manufacturing. This will improve competition in the sector, make EVs more affordable, and increase EV usage. This includes implementing a zero VAT rating for EVs. EVs are both an economic and environmental benefit for a developing nation like South Africa.⁶²³
- **Facilitating the local manufacture, assembly, and installation of electric vehicle charging and green refuelling facilities** throughout South Africa to support the uptake of electric vehicles.
- **Developing and expanding the public transport network, in particular rail**. A functional, safe, and greener public transport system will lower the number of vehicles on the road. A mixed-use transport system (trains, electric vehicles, buses) will significantly reduce air pollution.
- **Devolving rail management to competent local governments and metros**. The City of Cape Town has plans in place to take over its own passenger rail by mid-2025 to improve service delivery further and strengthen the economy.⁶²⁴ A more integrated public transport network will bridge lower-income residential areas to economic hubs. This will somewhat alleviate the legacy of Apartheid spatial planning and ill-conceived urban sprawl.

xxv As pointed out in Objective 1: South Africa will need to spend approximately \$250 billion over the next 30 years to close coal-fired power plants and transition to wind and solar power. The Just Energy Transition Investment Plan (JET IP) has reached approximately only \$11.9 billion.

The DA will work to reduce residential pollution by:

- **Promoting and subsidising the use of more efficient woodfire stoves** in areas that rely heavily on wood for energy. This short-term measure will be combined with long-term poverty alleviation and job creation programmes to reduce deforestation. Efficient woodfire stoves can significantly reduce the amount of wood used for cooking (slowing deforestation), the time spent collecting wood, and the adverse health effects associated with open fires.⁶²⁵ More detail can be found in *Objective 5* of this policy document.
- **Improving service delivery and community recycling projects to prevent the burning of waste.** More information can be found in *Objective 3* of this policy document.
- **Adopting a watching brief for burying wood as a carbon capture method to offset emissions.** New methods are being developed to bury burnt biomass underground to prevent CO₂ from being released into the atmosphere. The methods are still being developed. For example, Kodama Systems (a forestry technology company) has received funding to pilot a project in the Nevada Desert in the United States to study the effectiveness of this method in preventing greenhouse gas emissions.⁶²⁶ Other methods being developed involve burying wood and using cork trees to absorb the CO₂.⁶²⁷ The DA will adopt measures that prove effective, are scalable to rural areas in South Africa, and economically viable as they develop more.

The DA will work to promote cleaner, greener spaces by:

- **Investing more in the development of parks and public gardens.** Greenery can help absorb pollutants, improve air quality, and provide recreational areas for communities, enhancing overall well-being. A study in China found that increasing vegetation density by just 10 percent decreased the amount of PM_{2.5} significantly.⁶²⁸

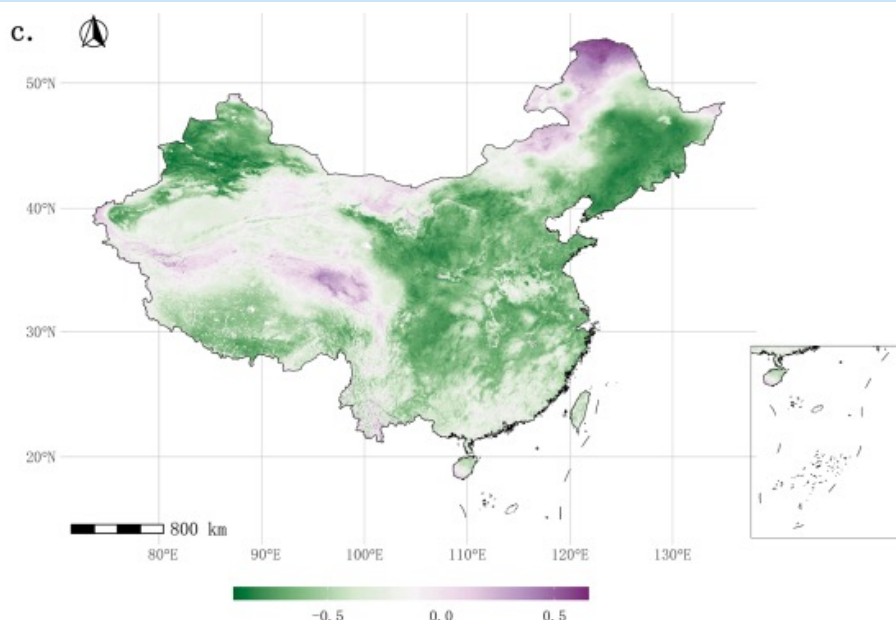
Case Study – Cleaning Air through Vegetation

China

A large-scale, multi-level data study was conducted in China on the impact of green space on air pollution in 2023. The study combined 20-year-long satellite data on vegetation growth in China and atmospheric readings on air quality.

Their analysis showed that increasing vegetation density by just 10 percent decreased the amount of PM_{2.5} to safer levels and that the correlation between vegetation and air quality is statistically significant. The effects of vegetation on air quality can be seen most clearly in this image from the study.

The areas shaded in green are high-density vegetation areas. Purple represents high air pollution. The areas without much green – white background – have considerably higher air pollution.⁶²⁹



- **Enable the sustainable building of housing in low-income communities** through retrofitting projects (for example, solar heating in ceilings to increase thermal insulation during winter).⁶³⁰

Where We Govern

City of Cape Town

The **Ceiling Retrofitting Programme** in Cape Town, South Africa, was initiated to address the lack of insulated ceilings in houses built under the Reconstruction and Development Programme (RDP) in the 1990s. These houses lacked proper insulation, leading to higher energy costs and health issues due to poor thermal performance and damp conditions.

The programme, launched in 2010, aimed to retrofit these houses with insulated ceilings and plastered exteriors to improve energy efficiency, reduce greenhouse gas emissions, and enhance residents' health and living conditions.

The retrofitting efforts began with pilot projects in Mamre and Kuyasa and have since expanded to cover thousands of houses across the city. The programme has shown significant benefits, including improved indoor air quality, reduced energy costs, and better living conditions for residents.

A subsequent round of retrofitting involved 8,000 ceilings in communities outside Cape Town's city centre between 2014 and 2017. In addition, the second iteration of the project featured educational components in which residents were given training on how to live healthier and more sustainable lives.⁶³¹

Source: <https://www.getyourguide.com/cape-town-l103/half-day-township-tour-t12503/>







Objective 5: Preserving Our Natural Resources



Preserving our natural resources is crucial for the future prosperity of South Africa. Our nation is home to many diverse, endemic, and unique species, which must be protected. The DA is committed to the Constitutional vision of preventing biodiversity loss and ensuring our natural heritage is protected for future generations. This includes increasing conservation and reserve management, education and awareness, decreasing habitat destruction and deforestation, improving our responses to wildfires, and taking firm action against poaching.

The DA is committed to proactive measures to manage and control invasive species, such as improving control effectiveness at a municipal level, assessing biological agent control viability where appropriate, increasing funding through private-sector partnerships, and working closely with environmental experts and communities to ensure that the measures in place benefit the communities who are harmed by invasive species. Developing effective solutions to deal with invasive species will restore ecosystems and their associated services and allow biodiversity in South Africa to flourish.

The DA supports the sustainable leveraging of natural assets that balance economic growth with the needs of the environment. Our natural resources must be leveraged in an environmentally conscious way to contribute towards alleviating poverty, inequality, and unemployment in South Africa. Examples of this include our holistic approaches to the forestry and fishing sectors, which balance the needs of our communities with the health of our ecosystems. The DA supports a biodiversity economy that contributes to jobs and livelihoods by utilising our natural resources ethically and sustainably. This includes both the green and wildlife economies.

Causes of Biodiversity Loss and Its Economic Impact

South Africa has an exceptionally rich biodiversity, estimated at 250 000 to 1 000 000 species of plants and animals combined.⁶³² South Africa is home to 10 percent of the world's plant species and 7 percent of its reptile, bird, and mammal species.⁶³³ Over 13 000 plant species in South Africa are endemic,^{xxvi} found nowhere else in the world.⁶³⁴ South Africa's marine biodiversity^{xxvii} is equally notable, home to 15 percent of the world's marine species,⁶³⁵ a high proportion of which are also endemic.⁶³⁶ This biodiversity is primarily attributable to South Africa's diverse and extensive natural habitats.

The world is losing species at an unprecedented rate, in what has been termed the "*Sixth Mass Extinction*".^{xxviii,637,638,639} Given that current extinction rates far exceed natural (background) extinction rates, Earth is predicted to reach 75 percent species loss if current threats to species are not addressed.^{640,641}

South Africa displays similar downward biodiversity trends. Almost half of the South African ecosystem types evaluated in the 2018 National Biodiversity Assessment (NBA) are threatened,⁶⁴² an increase from the 33 percent reported in the 2011 NBA.⁶⁴³ For example, in 2011, 43 percent of estuarine ecosystem types and 65 percent of wetland ecosystem types were considered threatened.⁶⁴⁴ In 2018, this rose to 86 percent of estuarine and 79 percent of wetland ecosystem types.⁶⁴⁵ Despite these threats, many of these habitats, areas, and species are not effectively protected.⁶⁴⁶

South Africa's rich biodiversity faces several major threats, with human-induced loss of natural habitat standing out as the leading cause of global biodiversity decline.⁶⁴⁷ Developing effective **biodiversity conservation and restoration measures** is critical for nature, the economy, and society. In South Africa, loss rates have increased across all biomes, indicating that the drivers of change are intensifying.

xxvi Endemic species are species that are native to a particular area or country and do not naturally outside of this area or country.

xxvii Marine biodiversity refers to the variety of lifeforms found in the ocean.

The degradation and loss of South Africa's biodiversity have severe implications for people and the economy.⁶⁴⁸ Biodiversity provides many benefits to people, notably jobs, water and food security, and increased resilience to climate change. Natural systems provide a source of direct income to poor households, generate economic value, and provide significant non-market benefits.^{xxix,649} A 2017 study estimates the value to be R275 billion per annum.⁶⁵⁰ Other studies conducted in 2017 and 2021 estimated South African ecosystem services to be worth \$437 billion per annum⁶⁵¹ and \$610 billion per annum,⁶⁵² respectively. Ecosystem value varies over time and between studies due to methodologies and data used, but valuations consistently show that ecosystem services are of significant economic importance to South Africa.

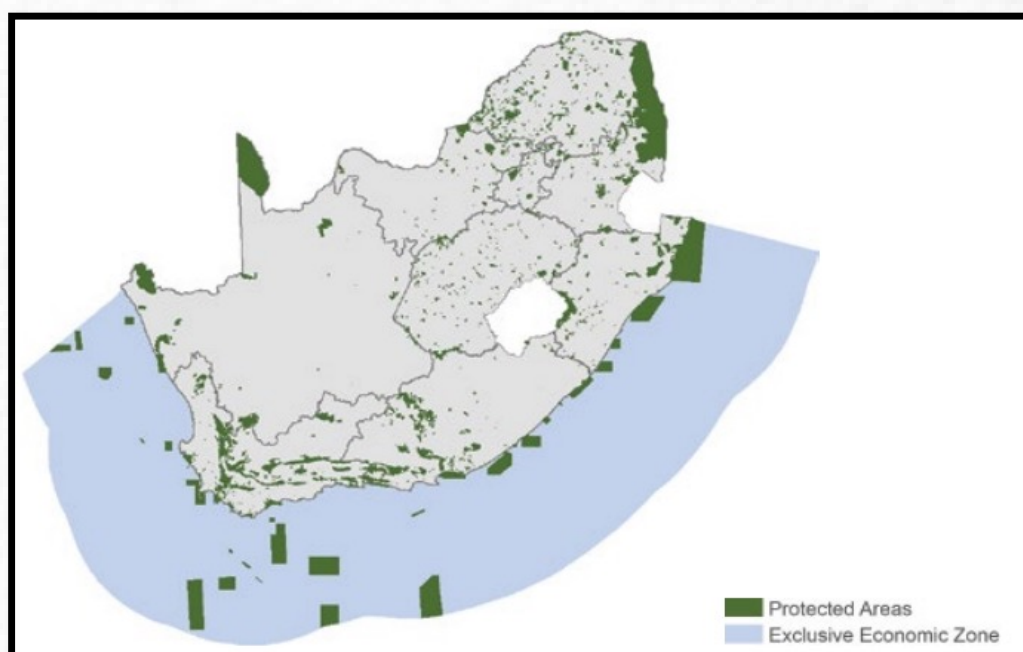
The DA will focus on addressing the causes of biodiversity loss by implementing solutions which promote sustainable economic growth. The DA recognises that investment in environmental challenges offers competitive rates of return through direct and indirect economic growth and human health.⁶⁵³

The challenges that negatively impact South Africa's ability to maintain and increase its biodiversity can be divided into four categories: 1) Failure to meet biodiversity conservation targets; 2) a lack of sustainable practices in various sectors; 3) inadequate information resources; and 4) insufficient funding.

1. South Africa is failing to meet biodiversity targets

There is insufficient formal protection of South Africa's ecosystems. There is substantial evidence that well-managed protected areas can reduce biodiversity loss, acting as vital habitats for native species.^{654,655,656} South Africa's protected areas have expanded in the past decade: 75 percent of terrestrial and 87 percent of marine ecosystem types have some level of protection.⁶⁵⁷ However, only 9.2 percent of South Africa's terrestrial landscape and 5.4 percent of its marine territory are formally protected.^{xxx,658,659} This is worrying given our commitment under the Global Biodiversity Framework to ensuring that 30 percent of terrestrial, inland water, and coastal and marine areas are adequately protected by 2030.⁶⁶⁰

Figure 16: South Africa's protected area network (shown in green).⁶⁶¹



xxviii A mass extinction is a short period where at least 75 percent of species are lost.

xxix Non-market benefits of the environment are those that cannot be traded in markets. For example, clean air and water, and recreational space are all non-market benefits of the environment.

xxx Areas with some level of protection are often called conservation areas. Conservation areas are areas not formally protected by law but informally protected by the current owners and managed at least partly for biodiversity conservation. Formally protected areas are legally protected by the Protected Areas Act.

Existing protected areas are often poorly managed, lack necessary funding, are understaffed, and are burdened with failing infrastructure. For example, in a report by the Endangered Wildlife Trust, 83 percent of expert respondents confirmed that most provincial reserves are financially under-resourced and 58 percent believed that provincial reserves lack the technical capacity to be effectively managed.⁶⁶² Many reserves are still affected by drivers of biodiversity loss despite their protected status.⁶⁶³ These drivers include air and water pollution, disease, and species removal through hunting, plant collection, and/or poaching. For example, 87 percent of provincial reserves in Kwa-Zulu Natal have livestock, which can threaten plant diversity if grazing is not managed.^{664,665} As a result, many protected areas fail to achieve their conservation objectives.

A lack of community engagement can undermine the long-term sustainability of protected areas, and are often excluded from reserve planning or management.^{666,667,668} In South Africa, reserves are mostly governed by individual landowners or national and provincial ministries and agencies. There are a few joint governance reserves and no community-governed ones.⁶⁶⁹ Better cooperation and facilitation between the three spheres of government and a devolution of powers where appropriate can enable local governments to act decisively and efficiently. Failing to consider the social impacts of protected areas can negatively impact communities through loss of income, food insecurity, and loss of tenure rights.⁶⁷⁰

2. Lack of Sustainable Development

As South Africa grows economically and industrially, our resource use will increase. This growth must be environmentally sustainable if it is to benefit people socioeconomically and preserve the environment. This is not being done sufficiently in several areas and has a detrimental impact on biodiversity due to the following reasons:

Intensive agriculture, which includes crop cultivation and plantation forestry, is one of the main pressures on biodiversity in South Africa.⁶⁷¹ High habitat loss has been recorded in areas adjacent to cultivated land.⁶⁷² One study has shown that crop cultivation accounts for over 50 percent of the country's negative impact on biodiversity.⁶⁷³ In addition, aquatic ecosystems are adversely impacted by water abstraction for agriculture and the flow of pesticides and fertilisers that impact soil water quality.⁶⁷⁴

High utilisation of agrochemicals. South Africa is the largest agrochemical user in Sub-Saharan Africa. These chemicals have long-lasting effects on the hormones of non-target species, particularly their endocrine system, which adversely affects reproductive and sexual development (including in humans).⁶⁷⁵ Although some of these chemicals have been banned for years, they are still detected in South Africa's watercourses and wildlife.⁶⁷⁶ Additional causes of biodiversity loss (detailed elsewhere in this policy) include invasive species,^{677,678} water resource mismanagement,^{679,680} pollution of water and air,⁶⁸¹ poaching,^{682,683} and climate change.⁶⁸⁴

Environmental Impact Assessment (EIA) protocols need to be significantly improved. It makes provisions for developments to maximise positive effects on basic human health, well-being and livelihoods, and avoiding inappropriate trade-offs.⁶⁸⁵ However, these provisions are not well-defined: there are no standard baselines for harmful industries (e.g. mining) nor clear processes for measuring and monitoring the impact of unsustainable developments.⁶⁸⁶ The protocols are often not followed, and human health and ecological preservation are not considered in practice, as seen in the new mining developments around Hluhluwe-Imfolozi Park.⁶⁸⁷

3. Limited knowledge

Knowledge gaps relating to biodiversity loss impact our ability to respond to the problem appropriately. There is a lack of data required to properly quantify the decline and/or loss of species and ecosystem types and the impact on people and ecosystems.^{688,689} Even where data is available, decision-makers often lack an understanding of potential solutions and the capacity to use existing policy tools, implement solutions, or enforce legislation effectively.^{690,691} There is poorly quantified data on the impacts of invasive species on biodiversity^{692,693} and interactions between climate change and other biodiversity loss drivers (including urban development, farming, fires, and deforestation).⁶⁹⁴ This lack of data is concerning, considering that understanding climate change impacts, particularly at a site-specific level,⁶⁹⁵ is essential for developing plans to address them.⁶⁹⁶

4. Insufficient funding

Local funding for biodiversity conservation is woefully low. In 2021, less than 1 percent (R17.8 billion) of government spending was allocated towards the biodiversity sector,⁶⁹⁷ and government conservation organisations reported substantial budget cuts. For example, South African National Parks (SANParks) reported a funding shortfall of R233 million in 2021/22, even after implementing cost-cutting measures.⁶⁹⁸

DA Policy Recommendations for Protecting South Africa's Rich Biodiversity

One of the ways to slow and prevent biodiversity loss is through combating habitat degradation by using land-use planning and regulatory tools to their full potential.⁶⁹⁹ The DA will work to improve the maintenance of existing and new protected biodiversity areas by:

- **Improving the functioning of existing protected areas to improve their conservation and tourism potential.** This will be achieved by:
 - **Implementing and updating new and adaptive management plans.** These plans will allow for adjustment based on variations in pressures, biodiversity, and the emergence of new threats. Such adaptive management plans will be particularly critical as the ranges of threatened species change under climate change, and adjustments to protected area networks will need to be made.⁷⁰⁰ This will work in tandem with a focus on increasing our knowledge base, and these plans can be updated accordingly as we learn more.
 - **Repairing the infrastructure surrounding protected areas.** This involves maintaining and repairing buildings, fences, and roads in reserves.⁷⁰¹
 - **Establishing strategic collaborations between NGOs, the private sector or research institutions, and protected areas/provincial reserves.** With the support of external partners, many reserves could achieve their conservation mandates more effectively. Where it is deemed mutually beneficial, private sector partners can take over the management of provincial reserves in a joint management scheme or facilitate the management of reserves by communities. This provides protected areas with the resources the Government may need to allocate elsewhere.⁷⁰²
 - **Mitigating threats to species and biodiversity inside existing protected areas** through improved policing (as an extension of the DA's [Crime Prevention Strategy](#)) and community engagement. Threats can include poaching, over-extraction, and land uses such as grazing. In the Torre Guaceto Marine Protected Area (MPA) in Italy, the implementation of greater MPA enforcement and greater fisherman engagement (together with the use of a management plan and the promotion of sustainable fishing) led to a dramatic increase in the commitment of local fishermen to environmental issues and a subsequent drop in the number of fines for illegal fishing to nearly zero.⁷⁰³

Case Study

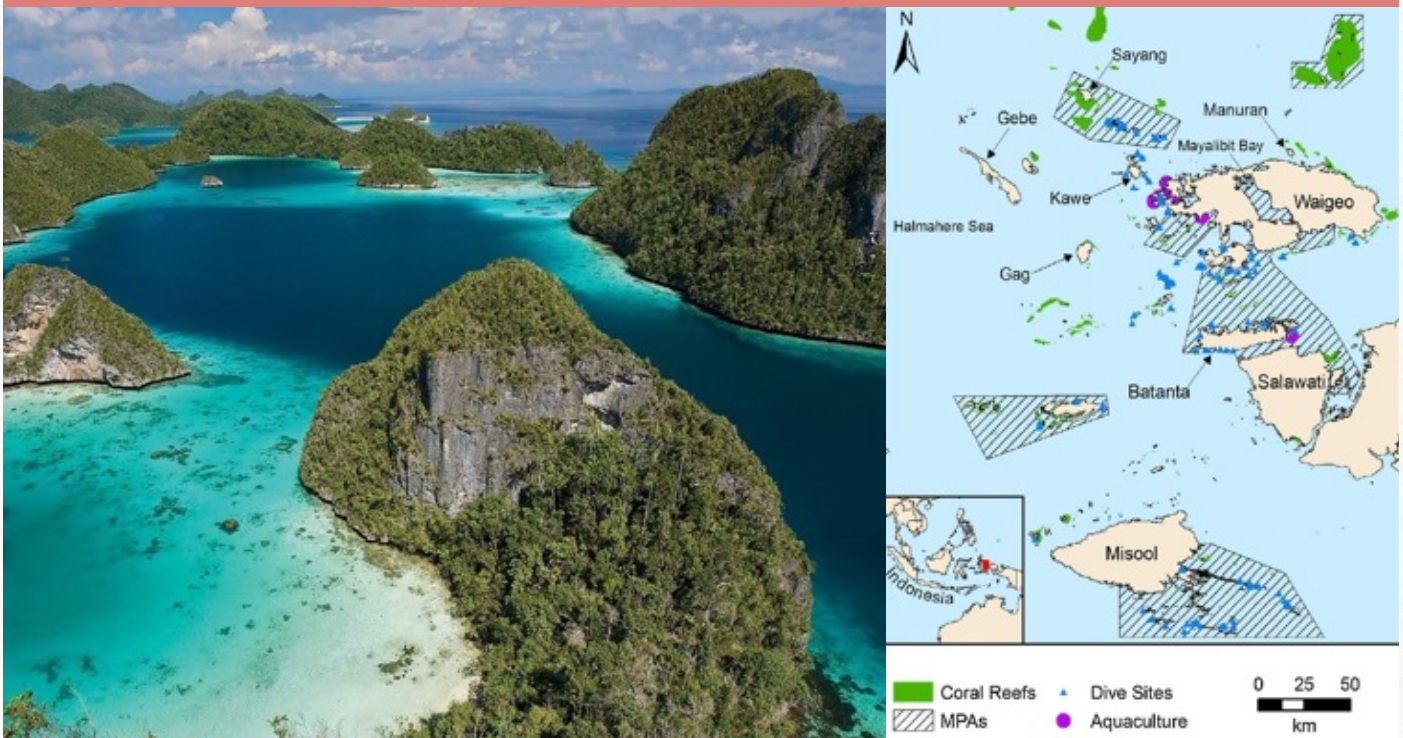
Raja Ampat Islands, Indonesia

The Raja Ampat Islands ecoregion, located in eastern Indonesia, is highly diverse, supporting more fish and corals than anywhere else on the planet. However, pressures related to unsustainable resource use, development, and human population growth threatened the region's biodiversity and the communities dependent on it.

In the early 2000s, conservation NGOs Conservation International (CI) and The Nature Conservancy (TNC) conducted ecological and social assessments in Raja Ampat. They found widespread community concern regarding marine resources and proposed the development of a Marine Protected Area (MPA) as a solution.

Prior to NGO engagement, the National Government had established one MPA, although it lacked community engagement. CI and TNC worked with communities to develop a network of community-run, bottom-up MPAs. From 2007 to 2008, six MPAs were developed and were successful in improving conservation in the region.⁷⁰⁴

Sources: *Tim Laman and Rude et al., 2015*



- **Establishing new protected areas and expanding the existing network of protected areas.** This will be achieved by:
 - **Accelerating the establishment of new formally protected areas in areas** of high biodiversity and conservation concern by prioritising these areas for protection measures. Threatened and/or under-protected ecosystem types and areas with high numbers of endemic species will also be prioritised for protection.⁷⁰⁵ Recently, the DA-led DFFE signed Offshore Ship-To-Ship Transfer Regulations.⁷⁰⁶ The regulations are designed to prevent pollution, protect coastal ecosystems, minimise and mitigate the impacts of a spill in the unlikely event that one occurs and secure the survival of the African Penguin, together with other marine species and ecosystems in the rich biodiverse Algoa Bay and along South Africa's coastline in general.

- **Expanding the network of formally protected areas and semi-protected areas, with a focus on creating connections and ecological corridors^{xxxii}** between nationally protected areas and privately owned land, urban areas and/or agricultural areas.⁷⁰⁷ This will be achieved by partnering and working closely with conservationists, national parks, municipalities, and private landowners to identify areas suitable for establishing corridors. In cases where full protection is not possible, land-sharing conservation^{xxxiii} has been shown to offer at least a partial buffer against habitat fragmentation and degradation.⁷⁰⁸
- **Encouraging conservation through promoting private wildlife ranches over traditional livestock farming.** Privately-owned wildlife ranches cover 14 to 17 percent of South Africa's area.⁷⁰⁹ While not formally protected areas, ranches operating under an effective Environmental Management Plan can support significant species richness and provide more income than ranching without private ownership.⁷¹⁰ The DA will increase skills development programmes for managing wildlife and livestock simultaneously, promote wildlife ranching products, and increase the ease of acquiring the licensing to establish wildlife ranches.

The DA will ensure that local communities benefit socio-economically and are actively involved in reserves by:

- **Increasing the number of biodiversity stewardship programmes through training and the development of communication networks.^{xxxiii}** These are highly cost-effective methods of expanding the protected area network.⁷¹¹ The DA will create accredited training programs to develop technical and non-technical skills useful in running stewardships and create and maintain social networks for biodiversity stewards to strengthen the community of practice.⁷¹²
- **Tackling understaffing in protected areas** by encouraging localised recruitment processes, creating internships for residents within proximal protected areas, and training existing staff members for career advancement opportunities. This will ensure a greater inflow of graduates into conservation jobs and that current staff members are better equipped to run protected areas.⁷¹³

The DA will ensure sustainable development by:

- **Creating and maintaining more green/blue corridors and green spaces in urban areas.** Green corridors and spaces include private gardens, public parks or restoration areas, community gardens, and green roofs.^{xxxiv} They allow species to survive and move within urban spaces and make urban spaces more penetrable to species from nearby reserves.^{714,715} Green spaces also provide ecosystem services and recreational areas to urban citizens.⁷¹⁶
- **Reviewing existing regulations to take** into consideration the environmental impacts of development. The DA recognises the balance between suitable regulations of potentially harmful activities and impact assessment protocols, cutting unnecessary red tape while simultaneously strengthening the protection of the environment.
- **Encouraging responsible, sustainable hunting.** Sustainable hunting is the selective use of renewable resources and is an effective form of conserving wilderness habitats. For people who are living within the surrounding wildlife areas, to conserve wildlife, they need a financial incentive to do so. If wildlife does not contribute to local communities, people will resort to other forms of land use, such as agriculture, which harms wild animals.⁷¹⁷

xxxii Ecological corridors are parts of the landscape that allow species to move between areas of intact, protected habitat.

xxxiii Land sharing is a conservation strategy that combines farming with biodiversity conservation on the same land.

xxxiv Biodiversity stewardship is an approach to securing land for biodiversity conservation by entering into agreements with private landowners, and/or communities in biodiversity-rich areas.

xxxv A green roof is the roof of a building that is partially or fully covered by vegetation. Green roofs can incorporate plants that support birds, insects, and fungi.

Case Study

Medellín, Colombia

Medellín, a city in Colombia, started its “green corridors” programme in 2016 due to concerns about rising heat and air pollution in the city. Now composed of more than 30 green corridors, it connects road verges, vertical gardens, streams, parks, and nearby hills. The project initially involved planting approximately 120 000 plants and 12 500 trees, with 2.5 million smaller plants and 880 000 trees planted by 2021. The project has significantly reduced heat as temperatures have fallen by an average of 2 degrees Celsius in the green corridors, and the project shows promise for improving air quality. Furthermore, it has brought wildlife back into the city. Birds, lizards, frogs, and bats have all been observed in the corridors, some of which had not been seen in the city for years.⁷¹⁸

Source: *Getty images*



- **Improving the norms and standards for biodiversity reporting within extractive industries.** Companies will be expected to provide detailed accounts of their biodiversity impact and the issues surrounding biodiversity in their sectors. They will also need to report on future biodiversity targets that they set.^{719,720}
- **Supporting sustainable intensification of agriculture** that will not negatively impact soil health, native pollinators, and water resources. The DA will encourage biodiversity protection measures such as the use of buffer habitat between agriculture and vital water resources, the retention of a portion of natural habitat on newly established farms, and the use of mosaic landscapes^{xxxv} to conserve native species. This will be done while providing ecosystem benefits to farmers.⁷²¹
- **Improving the legal framework within the EIA protocols for governing environmental assessment and management.** The DFFE can only appeal against unsustainable developments, but not prevent them. EIA processes and protocols will be reviewed to ensure better regulation of extractive industries and quality assessments of potential harm and economic trade-offs.

xxxv Mosaic landscapes include agriculture fields interspersed by patches of natural habitat. These natural habitats enhance native biodiversity, which can, in turn, provide ecosystem services to agriculture.

The DA will aim to expand scientific research into biodiversity monitoring and include local communities by:

- **Supporting the monitoring of the biodiversity of understudied ecosystem types.** These include wetlands, rivers, insects, aquatic species, and invasive alien species. This will be achieved by focusing existing government-funded environmental research grants towards understudied ecosystem types and species. Ecosystem monitoring programs should aim to represent ecosystem types across the country and over time. Species population monitoring will improve the understanding of their role in ecosystems, benefits or challenges, and the drivers affecting their decline or growth. This will help conservationists to develop targeted plans to protect them.⁷²²
- **Including local communities in the mapping, measuring, and monitoring of biodiversity.** This has the benefit of economic opportunities, capacity building, and raising awareness of conservation issues for community members.⁷²³
- **Working with local communities to implement community-based conservation (CBC).** This will provide socio-economic benefits to and address the conservation-related challenges faced by communities living adjacent to or in reserves or areas of conservation concern. The DA will establish co-management partnerships between communities and protected areas, and the inclusion of community members from all backgrounds, genders, and ages at all levels of decision-making and all stages of CBC projects. Each CBC initiative will be context-specific and aim to cater to the specific needs and norms of the community.⁷²⁴
- **Improving the capacity of communities to lead and manage** themselves and their projects through education on biodiversity conservation and training in protected area management. An analysis of 136 projects suggests that capacity building in local communities is critical to the success of CBC projects and may help to combat elite capture, ensuring that project funds are not funnelled to a handful of local leaders.⁷²⁵ Communities benefit from conservation, for example, through ecotourism, natural products, and supply chain niches.⁷²⁶

Case Study Belize

Community-based conservation measures have been successful in benefiting conservation and local communities globally.

In Belize, the community baboon sanctuary, designed to protect black howler monkeys, was created in 1985. Its conservation strategy involved educational awareness programs, locally controlled eco-tourism, and local government support. Additionally, a sanctuary development plan was crafted, which involved property and vegetation mapping, species population monitoring and landowner engagement. In 1988, over 120 landowners signed voluntary pledges to manage their land for black howler monkey protection, and by 2017, the species population had increased to 3500 from 800 in 1985.

Today, the sanctuary is run by a local Women's Conservation Group and generates revenue through increased tourism and expansion of small businesses.⁷²⁷



The Management of Invasive Species

Invasive species are responsible for 25 percent of all biodiversity loss in South Africa, making them the third most significant impact on South Africa's biodiversity loss after cultivation and habitat degradation.⁷²⁸ Invasive trees and shrubs reduce surface water resources by 3 to 5 percent, while invasive animals can act as predators. They outcompete native species for resources.⁷²⁹

South Africa has a long history of introducing alien species, necessitating invasive species management. From the mid-19th century onwards, people deliberately introduced a wide range of alien species for various purposes, such as dune stabilisation and timber. The introduction of alien trees is particularly noteworthy, as it has led to South Africa being described as the "tree invasion capital of the world."⁷³⁰ It is estimated that 3511 alien taxa^{xxxvi} are currently present in South Africa.⁷³¹ **This figure is growing:** approximately three new alien species are introduced annually, with 32 new species introduced between 2013 and 2022.⁷³²

Between 1960 and 2023, **the reported cost of invasion-caused damages amounted to R52.7 billion**, with R9.6 billion spent on management alone.⁷³³ However, cost estimates might have been much higher (R195.2 billion in damages, R231.8 billion for management) as independent stakeholders and other government agencies also spend on invasive control.⁷³⁴ The cumulative effect means invasions have a substantial adverse effect on the economy.

The primary challenges South Africa faces regarding invasive species are 1) control methods that have proven to be ineffective on a national scale and 2) inadequate resources.

1. Poor management, prevention, and control of invasive species

A white paper on 'The Conservation and Sustainable Use of South Africa's Biodiversity' was published in June 2023, which addresses biological invasions. Additionally, the Working for Water (WfW) programme, established within the DFFE, manages projects aimed at controlling invasive alien plants. However, according to SANBI's 2023 report, it is not sufficiently comprehensive and only addresses parts of the problem. While a draft national policy on biological invasions is under development, it has not yet been published for public comment.⁷³⁵ There are still numerous hurdles to effectively preventing, managing, and controlling invasive species, which include the following:

Planning coverage^{xxxvii} is low, and plans do not always overlap with control operations. Currently, 14.7 percent of the estimated invaded land area is known to have management plans in place. These plans do not overlap with target areas managed by WfW, so large areas where control operations are currently taking place still lack formal management plans.⁷³⁶

WfW management plans are not targeted at relevant areas. Overall, WfW control operations have reached 14.2 percent of South Africa's invaded area. However, over a quarter of these operations (28 percent) are not within priority areas (strategic water source areas, protected areas and threatened ecosystems^{xxxviii}), leaving only 4 percent of the invaded area covered by WfW. This means that funds and efforts are being directed towards areas where they will not have a marked impact on conserving biodiversity or water resources.⁷³⁷

xxxvi A taxon (plural taxa) is a scientific group of one or more organisms grouped and ranked based on a set of characteristics. For example, a species is a taxon.

xxxvii Planning coverage is the area with a management plan in place expressed as a percentage of the area that needs to be managed (i.e., is invaded to some degree).

xxxviii Some sites fall into more than one of these categories.

The management plans apply to too few species and are poorly implemented. Only 22 species (2.8 percent of listed alien taxa) have management plans, and SANBI considers only 13 of the 22 plans adequate. In the areas that are targeted correctly, control effectiveness is hindered by unclear goals. Almost all alien plant control projects in South Africa hold the implicit goal of reaching a ‘maintenance level’ of alien density (a certain number of alien species per area, below which is acceptable). This goal remains vague and is seldom stated as a desired final number.⁷³⁸ Management of biological invasions traditionally focuses on state-led initiatives, with little emphasis on or coordination with volunteer groups. A 2021 study exploring the contributions of volunteer groups to the management of invasive alien plants suggested a need for better coordination between volunteer groups and authorities to ensure long-term success.⁷³⁹

There is inadequate action to reduce accidental or illegal introductions of invasive species. Currently, 39 of the 44 pathways of entry^{xxxix} are managed to some extent. However, priority pathways have yet to be identified, and no formal plans have been developed to control species’ introduction into the country.⁷⁴⁰ This means that accidental and illegal introductions remain underregulated. The new Border Management Authority has committed to improving the prevention of illegal or accidental alien introductions, and it remains to be seen how effective their operations will be. Finally, there is inadequate action to reduce the spread of invasives. Preventing the spread of existing alien species requires a greater focus on tracking and managing species movements than is currently given. The Southern African Plant Invaders Atlas was last updated in 2020, and significant gaps remain in our knowledge of the presence and distribution of species that are not the focus of specific atlas projects.

2. Lack of resources

The government spent only R500 million annually managing invasives between 2020 and 2023.⁷⁴¹ This is a significant decrease from previous years, with over R1 billion spent annually between 2012 and 2019.⁷⁴² In 2015, WfW officials estimated a 6-fold increase in funding was required to achieve realistic control targets for the programme.⁷⁴³ A 2022 study estimated that seven times more funding is needed to cover the invaded area.⁷⁴⁴

Private landowners are held responsible for eradicating or controlling invasive species on their land under contracts and agreements with WfW, even if they are not responsible for introducing those species to the area in the first place.^{745,746} Landowners often cannot afford the substantial investment required to clear invasives and maintain cleared areas.⁷⁴⁷

Invasive alien management programmes must balance multiple goals. These goals include creating jobs, providing training and empowerment opportunities, and conserving biodiversity, water and/or rangeland. Without sufficient resources, projects are often selected to meet only a few (or one) of these goals. As a result, the criteria for measuring success are different, making it difficult to prioritise projects.⁷⁴⁸

xxxix Pathways are the ways in which aliens are introduced, either accidentally or purposefully, into the country. Alien species can be introduced as released or escaped commodities, as contaminants (e.g., parasites or seeds), stowaways, or spread naturally unaided or through corridors.

DA Policy Recommendations for Dealing with Invasive Alien Species

The DA is committed to reducing the number and preventing the spread of invasive alien species. The key issues to address are management effectiveness, control effectiveness, funding problems, and balancing the needs of communities.

The DA will improve planning coverage and the effectiveness of plans by:

- **Reducing illegal introductions and subsequent spread of alien species** by:
 - **Identifying and managing pathways facilitating the spread of aliens within the country.** A framework proposed by the CBD⁷⁴⁹ has been set as a global standard, and SANBI is currently developing and testing a framework to meet South Africa's localised needs. Additionally, the DA aims to clarify the importance of biosecurity for different species by developing impact assessments for more continental and offshore alien species. This will allow officials to prioritise detection efforts for high-impact alien species.⁷⁵⁰
 - **Increasing search efforts for alien species on pathways designated as “major prominence”** and training border officials to detect and identify alien species.
 - **Supporting the detection and improvement of biosecurity gaps on South Africa's offshore islands**, which are havens for native wildlife,⁷⁵¹ will also reduce the illegal spread of species.
- **Ensuring that all organs of state and conservation agencies prepare and adopt management plans.** This has been a requirement under the alien species regulations since 2014. However, very few plans have been prepared or adopted to date, primarily due to funding shortages and a lack of monitoring of the extent of invasions.⁷⁵² At a municipal level, biological invasive plans should focus on priority control areas that fall within municipalities. This will help municipalities streamline the process of tackling invasions by encouraging management buy-in, clarifying control objectives, ensuring that municipalities focus on species and objectives that are most relevant to their contexts.⁷⁵³ Tools and templates will be made available to assist municipalities with writing management plans.
- **Improving assessment of the effectiveness of species and site treatment operations.** Control operations will be assessed regarding their progress towards specific, measurable targets. This will involve establishing a baseline invasion level and subsequent routine collection of data on the status of species and sites in the following years to determine progress towards a designated goal.⁷⁵⁴
- **Facilitating public collaboration.** Community engagement is key for both the successful prevention and monitoring of invasiveness and for helping locals reap the socio-economic benefits of improved biodiversity. This can be achieved through greater education programmes, supporting volunteer groups⁷⁵⁵ with tools and training,⁷⁵⁶ and encouraging private landowners to become biodiversity stewards through education, training and financial benefits.⁷⁵⁷

The DA will improve control measures by:

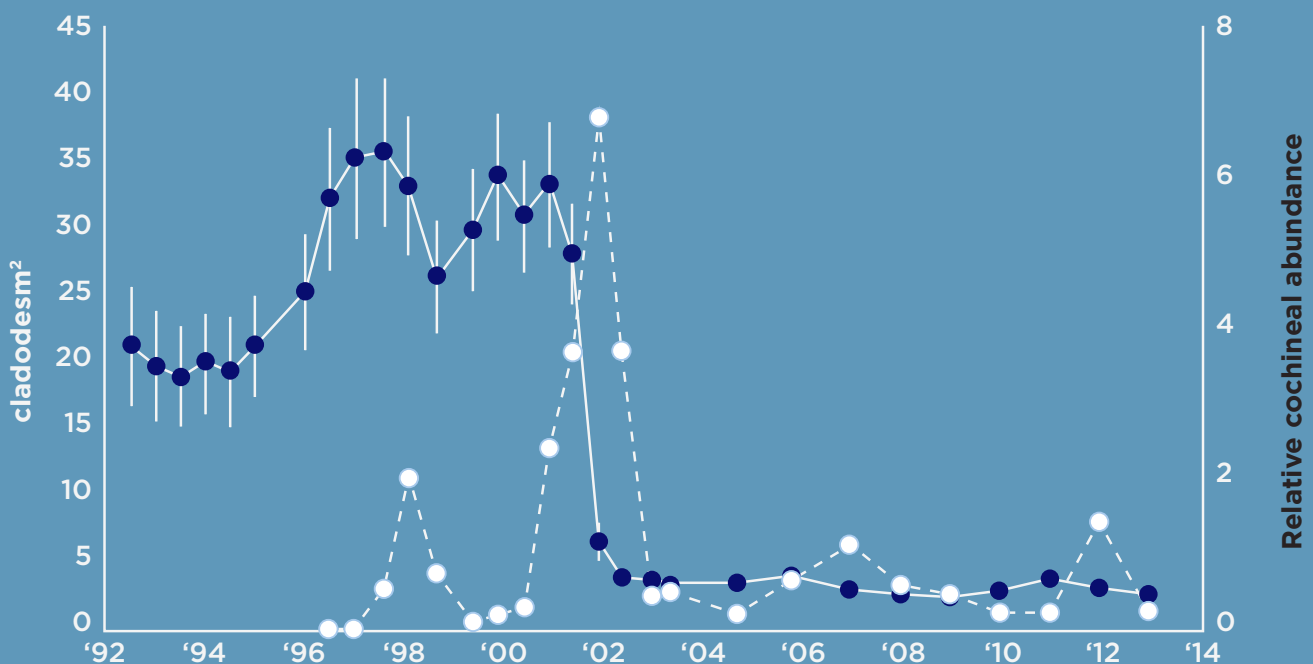
- **Supporting the continued use of, and further investigation into, biological control agents** for large-scale control of alien species. Biological control has proven to be a safe, sustainable, and cost-effective solution to alien invasions.⁷⁵⁸ The increased use of biological control will allow manual control efforts to focus on species without biological control agents.

Case Study

Biological control success in South Africa

There are several biological control success stories in South Africa. One example is the control of the invasive cactus Australian Pest Pear in the Kruger National Park. By the turn of the century, approximately 60 000 hectares of the park were infested. An intensive herbicide control programme failed to control the cactus sufficiently, and biological control was adopted as a control measure in 1997. A cochineal insect that kills cactus pads (or cladodes) and the plants themselves was released from 1997 onwards. This resulted in a rapid decline in the density of cactus plants (Figure 16), and the species is now permanently controlled below an acceptable threshold.⁷⁵⁹

Figure 17: Density of Australian Pest Pear pads (cladodes) and relative abundance of the biological control agent between 1992 and 2014⁷⁶⁰



Blue circles represent the density of Australian Pest Pear pads/cladodes per square meter. White circles represent the relative abundance of the biological control (a cochineal insect) released from 1997 onwards. As the abundance of the biological control agent increased, the density of Australian Pest Pears decreased.

The DA will tackle the insufficient resources for invasive alien control by:

- **Reallocating funding** from projects in low-priority areas to projects in high-priority areas. About 72 percent of funding is directed towards priority areas (including Strategic Water Source Areas, protected areas, and biodiversity hotspots).⁷⁶¹ However, this figure can further be improved as projects are concentrated in low-priority areas.⁷⁶²
- **Raising funds from the private sector** by replicating NGO funding models. For example, the Greater Cape Town Water Fund, coordinated by the Nature Conservancy, raised R182 million in funding from corporate sponsors, philanthropic individuals and foundations, and the City of Cape Town (CoCT).^{763,764}

- **Using alien species to generate funds, which can be redistributed into efforts to increase removal rates.** For example, rooikrans are an aggressive alien species which outcompetes native vegetation and is highly flammable. Removed rooikrans can be used for firewood, and their removal for that purpose can also result in economic benefits.⁷⁶⁵

The DA will reduce conflicts of interest by:

- **Facilitating open dialogue between researchers, managers, and affected communities** on a case-by-case basis through forums, workshops and the distribution of the relevant literature to determine whether the harms are more significant than the benefits of alien presence and to develop solutions to conflict species management that consider the trade-off of impacts and benefits.⁷⁶⁶ For example, a study showed that in the Vhembe Reserve, most rural households were aware of the plant *Psidium guajava* (common guava), and its costs and benefits. However, they considered the benefits to outweigh the costs, and, as such, most did not implement control measures. This highlights the need to incorporate rural community perceptions into developing management plans to ensure that eradication does not harm communities.⁷⁶⁷



Where We Govern City of Cape Town

Cape Town has faced invasions of German wasps (above) and European Paper Wasps, most recently in 2022

An example of a successful strategy is the CoCT's Invasive Species Strategy, developed in 2008. This has been largely successful in its aims; for example, it developed an education, communication and awareness strategy, funding mechanisms for invasive alien management, and a legal and policy framework for invasive alien management.

The Effects of Poaching and Illegal Hunting on our Wildlife Resources

South Africa suffers from the poaching of several species, with detrimental impacts on biodiversity and the economy. Africa is one of the world's leading suppliers in the illegal wildlife trade, and South Africa acts as both a source and transit country for the trafficking of illegal wildlife products.⁷⁶⁸ Popular illegal products from South Africa include rhino horn, abalone, pangolin, succulents, and elephant ivory, which is funnelled through South Africa from other countries to East Asia.⁷⁶⁹ Poverty, joblessness and organised crime have all been considered as causes of poaching.⁷⁷⁰

South Africa holds approximately 68 percent of the African rhino population, and many of them are poached. In 2023, 499 rhinos were poached in South Africa. This was a 12 percent increase from 2022.⁷⁷¹ This number declined to 420 in 2024, but poaching numbers still increased in the Kruger National Park.⁷⁷²

South Africa is a hotspot for abalone poaching. Historically, South Africa was considered one of the major global abalone-producing countries, but illegal poaching has led to severe declines in abalone numbers since the 1990s.⁷⁷³ The illicit abalone trade is worth an estimated \$60 million to \$120 million annually.⁷⁷⁴

The illegal plant trade in South Africa primarily targets succulent species. Between 2020 and 2022, SANBI reported that plant material confiscated from plant traffickers by law enforcement agencies had increased by over 250 percent annually,⁷⁷⁵ with estimates of over 1.5 million plants removed from the wild between 2020 and 2022. This illegal practice is driving some species of succulents to extinction at a rapid rate.

To effectively address poaching, two key causes must be addressed: 1) poverty and economic factors underlying the recruitment of poaching “foot soldiers” and 2) corruption within law enforcement agencies.

1. Poverty and economic factors underlying poaching

Low education levels, high poverty, and unemployment may drive individuals to seek income through poaching. For example, a 2020 study conducted by TRAFFIC found that, out of 73 offenders interviewed, 83 percent did not reach or complete secondary school. Most respondents (66 percent) only had enough income to cover the day-to-day basics of food, water, and shelter, 36 percent were informally employed, and 38 percent were unemployed.

Income generation and opportunism (meeting a person involved in the illegal wildlife trade who presented them with the opportunity to receive an economic benefit) were the primary factors behind involvement in the illegal wildlife trade. A skewed perception of the legal risks of poaching, its normalisation, the high value and demand for the poached commodity, and a lack of viable economic alternatives also played a role in influencing respondents to participate in the illegal wildlife trade.⁷⁷⁷

2. Pervasive Corruption

Wide-ranging corruption allegations are linked to many government agencies tasked with reducing poaching, including conservation agencies. DFFE compliance officers are frequently accused of colluding with poachers. Nine DFFE officials were arrested in 2018 and charged with assisting poaching operations by escorting illegal shipments and selling abalone seized during patrols back to poachers.^{778,779}

In the Kruger National Park, it is estimated that up to 40 percent of law enforcement staff could be aiding poaching networks or involved in corrupt or criminal activities. Some SANParks officials estimate that this figure could even be as high as 70 percent in some areas.^{780,781}

Several other factors contribute to our inability to deal effectively with poaching:

- **An unsustainable resource requirement.** An example is the ‘Keep Poachers out of the Sea’ operation in Gaansbaai, which was reportedly successful in shutting down most of the poaching in the area. Unfortunately, the operation proved costly and could not be scaled up across the entire coastline. Police capacity in Gaansbaai was insufficient to maintain the operation in a wide enough area; without sufficient manpower, the operation displaced poachers elsewhere along the coast, and poaching continued.⁷⁸²
- **Low levels of interception persist despite various policing efforts to curb poaching.** SANBI suspects that law officials intercept less than 25 percent of the illegal plant trade.⁷⁸³ For abalone poaching, poachers adapt their routines to avoid police interception by transporting divers and vehicles on different routes.⁷⁸⁴
- **Conviction rates are high, but total arrests remain low and do not apply to people higher up in criminal organisations.** In 2023, 35 of 36 verdicts in rhino poaching and trafficking cases were guilty verdicts, and 45 poachers and traffickers were convicted - a rate of 97 percent. However, this is still marginal given that in the same year, poaching spiked, with 499 rhinos having been killed.⁷⁸⁵ Continued poaching, despite legal consequences, has been attributed to the fact that it is often ‘foot-soldiers’ who are sentenced and **imprisoned for poaching rather than the masterminds behind poaching syndicates.**⁷⁸⁶

The DA Policy Recommendations to Reduce Poaching and Limit the Illegal Wildlife Trade

To address the economic factors underlying poaching, the DA will:

- Implement its comprehensive [Economic Policy](#) and [Economic Justice Policy](#) to generate growth, increase employment, and reduce poverty. Poaching operations will find fewer recruits if individuals do not think it is the only option to access economic opportunity. In particular, the DA will focus on creating a conducive environment for job creation linked to the protection of species, like tourism and law enforcement, in communities susceptible to poaching.

The DA will tackle corruption by implementing its Crime Prevention and Criminal Justice Policy. This includes, but is not limited to, the following:

- **Promote merit-based appointments instead of cadre deployment** within the leadership of SAPS, the Independent Police Investigation Directorate (IPID), and wildlife reserve law enforcement staff.
- **Take a strong stance against corruption at all levels**, starting from the top down, by empowering and strengthening IPID, safeguarding it from political interference, and ensuring it is an effective channel for public complaints regarding the SAPS. It is imperative to disrupt deeply embedded and well-resourced crime syndicates.

Decentralising policing across South Africa will improve the police force’s capacity to tackle wildlife crime. Significant improvements in law enforcement are required to investigate and prosecute wildlife trafficking effectively.⁷⁸⁷ For example, research has identified Johannesburg as a major trafficking hub and Durban as a key exit point for wildlife contraband to be exported overseas.⁷⁸⁸ Decentralising the police service would allow competent provincial and local governments to tailor their policing measures, better preventing internal trafficking and illegal export in their regions.

The DA will improve public compliance with anti-poaching laws by:

- **Educating the public about poached species and the illegal wildlife trade** to foster an understanding of the need for conservation and encourage individuals to report poaching. This will involve using interactive activities and media broadcasts to educate people on the environmental, legal, and personal consequences of poaching.⁷⁸⁹
- **Working to integrate more community-based conservation measures into protected area management** to encourage community involvement in anti-poaching measures. Communities have a greater incentive to detect and report poachers when they have a stake in conservation and benefit from protected areas and sustainable practices.⁷⁹⁰ Community-based interventions in South Africa, such as the all-women Black Mambas Anti-Poaching Unit, work to strengthen community action against the illegal wildlife trade by removing snares.⁷⁹¹ Their presence has significantly reduced poaching incidents and increased community awareness about conservation. In 6 years, they have removed 1471 snares, and overall, 1566 community members have been impacted by the project.⁷⁹²

Additional recommendations the DA will pursue to aid in **the prevention of poaching** include:

- **Strengthening collaboration between multiple government agencies and departments**, such as the South African Police Service (SAPS), the DFFE, and financial agencies, such as the South African Revenue Service (SARS) and the Financial Intelligence Centre (FIC), to coordinate information and efforts across sectors. Investigation into individuals and organisations will include intelligence gathering from already-prosecuted offenders, telecom analysis, and anti-corruption investigations.⁷⁹³ Including SARS will help gather information by tracing financial records to identify key traders in illegal wildlife.⁷⁹⁴
- **Strengthening monitoring and surveillance efforts by incorporating new monitoring technologies and enforcement approaches as they become available.** One example includes the usage of artificial intelligence (AI) in Srepok Wildlife Sanctuary in Cambodia to predict animal movements. Over a thousand snares were removed in a month when AI was used, compared to the average of two to three hundred snares ordinarily removed.⁷⁹⁵
- **Supporting the dehorning of rhinos in national and provincial parks** where poaching of these species has reached unsustainable levels. An effective method for curtailing the poaching of rhinos is to dehorn them.⁷⁹⁶ This involves shaving down their horn in a way that does not harm the rhino or require them to be killed, removing the reason to poach them after.⁷⁹⁷





Case Study Kenya

In Kenya, proactive and reactive operations targeting wildlife crime were undertaken by teams composed of various Kenyan law enforcement agencies. These operations targeted suspected local and foreign perpetrators. Kenya reported successes in profiling, surveillance and interception of illegal wildlife trade, and this collaboration has been extended to cross-cutting cases involving other trafficking crimes in addition to wildlife trafficking.⁷⁹⁸ Indicators of the effectiveness of these efforts include increased conviction rates of wildlife crime from 44 percent in 2014 to 91 percent in 2020,⁷⁹⁹ and a 12 percent increase in the country's elephant population between 2014 (when poaching activity was at its highest) and 2021.⁸⁰⁰

High Levels of Deforestation

South Africa has abundant natural forests, extending over 4.3 percent of the country's land area. However, these are being wiped out at an alarming rate; 13 percent of forest-loss was recorded in 2021.⁸⁰¹ Between 2015 and 2023, South Africa lost 6877 hectares of humid primary forest (Figure 18),⁸⁰² while total tree cover loss from 2015 to 2023 amounted to 562 000 hectares (Figure 19).

Figure 18: Annual primary forest loss between 2015 and 2023⁸⁰³

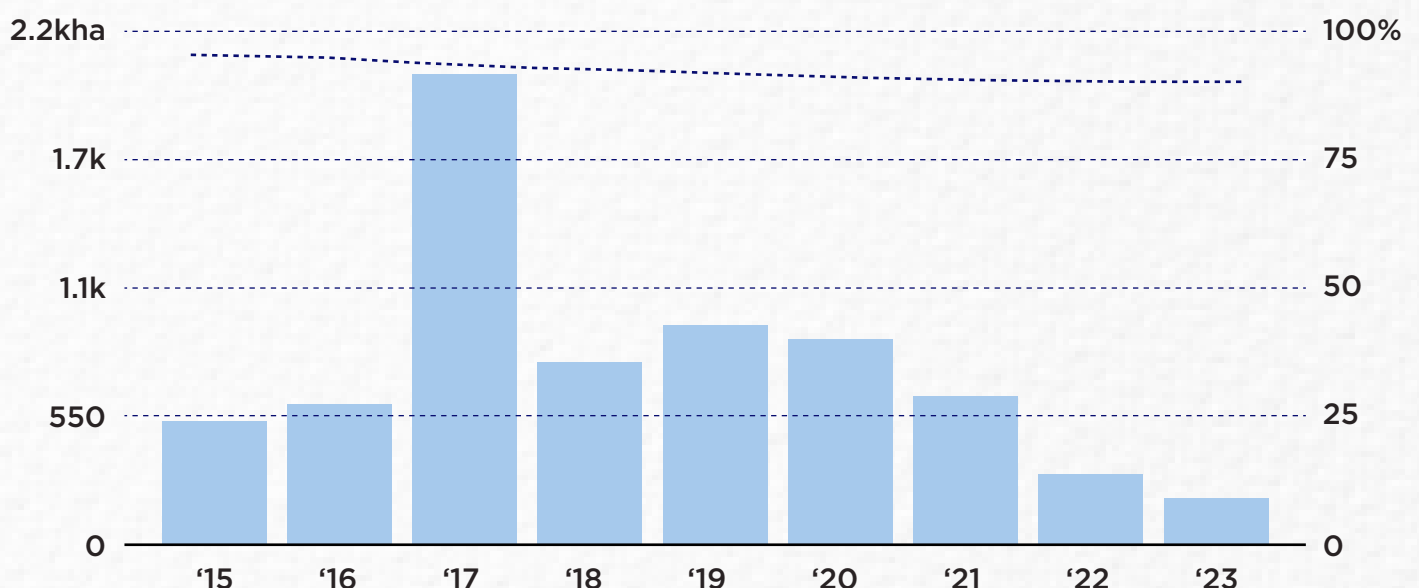
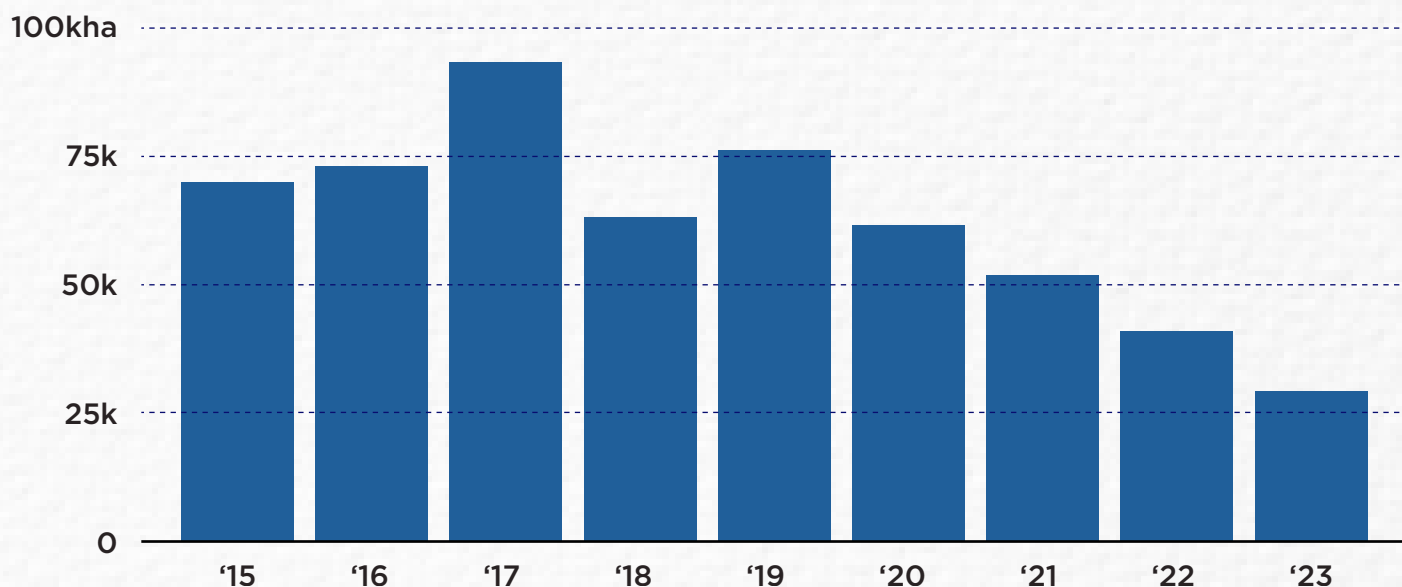


Figure 19: Annual tree cover loss between 2015 and 2023⁸⁰⁴



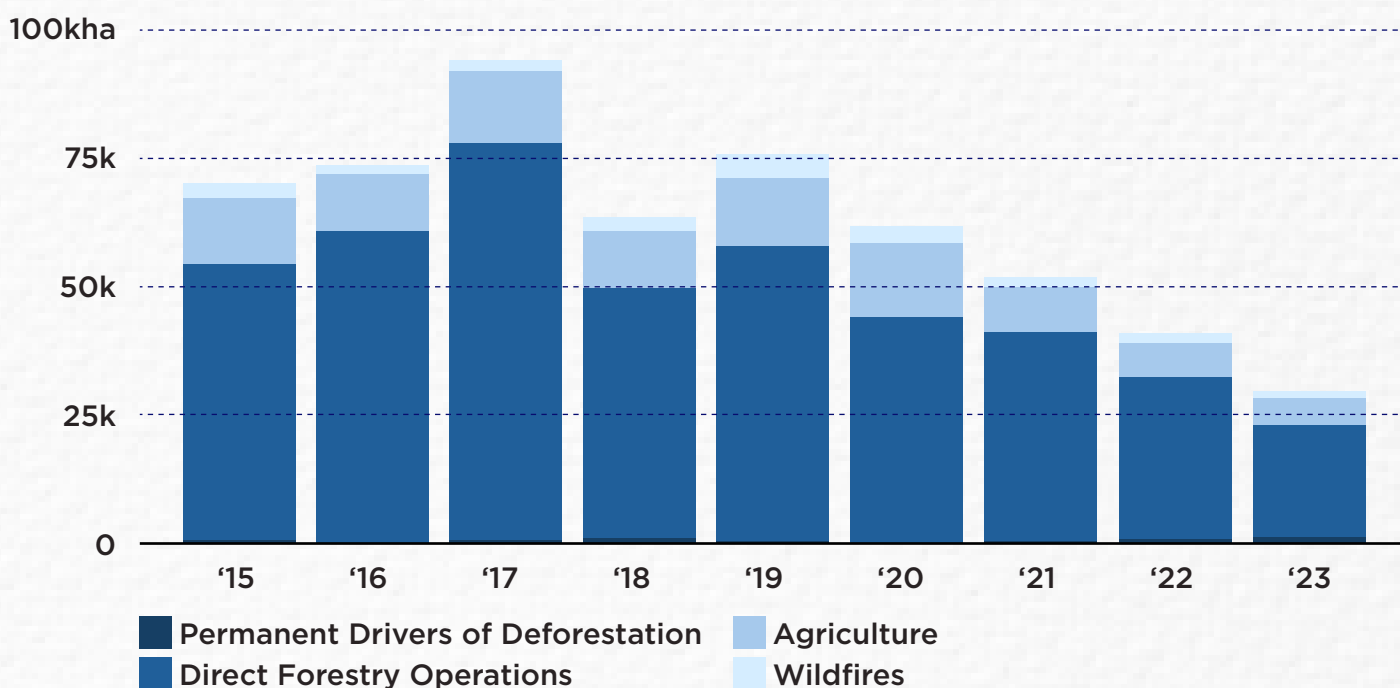
Deforestation is a problem for several reasons:

- **Deforestation hinders South Africa's ability to reduce its already substantial carbon dioxide (CO₂) emissions.** This contributes to global warming, as CO₂ traps heat in the atmosphere.
- **Deforestation disrupts the water cycle.** Trees draw groundwater up through their roots and release it into the atmosphere. With the removal of forests, areas can hold less water, therefore creating a drier climate or exacerbating floods.⁸⁰⁵
- **Deforestation accelerates soil erosion,** causing a loss of fertile topsoil. When deforestation occurs, the soil becomes exposed, making it vulnerable to being blown or washed away.⁸⁰⁶
- **Deforestation causes biodiversity loss by destroying critical habitats.** For example, in Colombia, of 550 forest-dependent bird species analysed, 96.5 percent had lost their habitat to deforestation to some degree.⁸⁰⁷

Dealing with deforestation is made difficult by several challenges:

- **Deforestation lowers the supply of wood available while demand remains the same.** This means the more deforestation there is, the more will be required to sustain increased resource extraction.
- **Aspects of forestry operations are a response to poverty -- the need for wood-as-fuel for energy in low-income households.** The 2021 General Household Survey shows that 89.3 percent of households in South Africa are connected to the electricity grid, although only 77.7 percent use electricity for cooking. Wood is the second greatest source of energy for cooking, used by 7.7 percent of South Africans.⁸⁰⁸ This requires significant amounts of wood to sustain. For example, a study in the Matlwang township in the Northwest found that households use approximately 20kg of wood for cooking and heating per household per day in summer and 35kg per household per day in winter.⁸⁰⁹
- **The main driver of deforestation is direct forestry operations (Figure 20)** activities that deal with harvesting and producing timber, the need for which is partially sourced by those who require wood for fuel. There are other contributing factors: agriculture, wildfires, and permanent drivers of deforestation, such as urbanisation and the removal of forests for permanent agriculture and mining.⁸¹⁰

Figure 20: Annual tree cover loss by driver between 2015 and 2023⁸¹¹



Global Forest Watch, 2023

- **The DFFE missed its tree planting goals in 2021/22 and 2022/23.**⁸¹² The government plans to plant 10 million fruit and indigenous trees by 2026 to make cities, towns, and townships greener. However, by August 2023, only 2.8 million trees had been planted.⁸¹³

The DA Policy Recommendations to Curb Deforestation in South Africa

The DA will utilise three mechanisms to reduce deforestation: 1) Ensuring the protection of existing forests from unsustainable agricultural and forestry practices; 2) Addressing the economic factors driving wood use in households; and 3) Replenishing lost forestland.

The DA will reduce the effect of agriculture and forestry on deforestation by:

- **Working to improve the number of commercial forestry plantations with certification** through tax and government procurement incentives. Currently, forest certification schemes are voluntary, and the DA will incentivise commercial forestry companies which have not yet adopted the certification process to do so by showing procurement preference to certified companies.^{814,815}
- **Certifying small-scale timber growers and family-forestry participants (small-scale farmers)** to ensure they are not left behind in certification.⁸¹⁶ Small-scale timber growers often struggle to cope with the costs of certification and to comply with the management standards set by certification.⁸¹⁷ As such, the DA will work to subsidise the financial cost of certification for small forestry businesses and promote PEFC certification for small-scale timber growers.
- **Introducing a standard methodology by which agricultural and mining companies can measure their impact** on forest environments, regulate greenwashing practices, and improve environmental reporting. This will be achieved by providing clear guidelines to commercial agricultural and mining businesses on how to minimise and offset deforestation during their operations.⁸¹⁸

The DA will reduce the need to use wood for burning by:

- **Promoting and subsidising the use of more efficient woodfire stoves** in areas that rely heavily on wood for energy. Efficient woodfire stoves can significantly reduce the amount of wood used for cooking (slowing deforestation), the time spent collecting wood, and the adverse health effects associated with open fires.⁸¹⁹ Efforts should be concentrated in provinces with the highest proportion of wood used for cooking: Limpopo (31.3 percent of households) and Mpumalanga (17.8 percent of households).⁸²⁰ This would include initiatives such as public-private partnerships for the supply of small gas stoves or the distribution of Wonderbags.⁸²¹

Case Study

The African Stove Company (TASC), South Africa

In South Africa, as of the end of 2023, an organisation called TASC has distributed 745 000 stoves in the Kruger National Park, Canyons Biosphere, and Waterberg regions. They replace recipients' traditional three-stone open fires with Zama Zama stoves: stainless steel stoves with an air duct that allows the stove to burn the smoke produced by burning wood by drawing pre-heated air back into the top of the stove.⁸²² Zama Zama stoves reduce wood fuel use by approximately 70 percent per household. Additionally, the stoves' higher combustion energy reduces smoke by an estimated 50 percent, lowering the incidence of respiratory illness.⁸²³



- **Dealing directly with the economic and infrastructural issues that prevent households from being connected to the electricity grid.** Job creation and poverty alleviation are key to ensuring citizens are less reliant on burning wood for energy. A study conducted in three villages in Limpopo found that variables such as low monthly income and education levels were strong predictors of wood fuel usage. Households with a monthly income below R5000 typically used wood only or a combination of wood and electricity for fuel over electricity only.⁸²⁴ Therefore, the DA will aim to foster greater job creation through proposals outlined in the DA's [Economic Policy](#).

Wildfires

Wildfires are large, destructive fires that burn out of control over a large wild or rural area. They occur regularly in South Africa and often cause significant social, economic, and environmental harm.⁸²⁵

Ecosystems can be arranged into three main groups based on the effects of fire on them. All grassland types, all fynbos types, and two of three savanna types (Moist and Arid Woodland) are fire-dependent. Fires at the proper intervals are critical for regenerating vegetation in these ecosystems and maintaining ecosystem function. For example, in savanna fire-dependent ecosystems, fires can affect the balance between grasses and trees^{826,827} and in fynbos, smoke from fires chemically triggers many plant species to release seeds.⁸²⁸ One savanna ecosystem (Sparse Arid Woodland), Albany Thicket, Nama and Succulent Karoo are fire-independent. They may burn occasionally, but do not require fire to regenerate. Finally, Grassy Nama Karoo and forest ecosystems are fire sensitive. Fire negatively affects these ecosystems and can take many years to recover once burned.⁸²⁹

Effective prevention and suppression of wildfires is crucial to protect the most vulnerable South Africans and the areas in which they live. Rural populations, as well as rural economic assets like plantation forests, grazing pasture, crops, and ecotourism areas, are at the greatest risk.⁸³⁰ Fire-dependent ecosystems occupy approximately 62 percent of South Africa and generally coincide with the greatest rural population densities; 84 percent of settlements are in fire-dependent ecosystems.⁸³¹

In fire-dependent ecosystems, reducing the fuel load (the amount of material that can burn) is critical to reducing fire risk in the boundary between developed land and natural vegetation (the 'wildland-urban' interface (WUI)). Fire-sensitive ecosystems seldom experience fires, but fuel load may need to be reduced occasionally.⁸³²

Several wildfire problems need to be addressed: 1) longer wildfire season; 2) more densely populated areas; 3) alien species which contribute to fire; 4) climate change; and 5) focusing on suppression, not prevention.

1. Wildfire season is getting longer

In most of South Africa, the fire season typically lasts around 22 weeks.⁸³³ **One study estimates that, between 1979 and 2019, the fire season length for much of South Africa has increased by over 40 days,** and the number of days with extreme fire weather has increased by over 20.⁸³⁴ This has been attributed to climate change and, in some parts of the country, reduced rainfall.^{835,836}

2. Rapid population growth.

The increase in persons living in at-risk areas is driving an increase in fire events and their potential for social and ecological harm. **Fires are becoming more frequent due to an increase in human-caused ignitions.**⁸³⁷ Natural events (e.g., rock falls or lightning) account for less than 3 percent of fires. The remaining fires are caused by people.⁸³⁸

3. Alien and non-natural plants in South Africa increase fire intensity

Different plant species provide different amounts of biofuel available for burning. Not all alien or planted species will cause more wildfires, but in South Africa specifically, this is the case. Natural grass and shrublands typically have fuel loads of around 0.3 to 4 tonnes per hectare, while planted or invaded sites have 10 to 25 tonnes of fuel per hectare.⁸³⁹ Invasive species have been found to increase the fuel load of fynbos shrublands by 60 percent.⁸⁴⁰ This worsened the 2017 Knysna wildfire, as more structures were affected in areas with dense, highly flammable alien invasive vegetation.⁸⁴¹

4. Climate change will increase the likelihood and severity of wildfires

As global temperatures continue to rise, the potential for wildfires increases.⁸⁴² A study examining the wildfire on the slopes of Devil's Peak in the City of Cape Town in April 2021 under extreme fire weather conditions (hot, extremely dry, and windy conditions) concluded that such extreme fire weather has become around 90 percent more likely under the 1 degree Celsius increase in temperature since the late nineteenth century.^{843,844}

5. South African wildfire management relies mainly on fire suppression:

Wildfire suppression is largely successful in South Africa. In 2023, in the Western Cape, 85 percent of high-risk wildfires were contained during their initial attack phase (early stages).⁸⁴⁵ Nationally, 100 percent of wildfires tackled by Working on Fire^{xl} were suppressed between 2020 and 2023.⁸⁴⁶

Suppression is costly, and firefighting resources are constantly moved across fire-prone provinces during South Africa's two fire seasons in the north and south of the country.⁸⁴⁷ In the Western Cape alone, Working on Fire crews responded to 36 fires in December 2023 that cost the DFFE R5.3 million.⁸⁴⁸ Suppression activities are further hindered by a lack of coordination between various firefighting services and the resources and capabilities to carry them out.

A focus on suppression can increase the risk of future fires. When fires are stopped before they can burn, more material is available for burning later.⁸⁴⁹ Biofuel will accumulate without preventative measures in place.⁸⁵⁰

The DA's Strategy for Managing Wildfires

Although prevention needs improvement, wildfire suppression in South Africa is effective and mitigates the damage caused by fires. The DA plans to further improve the efficacy of fire suppression by:

- **Coordinating efforts between various firefighting bodies** and encouraging collaboration between them on a provincial and municipal level.⁸⁵¹

xl Working on Fire is an Expanded Public Works Program under the Department of Environmental Affairs which recruits participants from marginalised communities and trains them in fire awareness, prevention and suppression.

Where We Govern Western Cape

In the Western Cape, cooperation between the provincial disaster management centre, the CoCT, and different firefighting agencies (Working on Fire, NCC wildland firefighters, and volunteer firefighters) has led to a more efficient response to wildfires, reducing their damage to infrastructure and the environment.^{852,853} Additionally, the formal Mutual Aid agreement in the Western Cape ensures that Fire Brigade services lend assistance across municipal boundaries if required. This agreement ensures coordination between different agencies, clear command lines, and quick decision-making.⁸⁵⁴

Source: *Ruvan Boshoff, Times Live, 2022*



- **Improving both satellite and terrestrial monitoring and early warning systems to detect fire ignitions before wildfires grow.**⁸⁵⁵ The DA will incorporate new technologies and frameworks into selecting monitoring sites as they become available. For example, one study investigated using a GIS-based computer framework^{xli} for selecting the sites of camera tower wildfire detection systems in a forest in the Southern Cape. This framework had a significantly better detection capability than the camera layouts that technical experts initially proposed.⁸⁵⁶

The DA will, in combination with suppression efforts, work to improve fire **prevention** measures by:

- **Encouraging local governments to reinstate or improve their implementation of prevention and mitigation measures ahead of fire seasons** rather than focusing solely on fire suppression measures to tackle wildfires.⁸⁵⁷ Preventative measures include prescribed burning,^{xlii} manual or mechanical fuel treatment,^{xliii} as well as community-based fire management initiatives such as wildfire education, fire patrols, defensible space planning, and preparedness planning.⁸⁵⁸
- **Mandating that cities maintain firebreaks** at the edges of urban areas to reduce the wildfire risk associated with fuel build-up and create a defensible space for firefighting operations.⁸⁵⁹ This involves increasing the number of prescribed burns for fuel reduction in the WUI,⁸⁶⁰ which is proven to reduce the risk of fires reaching houses and the intensity of fires better than landscape burning.^{xliv} Additionally, burning in the WUI is more cost-effective than landscape burning because of the smaller area that requires burning.⁸⁶¹

xli A GIS (Geographic Information System) is a computer system that analyses and displays geographic data.

xlii Prescribed burning (otherwise known as controlled burning) is the practice of setting planned and controlled fires to maintain the health of an ecosystem, clear land, or reduce available fuel.

xliii Fuel treatment includes burning fuel, and manual or mechanical thinning or removal of fuels (e.g., chopping, pruning, chipping, or mowing).

xliv Landscape burning is prescribed burning in strategic vegetated areas to decrease the size of wildfires by slowing their spread and reducing their intensity. In contrast, interface burning in the WUI is conducted immediately adjacent to residential areas.

- **Creating enforceable provisions that require properties at urban-wildlife interfaces to be fire safe.** At present, there is no mechanism to enforce such measures through building plans or municipal regulations.⁸⁶² Municipalities must be empowered to implement planning regulations along urban-wildland interfaces.
- **Ensuring that all municipalities at high fire risk have up-to-date risk management strategies in place.** This involves routinely updating risk assessments and response strategies for mega-wildfires for municipalities in fire-prone areas.⁸⁶³



Where We Govern City of Cape Town

In 2011, the CoCT was awarded ‘Role Model City’ status by the United Nations Office for Disaster Risk Reduction for its efforts to reduce disaster risk, making it the first South African city to receive this award.⁸⁶⁴ The CoCT and the Western Cape continue to invest in disaster risk reduction and management. In the 2023/24 fire season, the Western Cape invested in four planes, eight helicopters, 2300 firefighters, and R16 million (later increased to R19 million) to tackle wildfires.^{865,866}

- **Establishing a program to facilitate communication and coordination between fire scientists and fire managers.** According to a study of fire prevention and fighting in WUIs, current protocols in South Africa largely derive from training in environmental risks rather than from scientific studies, and there is a lack of communication between fire managers and academics.⁸⁶⁷ This program will be modelled after others, such as the Joint Fire Science Program Fire Science Exchange Network in the US, which is a collaboration between science exchanges across the country designed to connect scientists, fire managers, and policymakers.⁸⁶⁸

Fisheries Management

South Africa’s fisheries sector holds immense potential for sustainable and economically viable growth. Despite the importance of the fishing sectors, they have been neglected and beset with corruption for the last two decades. Several management, legislative, and biodiversity challenges must be addressed to restore our fisheries.

Fishing represents a crucial intersection of several key issues for South Africans. It involves environmental concerns, policy considerations around the informal economic sector, government oversight, and private enterprise. Its GDP contribution is the lowest among South Africa’s key industries, contributing about 2.5 percent of the national GDP since 2000.⁸⁶⁹ However, the sector is still incredibly valuable to society beyond pure GDP. This is especially true in the Western Cape and KwaZulu-Natal.

The value of our fisheries lies in their contribution to food, their potential role in developing small businesses and creating jobs, and in providing an opportunity for South Africa to adhere to its environmental principles in responsibly marshalling our resources.

However, our fishing industry suffers from several problems, which include 1) overfishing; 2) illegal fishing; 3) fishing co-op management and integration; and 4) fishing permit regulations.

1. Overfishing

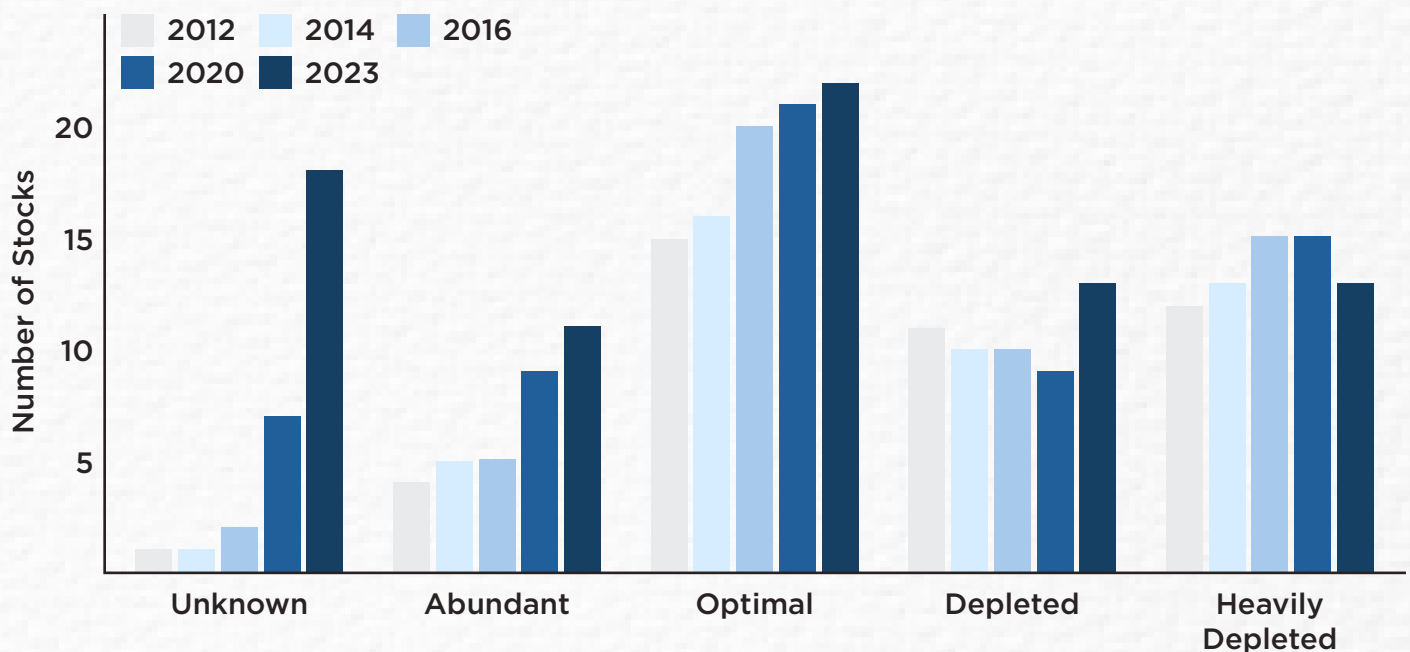
Many fish stocks are overexploited, leading to declining catches and threatening the long-term sustainability of the industry. The causes of this include illegal fishing, poorly enforced or poorly constructed regulations, a complete collapse of the scientific research and monitoring capabilities of the DFFE to inform total allowable catch (TAC) allocations, and unfettered corruption.^{870,871,872,873,874}

As one species becomes depleted, TACs for other species must be increased to sustain fishing activity, leading to their depletion in turn.⁸⁷⁵ The 2023 DFFE report on the *Status of South African Marine Fishery Resources* indicates fish stocks have been recovering over the last decade: the number of stocks listed as “not of concern” has increased from 20 in 2012 to 51 in 2023. However, the number of stocks “of concern”, while a smaller percentage, has increased – from 20 in 2012 to 23 in 2023. This is clear in the chart below (Figure 21): the actual number of heavily depleted stocks has roughly stayed the same since 2012. The biggest change is the growth in unknown stocks. These are automatically placed in the “not of concern” group, making the percentages appear more positive than the reality. The health of fish stocks is therefore not improving sufficiently.⁸⁷⁶

Overfishing has dire consequences, most notably on food security and livelihoods for low-income workers.

Figure 21: Tables from the DFFE 2023 report on South African Marine Fishery Resources on fishery stock status.⁸⁷⁷

	2012	2014	2016	2020	2023
Stocks not of concern	20 (46%)	22 (49%)	27 (51%)	37 (61%)	51 (66%)
Stocks of concern	23 (54%)	23 (51%)	25 (48%)	24 (39%)	26 (34%)
Number of stocks assessed per year	43	45	52	61	77



2. Illegal fishing

There is an entire parallel economy of illegal fishing: poaching, unregulated catch, and illicit market selling.⁸⁷⁸ This occurs at all scales: document forgeries and fake permits (governmental corruption), smuggling, overfishing in violation of TAC regulations, and a lack of policing and monitoring.⁸⁷⁹ Abalone and lobster are particularly vulnerable and severely depleted, two stocks that are crucial for small-scale fisheries. The is of grave economic and biological concern.^{880,881,882,883,884} Highly organised crime syndicates often conduct fisheries crime.⁸⁸⁵ Therefore, enforcement officials are not properly equipped to deal with such offences. Illegal fishing is poorly monitored and even enabled by corruption within the DFFE and SAPS. There are too few inspectors, compliance is low, and corruption often enables illegal fishing.^{886,887}

Marine Protected Areas create a conflict of interest. They block fishing for the minority of law-abiding citizens in certain areas, but in practice, they do not stop illegal fishing at all.⁸⁸⁸ This causes further social discontent as legal fishers feel as if they lose out on fishing opportunities that others illegally access without consequence.

3. The failure of small-scale fishing co-operatives

Co-operatives (co-ops) are worker-run collections of fishers. They collaborate to pool resources and output. In several countries in both the Global North and South, they provide jobs, economic security, show increased collective productivity and lower costs than if the fisheries were all operating independently.⁸⁸⁹ However, in South Africa, two crucial components are missing for fishing co-ops to be effective:

(1) **Sufficient government support in the form of training, equipment, and financing.** Without a suitable starting point, co-ops are likely to fail.

(2) **Regulations needed to assign fishing rights which co-ops can take advantage of.** It is a waste to assign a quota or a species which co-ops lack the capacity to utilise fully. This ultimately leads to wasted TACs.⁸⁹⁰

4. Fishing rights allocations and permits

TAC allocations have several issues: **Firstly, they are often too small. Assigned TACs for both commercial and small-scale vessels are often inadequate to support operating costs and turn a profit.**⁸⁹¹

Secondly, small-scale fisheries and commercial fisheries often receive the same species allocation despite the two sectors primarily desiring different fish. This is caused by an overfishing problem and by illegal fishing depleting primarily small-scale stocks. Without a TAC that can be sustainably allocated to the small-scale sector, they are assigned what should be commercial stock. Therefore, commercial fisheries receive far fewer TAC allocations than they should because they must share species allocations with small-scale fisheries.⁸⁹²

The fishing rights process is incredibly slow, opaque, and lacks a clear set of priorities. The race-based criteria for fishing rights transfer and allocation have opened the door for “tenderpreneurs”^{xlv} and anti-competitive behaviour in the sector. ‘Trickle-down redress’ has not empowered working-class fishers.^{893,894}

Commercial fishery licenses and development have stalled and degraded. Fishing rights were allocated to 22 commercial fisheries in 2005⁸⁹⁵. Of these, only 11 are functioning at a similar capacity today.⁸⁹⁶ The 11 degraded fisheries have catch which is severely depleted (e.g. hake handline, abalone and lobsters⁸⁹⁷). Not one new fishery has been opened since 2004, partially because of a prolonged rights allocation process. Several key catches have not been allocated rights in decades (e.g. abalones, mussels and oysters).⁸⁹⁸ These particularly impact small-scale fisheries, as these species used to be the bulk of their catch. The allocations also worsen illegal fishing, as illegal boats are not prevented from overfishing these species. This illegal fishing further depletes the stock available for any potential future rights allocations.

Finally, fishing rights applications must be done in person.⁸⁹⁹ Only recreational fishers can apply online. This creates considerable financial and logistical hurdles, particularly for small-scale fishers⁹⁰⁰.

The DA’s Policy Recommendations for Improving Fisheries Management

The DA believes that a multi-phase approach is best suited to reinvigorating our fisheries industry.

Corruption is a major problem within the fisheries sector. The DA will tackle corruption by implementing its [Crime Prevention and Criminal Justice Policy plan](#), as well as implementing recommendations similar to the DA’s solutions for corruption in poaching, which include:

- **Promoting merit-based appointments instead of cadre deployment** within the leadership of the DFFE.
- **Establishing effective mechanisms to protect and support whistle-blowers** within the Department who report wrongdoing.
- **Enforcing mandatory lifestyle audits for senior management** and conducting spot checks or “as-needed” audits for public officials who appear to be living beyond their means.

The DA will improve the permit and allocation process by:

- **Strengthening regulation of the fishing sector through revised allocation of fishing rights.** This requires increasing TACs for overfished species such as abalone and lobster to enable stock recovery. The DA believes in crime displacement: as more legal fisheries are allowed to access a quota of species, there will be enhanced community monitoring of illegal activities.⁹⁰¹

xlv Combination of “tender” and “entrepreneur”. These are politically connected businessman who win government tenders from inside contacts to grow personal wealth and misuse funds meant for bettering public services.

- **Reviewing the allocations assigned to commercial and small-scale vessels.** This will ensure that the allocated TACs can be utilised most effectively by fisheries and that different sectors do not receive competing species allocations. As scientific knowledge improves, the TACs will be increasingly tailored to each community.
- **Allowing online applications for all permit types,** not just recreational, as well as simplified application forms.
- **Digitising fisheries management systems.** Much of the process is still paper-based, which creates opportunities for corruption, errors, and document loss. Logbooks, compliance forms, and hard-copy observation books will be progressively digitised.
- **Ensuring authorities support communities that may not have digital access.** There will be a concerted effort to support communities without access to smartphones, computers, or the internet. The policy recommendations for an expansion of digital access are outlined in the DA's [ICT Policy](#). This includes free public wi-fi, removing taxes for smartphones below a certain cost threshold, increased market competitiveness to keep broadband affordable, and targeted support where literacy is a barrier.
- **Investing more in scientific research conducted by the DFFE and fostering collaboration with university research departments.** There will be a review of fishery stock management to implement ecosystem-based fisheries management.^{xlvi} Robust information is required to make informed decisions about productive and environmentally sustainable TAC allocations.

The DA will fight illegal fishing crime by:

- **Increasing collaboration with foreign countries.** For example, South Africa had successful initiatives with Norway to improve legal frameworks and enforcement mechanisms to combat organised fisheries crime. These should be expanded and enforced.⁹⁰²

The DA will grow both the commercial and small-scale fishing sectors by:

- **Prioritising private investment in commercial fisheries** and allocating rights to new commercial ones.
- **Initiating public-private partnerships** between the expanding commercial sector and small-scale fishery co-ops: Most co-ops do not get off the ground without sufficient economic support. Public-private partnerships would allow co-ops to get the support they need while the commercial sector grows. The relationship between co-ops and the commercial sector can be reviewed once the small-scale sector is sufficiently independent.⁹⁰³ Incorporated into this will be fund tracking and auditing success, so that the public can see how the private company is performing

xlvi Ecosystem-based management is a holistic way of managing fisheries and marine resources by taking into account the entire ecosystem of the species being managed. The goal of ecosystem-based management is to maintain ecosystems in a healthy, productive, and resilient condition so they can provide the services humans want and need, and not treat issues in isolation.





Objective 6: Raising Environmental Awareness



The DA is committed to addressing environmental concerns as a top priority, as the environment affects all South Africans. A core element of addressing environmental issues is a lack of awareness surrounding how environmental concerns impact daily lives.

The DA will ensure that all South Africans have access to accurate, actionable information about climate change and environmental sustainability. A well-informed public is essential for driving environmentally responsible behavioural change and ensuring that vulnerable communities are equipped to adapt to climate risks. However, entrenched educational inequalities, digital access, and geographic location have created uneven environmental awareness levels, leaving many South Africans underprepared for increasing environmental risks.

The DA will enhance climate literacy by strengthening education systems, improving public communication, the accessibility and penetration of digital technologies, and empowering local leaders. Through these measures, we will ensure that every South African has the knowledge needed to participate in our transition to sustainable development.

A Lack of Environmental Awareness Among the Public

South Africa's entrenched economic inequalities are reflected in climate awareness gaps.⁹⁰⁴ Disparities in education, geography, and digital access have created an uneven understanding of climate risks, leaving vulnerable populations underinformed.

Environmental degradation disproportionately affects low-income communities. Low-income neighbourhoods tend to experience higher pollution levels, inadequate waste management, and a lack of access to basic utilities such as water and electricity. A decline in air quality, water scarcity, or poorly managed waste will affect low-income areas first, due to limited access to basic infrastructure and services. High-income areas have alternative provisions such as Jojo tanks if water is scarce (e.g. during the drought in Cape Town in 2017/18) or USP devices for Wi-Fi, private solar installation, or generators if there are rolling blackouts.⁹⁰⁵

Environmental issues are typically a low priority among South Africans.⁹⁰⁶ There is often a perception that environmental matters are secondary to immediate needs such as housing and employment, even though the impacts of climate change on immediate needs are documented.⁹⁰⁷ The DA is committed to focusing on key environmental concerns with the necessary policy trade-offs to ensure a growing and stable economy.

Community buy-in is necessary to achieve sustainability and increase environmental compliance. When environmental issues are sidelined, it not only hinders climate progress but also prevents communities from uniting around shared goals of sustainability and resilience. Addressing awareness gaps requires a shift in political priorities and greater community involvement to ensure that environmental concerns are central to public discourse. Addressing climate change challenges will inherently support progress in interconnected areas, including the economy and improved standards of health and well-being. This connection must be emphasised to refocus the environment as a key public priority.

Three key areas contribute to low environmental awareness: 1) Lack of access to knowledge; 2) Climate change denialism; 3) Short-term economic priorities; 4) Language barriers.

1. Lack of Access to Knowledge

A lack of climate science education can result in individuals not sufficiently understanding climate change or denying its existence. Environmental education was not widely integrated into South African school curricula before 2010, and an educational gap exists between those who have formalised schooling and those who do not.⁹⁰⁸ This has resulted in people born before 2000 being relatively unaware of how climate change and biodiversity loss affect their daily lives.

Studies into climate knowledge demonstrate this. Surveys conducted by the Human Sciences Research Council (HSRC) found that 17 percent of South Africans have “no knowledge at all” of climate change.⁹⁰⁹ Climate change knowledge also shows a clear educational gradient. Those with a tertiary qualification are significantly more aware of climate change than those with a matric (grade 12) or lesser qualification (68 vs. 52 percent).⁹¹⁰ Those with a matric had significantly higher levels of awareness than those with an incomplete secondary qualification or less (52 vs. 45 percent).⁹¹¹ Those with incomplete secondary education were also more aware than those without formal schooling (45 vs. 32 percent).⁹¹² People with incrementally higher schooling levels also exhibit greater climate awareness.⁹¹³

Environmental knowledge is often divided by socio-economic demographics. People from urban areas and higher-income backgrounds are more aware of environmental issues, with around 45 percent of low-income households compared to 59 percent of upper-income households possessing knowledge of climate change.⁹¹⁴ A contributing factor is poorer educational resources. Many teachers lack the necessary training and resources to effectively teach environmental topics, leading to inconsistent coverage across schools.⁹¹⁵ Lower-income areas tend to lack the resources to enable learning outside of school. Residents have no internet access, no libraries, no scientific outreach events, and no local council prioritisation of climate change.⁹¹⁶

Educational institutions often focus on specialised environmental programmes, which exclude the general population from gaining basic awareness of sustainability principles. Climate change awareness campaigns often fail to present digestible information and to make the information relevant to immediate concerns in daily life.⁹¹⁷

There is a concern that shifting to a green economy will impact livelihoods. Recent surveys demonstrate this: 32 percent of South Africans believe environmental regulations “cost jobs”.⁹¹⁸ Despite this perception, about 100 000 jobs were created in the green sector from 2011 to 2019.⁹¹⁹ The lack of campaigning around a green transition does not combat this misunderstanding.

A lack of knowledge or skills to sustainably manage large areas of land, among farmers and individuals in rural parts of South Africa. Environmentally sustainable agriculture aims to minimise environmental damage and use resources more efficiently. A lack of knowledge regarding the need to farm sustainably will erode the sustainability of the agricultural sector.

2. Climate Change Denialism

Climate change denialism^{xlvii} impedes improving environmental awareness. A lack of accessible information can cause this denial, and a consequent misunderstanding of climate science, as well as misinformation and disinformation, spread often through the internet and other unverified resources. A lack of awareness is not as difficult to combat as *incorrect* information. Climate change denialism is most prominent in the United States. However, an increasingly globalised world via the internet and social media has resulted in similar views becoming more prevalent in South Africa.⁹²⁰

xlvii. The belief that either a) the climate is not fluctuating in any meaningful way or b) it is changing, but its cause is largely unrelated to human activity.

Despite the scientific consensus that climate change is predominantly driven by human activity, there is a school of thought that denies the extent of human influence on climate change or the severity of its potential impacts.⁹²¹ The majority of climate scientists agree that human activities are a major driver of climate change, supported by extensive research, data, and peer-reviewed publications.⁹²² Other factors, such as natural climate variability, also play a role, but their influence is much smaller than human-induced factors.⁹²³

Given that efforts to address climate change rely on the buy-in of communities, individuals must acknowledge the extent of human responsibility for climate change. Without this acknowledgement, there will likely be no acceptance of personal or collective responsibility and no urgency to change behaviour or policy.⁹²⁴ Climate deniers are unlikely to be inclined to change their behaviour if they do not view climate change as a function of human activity. About 10 percent of South Africans align with “trend sceptics”, denying change in global climate patterns altogether. 32 percent of South Africans attributed observed weather changes primarily to natural variability rather than human-induced factors.⁹²⁵ This implies that, in 2023, 42 percent of South Africans either denied the reality of climate change or ascribed it to natural causes. About 11 percent of South Africans expressed indecision or uncertainty about the causes of climate change, illustrating the lack of knowledge and instruction available.⁹²⁶ The varying attributions to natural processes, human activity, or a combination of both suggest that scepticism exists and is the dominant narrative, reflecting a concerning tendency among the South African public.⁹²⁷

Compared to many countries, South Africa is atypically sceptical in its beliefs on climate change. Compared to the 30 other countries surveyed^{xlviii}, which comprise 30 of the 45 countries on the International Social Survey Programme (ISSP) list, South Africa has the highest percentage of those who believe the climate is not changing at all (10 percent in 2023)⁹²⁸, and the lowest percentage of people who think climate change is primarily caused by human activity, at 17 percent (the next lowest on the list was Slovakia, at 28 percent).⁹²⁸

3. Short-Term Economic Priorities

South Africa faces entrenched economic inequalities which force communities to prioritise short-term survival needs, such as housing and employment, over long-term environmental considerations. Multiple decades of poor economic policies have forced many South Africans to prioritise short-term economic considerations over long-term environmental sustainability.⁹³⁰ There are a variety of causes for these attitudes.

Economic pressures mean that industries which contribute to environmental degradation are often favoured for their immediate economic benefits, overshadowing their harmful effects. For example, developing a sustainable business in the energy supply chain will require moving away from coal slowly. The transition to renewables means companies will incur short-term economic trade-offs. Similarly, single-use plastics are favoured for their low cost and convenience by producers, incentivising their production over more sustainable alternatives.⁹³¹

A failure, on the part of science communicators and government, to make clear the connection between environmental issues and short-term survival needs. Environmental disasters will directly worsen material conditions, although this link is not sufficiently explained to the public. Apart from abrupt events like floods or droughts, respondents of the HRSC survey feel that environmental issues do not carry the same urgency as being unable to find employment.⁹³² For example, while pollution may gradually warm the planet over multiple years, many South Africans need their basic needs met today.

xlviii Includes other middle-tier economic nations like India, and countries like Spain and France, which have similar populations to South Africa.

A failure to accurately account for environmental externalities in project planning. Environmentally destructive projects, such as mines, seldom account accurately for the short- and long-term environmental impacts. Examples of these include air quality in the short term or lost opportunity costs for future agriculture or nature-based activities in the long term.

4. Language Barriers

Scientific information, in the form of presentations, pamphlets, or books, is often exclusively in English. Rural populations, who are most vulnerable to environmental risks, are particularly affected as they are often not first-language English speakers, have lower levels of education, and are not able to access information through available channels because of their location or lack of connectivity. As a result, fluent English speakers often show significantly higher levels of climate change awareness.⁹³³

Choosing the right language for science communication is a key aspect of information dissemination. Typically, high levels of awareness are seen among persons living in urban areas or individuals who possess high levels of education, since they either speak English as a first language or are sufficiently fluent in the language to understand relevant climate change information. Language overcomes educational or income disparities. For example, first-language English speakers report higher levels of climate change awareness that cut across educational and economic divides.⁹³⁴ The combination of direct exposure to extreme climate shifts and the existence of information in a language readily understood is a powerful means to raise awareness.

DA Policy Recommendations for Improving Environmental Awareness

The DA will improve climate literacy in low-income areas by:

- **Establishing local workshops and training sessions to educate residents** on climate change, its impacts, and sustainable practices. Emphasis should be placed on the relevance of climate to daily life and why sustainable living, even at a household level, helps the environment. Collaboration with NGOs and universities to provide accessible learning materials can enhance citizens levels of environmental awareness. Rural areas will be prioritised due to the existing gap in knowledge and accessibility, as well as the large tracts of natural land under private management in rural areas. Farmers themselves reported that the main barrier to sustainable farming practice is a lack of training and the appropriate skills base.⁹³⁵

Where We Govern City of Cape Town

In 2018, Cape Town was poised to become the first major world city to run out of water due to three major consecutive dry winters (2015-17). “Day Zero” would be declared if dam levels reached the last 13.5 percent. Water to homes and businesses would be shut off, and families would have to collect water rations from collection points.⁹³⁶

Using a mix of pricing and non-pricing mechanisms, the city enlisted households, businesses, and citizens to respond to the drought. Non-price mechanisms included a large-scale media campaign, on radio, news, and posters around the city, encouraging residents to conserve and use water wisely. Citizens responded by replacing lawns and water-sensitive plants with alternatives requiring less water, reducing personal water use and using greywater for toilet flushing.

Dam levels eventually stabilised, in part due to the widespread awareness and the actions of collective responsibility.



- **Ensuring physical and life science teachers are trained in delivering climate content.** This includes ensuring that teachers in each phase undergo a competency assessment every five years to remain in the profession and expanding the Western Cape Schools Evaluation Authority (SEA) nationally to improve school accountability by measuring the quality of education delivered.⁹³⁷ More information can be found in our [Basic Education Policy](#).
- **Leveraging digital and media platforms to improve environmental awareness.** As internet access increases, mobile apps and online radio programs will be an increasingly common source to provide climate information in an engaging format. Social media use also correlates with higher environmental awareness,⁹³⁸ and can be used to spread information and encourage discussions on climate issues in many different communities. This will also allow information to be disseminated in different languages. For example, the City of Cape Town has several resources on their website, for all levels, as well as a list of workshops and talks done to raise awareness.⁹³⁹
- **Utilising extreme weather events as opportunities to raise climate change awareness.** For example, the increased number of floods in KwaZulu-Natal, wildfires in the Western Cape, or droughts in Limpopo⁹⁴⁰ provide opportunities to emphasise in public communications the danger climate change presents in worsening natural disasters. We will also tailor government media content to link climate change with local concerns, such as drought impacts on food security or pollution on health.
- **Producing environmental awareness resources in multiple languages** and providing these materials (posters, videos, comics) at clinics, municipal offices, and grant disbursement sites. This will help translate climate information into accessible languages where relevant.

The DA will counter climate change denialism by:

- **Launching public myth-busting campaigns.** Create visually engaging campaigns that clearly correct common myths. Countering misinformation will require a consistent, long-term commitment to a messaging position.⁹⁴¹ These campaigns will focus on constructive engagement and education, rather than using guilt as a means of persuasion.

Case Study – Choked Up

London, England

As part of the #MayorforCleanAir campaign, Environmental Defence Fund Europe mobilised youth activists, parents and, health workers to call on London mayoral candidates to address air pollution inequity. **Choked Up**, a group of teenagers fighting for climate justice, installed ‘hacked’ road signs along major roads in London to read “POLLUTION ZONE” and “Breathing Kills”.⁹⁴²

To highlight the disproportionate impact of air pollution on people of deprived communities, the signs were installed in areas of toxic and harmful air pollution, including Whitechapel, Catford and Brixton.

The consistent media posting, talks, and social media soundbites from the campaign successfully shifted views among many people, in particular the youth, to the realities of climate change.



- **Training community, traditional leaders, and local influencers as climate messengers.** Respected community and traditional leaders, equipped with basic training in foundational climate science, can act as powerful messengers. Securing trusted persons to convey a message can sometimes be as important as the message itself.
- **Using local testimonies to counter climate denialism.** Collect and distribute stories from farmers, elders, and youth documenting noticeable climate shifts. These can include changes in rainfall, crop yields and flood intensity. Collected testimonies can be packaged into radio features, social media clips, and local exhibitions.



Case study

Mandela Bay Municipality

Nelson Mandela Bay Municipality created an important partnership with Nelson Mandela University and Mandela Bay Development Agency. The city was looking to build better engagement with its communities. It approached the University for research assistance to develop solutions that support sustainable township economies. The partnership covered several projects in various locations throughout the city. As a result, a series of important sustainability projects have been developed and continue to be developed in the city.

One project included the “A Recycled Home for Gogo Selinah - The Forgotten Generation”.⁹⁴³ This project built a home out of 95% recycled materials, replacing the poor materials used for the shack Selinah lived in previously. The recycled mode of building is highly cost-effective. The project was successful in raising awareness in the community of the value of recycling and improving waste collection.⁹⁴⁴

Gogo Selinah next to her home

Conclusion

South Africa stands at a critical juncture. The nation's profound environmental challenges are not isolated issues. They are interconnected crises that threaten public health, stifle economic growth, and jeopardise the well-being of future generations. These challenges have been exacerbated by years of policy neglect, poor governance, and a failure to integrate environmental stewardship with national development goals.

This Democratic Alliance's Environmental Policy presents a different path. It is a comprehensive, evidence-based, and actionable blueprint to transition South Africa from a trajectory of ecological decline to one of sustainable environmental prosperity. Grounded in the core belief that a healthy environment and a thriving economy are not mutually exclusive but intrinsically linked, this policy outlines a vision of a robust green economy that enhances, rather than sacrifices, economic growth.

The successful implementation of this policy will reposition South Africa as a leader in sustainable development. It will unlock new economic opportunities in renewable energy, green technology, sustainable agriculture, and eco-tourism. It will ensure a more resilient nation, better prepared to withstand the shocks of climate change and resource scarcity. Most importantly, it will protect our constitutional right to a clean and healthy environment and fulfil our moral obligation to bequeath a liveable, prosperous, and sustainable South Africa for generations to come.

This document is more than a policy. It is a pledge to build a future where environmental sustainability is the foundation of our economy, the cornerstone of our health, and will serve as an example to the rest of the world. The DA is committed to turning this vision into a reality for all South Africans.

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