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**Promotion and protection of all human rights, civil,
political, economic, social and cultural rights,
including the right to development**

Visit to South Africa

Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, Marcos Orellana*

Summary

The Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, Marcos Orellana, visited South Africa from 31 July to 11 August 2023. During his visit, the Special Rapporteur focused on key issues, such as air pollution, just transition, mining, the control and sound management of hazardous substances, including mercury, asbestos and polychlorinated biphenyls, pesticides and waste management.

The Special Rapporteur highlights the advanced stance of the South African Constitution on human rights, including its recognition of the right to a healthy environment 25 years before the General Assembly recognized that right in 2022. However, he notes that the crude legacy of pre-1994 environmental racism persists, exacerbated by outdated laws and inadequate enforcement. The negative impacts of toxic pollution from mining, coal-fired power plants, greenhouse gas-intensive projects, landfills, pesticides and other hazardous substances disproportionately affect marginalized and low-income communities along racial lines.

* The summary of the report is being circulated in all official languages. The report itself, which is annexed to the summary, is being circulated in the language of submission only.



Annex

Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, Marcos Orellana, on his visit to South Africa

I. Introduction

1. Pursuant to Human Rights Council resolution 45/17, the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes, Marcos Orellana, conducted a visit to South Africa from 31 July to 11 August 2023 at the invitation of the Government. The objective of the visit was to identify good practices and assess the country's efforts to prevent and address the negative impacts of toxic substances on human rights.
2. The Special Rapporteur would like to express his sincere gratitude to the Government for its invitation and excellent cooperation before and during the visit.
3. Over the course of his visit, the Special Rapporteur had the privilege of engaging with the Minister of Forestry, Fisheries and the Environment and the Deputy Minister of International Relations and Cooperation, as well as technical experts from various government departments including the Departments of International Relations and Cooperation, Justice and Constitutional Development, Agriculture, Land Reform and Rural Development, Employment and Labour, Forestry, Fisheries and the Environment, Health, Home Affairs, Human Settlements, Mineral Resources and Energy, Science and Innovation, Water and Sanitation and Women, Youth and Persons with Disabilities. The Special Rapporteur was also pleased to exchange views with members of the South African Human Rights Commission and the Presidential Climate Commission. He is also grateful for the fruitful discussions with the Premiers, members of the Executive Councils and officials from the Governments of Gauteng, Mpumalanga, Western Cape and KwaZulu-Natal during his visits to those provinces.
4. The Special Rapporteur also held meetings with civil society organizations, members of academia and local communities. Their contributions were instrumental and their commitment and passion in defence of human rights and the environment inspiring. The Special Rapporteur also wishes to thank the members of the business community he engaged with for their openness.
5. Finally, the Special Rapporteur expresses his gratitude to the United Nations country team, including the Regional Office for Southern Africa of the Office of the United Nations High Commissioner of Human Rights, for their support.

II. General context

6. Environmental racism, rooted in colonialism and apartheid policies, continues to resonate in South Africa today. Environmental racism denotes discrimination and disproportionately adverse impacts from pervasive air, water and chemical pollution imposed upon Black communities and other marginalized groups.
7. The economy boomed in the late nineteenth century with the discovery of diamonds on the banks of the Orange River and gold in the Witwatersrand.¹ Extensive foreign investment in the country followed. Mining shaped the country's social, economic, political and environmental landscape. Beginning in the late 1880s, colonialism and, later, the

¹ See <https://www.mineralscouncil.org.za/sa-mining>.

discriminatory policies of apartheid allowed mining magnates to reap immense rewards, while subjecting Black South Africans to hazardous working conditions and hunger wages.²

8. In 1994, South Africa held its first democratic elections, marking the end of apartheid and the first time that South African people of all races could vote in a national election. Since then, the country has made significant progress on social welfare and political participation. It has also made efforts to dismantle the structures of apartheid and instituted broad-based Black economic empowerment policies.³

9. However, almost 30 years later, the legacy of apartheid continues to weigh down the country's development efforts. South Africa grapples with significant economic, social and environmental challenges. The trajectory of economic growth has stagnated to about 1 per cent per annum over the past decade.⁴ According to the most recent data, the country's Gini coefficient, which measures income inequality in a country, is 0.67, making it the most unequal country in the world.⁵ South Africa also struggles with high unemployment, corruption, high rates of poverty and low intergenerational mobility.⁶ Those challenges have been further exacerbated by delays in structural reforms and the risk of external shocks, such as the coronavirus disease (COVID-19) pandemic and the impacts of climate change.

10. Despite the progress made since 1994, those realities continue to strain the State's ability to provide basic services. Due to a chronic lack of investment in infrastructure, South Africa has been dealing with an energy crisis for several years. Rolling, scheduled power cuts, or load-shedding, began in 2007, averaging over 10 hours of blackouts daily in the first half of 2023.⁷ The lack of electricity supply has had detrimental impacts on the economy and the quality of life of the population. According to the South African Reserve Bank, load-shedding costs the economy 900 million rand, or \$50 million, daily.⁸

11. Similarly, the ageing water and wastewater infrastructure is on the brink of collapse, primarily due to a lack of investment in maintenance. About 40 per cent of clean water is lost, mostly through leaks.⁹ Water security is further threatened by effluent contamination. At least 39 per cent of wastewater treatment works are in a critical condition. The South African Human Rights Commission has recommended that a national disaster be declared, in accordance with the Disaster Management Act No. 57 of 2002.¹⁰ According to information received, a failure to address these shortcomings resulted in a cholera outbreak in Hammanskraal that claimed at least 47 lives between January and August of 2023, due to pollution from the Rooiwal wastewater treatment plant.¹¹ After enforcement action was exhausted, the Department of Water and Sanitation opened a criminal investigation.

12. Disenfranchised communities, historically marginalized by apartheid, many of whom live in informal settlements today, bear the brunt of socioeconomic, health and environmental harms from the energy, water and wastewater crises, in addition to those from polluting industries.

² See <https://www.cairn.info/revue-politique-africaine-2007-2-page-149.htm> (in French).

³ See <https://www.thedtic.gov.za/wp-content/uploads/bee-strategy.pdf>.

⁴ See <https://openknowledge.worldbank.org/entities/publication/c2ebae54-6812-51d3-ab72-08dd1431b873>, p. 1.

⁵ See <https://www.wits.ac.za/news/latest-news/opinion/2023/2023-09/south-africa-cant-crack-the-inequality-curse-why-and-what-can-be-done.html>.

⁶ See <https://documents1.worldbank.org/curated/en/099125303072236903/pdf/P1649270c02a1f06b0a3ae02e57eadd7a82.pdf>.

⁷ See <https://www.worldbank.org/en/country/southafrica/overview>.

⁸ See <https://southafrica.un.org/en/233275-impact-load-shedding-livelihoods-story-two-resilient-single-mums>.

⁹ See Department of Water and Sanitation, *No Drop Report 2023*, available at https://ws.dws.gov.za/IRIS/releases/ND_2023_Report.pdf.

¹⁰ See <https://www.sahrc.org.za/index.php/sahrc-media/news/item/2873-tshwane-failed-to-maintain-wastewater-plants-leading-to-pollution-of-rivers-dams-sahrc>.

¹¹ See https://www.who.int/docs/default-source/coronaviruse/situation-reports/20231207_multi-country_outbreak-of-cholera_sitrep_9.pdf?sfvrsn=ee3f1c54_3 and <https://www.sanews.gov.za/south-africa/president-ramaphosa-visits-hammanskraal>.

III. International engagement and domestic legal framework

13. After 1994, South Africa rejoined the United Nations and has since ratified most international human rights instruments. It has also actively participated in the Human Rights Council and all special procedures have had a standing invitation to visit the country since 2003.¹²

14. South Africa has ratified the key multilateral environmental agreements on chemicals and wastes (the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, the Stockholm Convention on Persistent Organic Pollutants, the Minamata Convention on Mercury and the Montreal Protocol on Substances that Deplete the Ozone Layer). It has also taken on a leadership role in the human rights and environmental areas. South Africa hosts the Basel Convention Regional Centre for Training and Technology Transfer for the English-speaking African Countries. It has also supported a proposal to amend the Rotterdam Convention to overcome the breakdown of its science-policy interface mechanism.¹³ While the country has yet to become a party to the Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa, it has ratified the Basel Convention Ban Amendment, which bans “exports of hazardous wastes, including waste for recycling, from States members of the Organisation for Economic Co-operation and Development, States members of the European Union and Liechtenstein to other countries”.¹⁴

15. Although South Africa is a young democracy, it has built a strong legislative framework. The Constitution is renowned globally for its progressive stance on human rights. For example, the justiciable right of everyone “to an environment that is not harmful to their health or well-being” was enshrined in the Constitution 25 years before the General Assembly recognized that right in 2022.¹⁵ The Constitution also stipulates that the State has positive and negative obligations in fulfilling that right, including taking reasonable legislative and other measures.

16. After 1994, a number of important pieces of legislation were instituted to regulate chemicals and wastes, including the Occupational Health and Safety Act No. 85 of 1993; the National Environmental Management Act No. 107 of 1998; the National Water Act No. 36 of 1998; the Mineral and Petroleum Resources Development Act No. 28 of 2002; the National Environment Management: Air Quality Act No. 39 of 2004; and the National Environment Management: Waste Act No. 59 of 2008. However, there are laws predating 1994 that are no longer fit for purpose and result in human rights violations. Examples include the Hazardous Substances Act No. 15 of 1973 and the Fertilizers, Farm Seeds, Seeds and Remedies Act No. 36 of 1947.

17. The country’s legislative framework offers a strong basis for the protection of the rights to life, health and a healthy environment. However, this is severely undermined by a widespread lack of enforcement, owing to limited financial and human resources and the low priority given to environmental offences.

18. Further weakening enforcement, postponements of or exemptions from compliance have been extended to powerful corporate actors under the guise of economic development, job creation or security. For example, Eskom, the State-owned energy utility, and Sasol, a chemicals and energy company, which are considered two of the country’s biggest polluters, have been granted postponements, suspensions and/or alternative limits of the minimum emissions standards since 2015.¹⁶

¹² See <https://spinternet.ohchr.org/StandingInvitations.aspx>.

¹³ See A/HRC/48/61.

¹⁴ A/76/207, para. 57.

¹⁵ Sect. 24 (a).

¹⁶ See https://static.pmg.org.za/210824_CCAQM_Eskom_and_Sasol.pdf and <https://www.gov.za/news/media-statements/eskom-receives-dffe%E2%80%99s-decisions-minimum-emissions-standard-15-dec-2021>.

19. Furthermore, oversight authorities have struggled to keep public entities accountable. The non-compliance of wastewater treatment plants and municipalities is a case in point. The Department of Water and Sanitation has sent non-compliance letters to 90 municipalities and 334 wastewater systems that are in a critical state, asking them to submit corrective plans.¹⁷ By March 2023, only 168 of the 334 wastewater systems had submitted plans.¹⁸ After exhausting administrative enforcement processes, the Department of Water and Sanitation has opened criminal cases against 52 municipalities.

20. In South Africa, the responsibility for enforcing environmental laws is spread across various departments, making coordination a challenge. In the light of this, the Special Rapporteur was pleased to hear about the Multistakeholder Committee on Chemicals Management, set up by the Department of Forestry, Fisheries and the Environment in 2008. The aim of the Committee is to coordinate efforts, minimize duplication and maximize the resources of the relevant national departments. Representatives from academia, non-governmental organizations and industry sit on the Committee.

21. South Africa also has valuable enforcement tools. The Environmental Management Inspectorate, dubbed the Green Scorpions, consists of officials from national, provincial and local governments responsible for compliance and enforcement in respect of the National Environment Management Act and the Specific Environmental Management Acts.¹⁹ They have the powers to investigate, inspect, enforce and issue compliance notices and directives. Additionally, they work closely with the National Prosecuting Authority on cases of environmental crime. The Department of Water and Sanitation has a similar enforcement team, known as the Blue Scorpions.

IV. Governance and accountability

22. In 1998, South Africa ratified the International Covenant on Civil and Political Rights, which guarantees the rights to information, meaningful participation and an effective remedy. The country's national laws and regulations prescribe a set of procedures that consolidate these rights. However, in practice, they are often applied in a manner that undermines their intended purpose.

A. Access to information

23. The Promotion of Access to Information Act No. 2 of 2000 aims to foster a culture of transparency and accountability by providing for the public to have access to any information held by the State or by a private body. The Act also sets limitations on the types of information that can be accessed.

24. Various environmental regulations and licensing processes also require companies to make certain information publicly available. In the mining sector, for example, companies must make freely available on their website, at their office, or upon request, approved environmental management programme reports, social and labour plans, water use licence authorizations, water quality results and dust monitoring results.

25. The Special Rapporteur notes, however, that access to information does not simply entail making information available; rather, information must be comprehensible, clear and accessible. Testimonies indicate that the information that industry makes available to communities is sometimes too technical. Advertisements of projects or plans in newspapers are sometimes too small and easy to miss. Information received also suggests that the health and environmental risks of industrial operations are often downplayed, while the potential of economic gain is exaggerated to community members. Some areas are also covered in secrecy. For example, the list of registered pesticides is not available to the public free of charge.

¹⁷ See <https://ws.dws.gov.za/IRIS/releases/GDWR.pdf>, p. 154.

¹⁸ Ibid., p. vii.

¹⁹ See https://www.dffe.gov.za/sites/default/files/docs/publications/greenscorpions_newspaperinsert.pdf.

B. Public participation

26. South Africa is a constitutional democracy. Section 195 of the Constitution stipulates that “people’s needs must be responded to, and the public must be encouraged to participate in policy-making”. Public participation helps to overcome the insular and discriminatory practices of the past.

27. Environmental authorizations, environmental management programmes, water use licences and the granting of mining or prospecting rights are all processes that involve public participation. However, these processes occur over a prescribed period of time, which is often not sufficient to enable community members to engage in a meaningful way. Furthermore, the sentiment that public participation has become a mechanical “box-ticking” exercise, devoid of a genuine desire to find common ground, was heard time and again during the Special Rapporteur’s visit.

28. In some cases, industry has relied solely on consultation with traditional leaders, bypassing wider meaningful engagement with the community. Tellingly, in September of 2022, the Eastern Cape High Court in Makhanda ruled that an exploration licence, involving seismic surveys, had been unlawfully granted to Shell and Impact Africa. The Court found that there had been no meaningful two-way consultation with affected communities. It added that engagement with only a king, monarch or traditional leader was insufficient and “finds no space in a constitutional democracy”.²⁰

29. Civil society organizations and environmental human rights defenders play a critical role in awareness-raising and facilitating access to legal aid for community members. The Special Rapporteur commends their relentless work, courage and resilience in pursuit of environmental and social justice. He is also extremely concerned at reports of attacks on them, as they challenge powerful interests.

30. The recurrence of such attacks, with little to no accountability, is alarming. In October of 2020, Fikile Ntshangase, who was the deputy chair of the Mfolozi Community Environmental Justice Organisation and was opposing the expansion of a coal mine, was gunned down by four men. In 2016, Sikhosiphi “Bazooka” Redebe, the chair of the Amadiba Crisis Committee, which was opposing a proposed titanium mine in the area, was killed. Since 2009, 24 members of a community-based movement focused on land and housing issues, among others, known as Abahlali baseMjondolo, have been shot and killed. The killers of only 2 of the 24 victims have been arrested and convicted.

C. Access to an effective remedy

31. The Special Rapporteur received numerous reports of community members who had suffered from the environmental and health impacts of hazardous substances and wastes, often as a result of corporate actions and/or government inaction. The groups affected have yet to receive compensation. Many communities feel obliged to resort to litigation in order to be heard. However, access to the courts is not affordable for most marginalized communities.

32. One such example is the United Phosphorus Limited (now UPL) incident in Durban, KwaZulu-Natal. In July 2021, a UPL warehouse which stored thousands of tons of pesticides was set on fire during a wave of civil unrest in Durban. The fire burned for about 10 days until firefighters were eventually able to extinguish it. However, unaware of what was stored in the warehouse, water was used in fighting the fire. This resulted in a toxic mixture of chemicals flowing into the Ohlanga river and Umhlanga lagoon, reportedly turning the latter a toxic blue and killing thousands of fish.²¹ A cloud of toxic smoke covered Durban for more than a week, leaving people in nearby communities struggling to breathe.

²⁰ See <https://naturaljustice.org/wp-content/uploads/2022/09/Judgment-on-Sustaining-Wild-Coast-v-Minister-of-Mineral-Resources-Energy-Others.pdf>, para. 92.

²¹ See <https://www.dailymaverick.co.za/article/2021-08-17-here-it-is-the-toxic-stockpile-of-chemicals-in-torched-united-phosphorus-limited-durban-warehouse/>.

33. The warehouse was situated in close proximity to the Reddam Umhlanga School and the Blackburn informal settlement, both of which predated the construction of the warehouse. That begs the question as to why a hazardous facility of such magnitude was allowed to operate in the area. Following the incident, a team of investigators from both national and provincial departments initiated a criminal investigation into the compliance profile of UPL.²² The investigations revealed that UPL had not carried out the necessary processes or obtained the required approvals for a major hazardous installation, including conducting the necessary risk assessments and obtaining planning permission from the municipality.²³ The fact that the lack of necessary authorizations was unknown to the authorities until disaster struck hints at the deficiencies in monitoring compliance.

34. Investigations also found that there was no site-specific environmental impact assessment conducted for the UPL facility. Rather, an integrated environmental assessment was carried out for all of Greater Cornubia as a mixed-use development project including industrial, commercial and residential complexes.²⁴ Greater Cornubia was designated and gazetted as a human settlement strategic integrated project and was prioritized, among other catalytic projects, for immediate implementation with regulatory processes expedited. The Special Rapporteur warns against waiving environmental safeguards, thereby opening up communities and the environment to greater risks and irreversible damage.

35. In Durban, community members from the Blackburn informal settlement, where more than 7,000 people live, told the Special Rapporteur they were not warned about the toxic risks posed by the use of nearby water sources until two to three weeks after the incident at the UPL warehouse. They used the river on a daily basis to wash their bodies and clothes in the absence of a functioning water distribution system. In Phoenix, another affected community, about 12,000 fishermen were reportedly deprived of their livelihoods in the aftermath of the fire.

36. Testimonies described a reluctance by UPL to engage with communities directly. The company has also commissioned most of the reports on the incident, while the Special Rapporteur's interlocutors called for reviews by independently appointed scientists. Community members continue to live under the threat of a recurring toxic disaster, as a makeshift pollution control dam that UPL has built to contain contaminated water has overflowed multiple times, most recently in October 2023.²⁵ Lastly, many of the demands by local communities for adequate health care, sanitation, support for livelihoods and a library remain unheeded. In June 2022, the Green Scorpions presented a criminal docket to the Director of Public Prosecutions, however no criminal charges have been formally laid against UPL.

V. Confronting toxic challenges

A. Air pollution

37. According to the World Health Organization (WHO), air pollution can be associated with 6.7 million premature deaths in the world annually.²⁶ A major contributor to air pollution in South Africa is the burning of coal, which generates about 90 per cent of the country's electricity. Coal-fired plants release over 70 hazardous pollutants, while petrochemical plants and metallurgical works release similar amounts.²⁷ Some of the priority pollutants identified

²² See

<https://www.dffe.gov.za/StatementbytheMinisterofForestryFisheriesandtheEnvironmentMsBarbaraCreecyatthereleaseoftheUPLComplianceProfileReport>.

²³ See <https://www.dailymaverick.co.za/article/2023-09-11-two-years-after-upl-chemical-inferno-outside-durban-still-no-sign-of-a-criminal-trial/>.

²⁴ See <https://www.dailymaverick.co.za/article/2021-08-04-lessons-to-be-learnt-from-durbans-upl-pesticide-fire/>.

²⁵ See <https://www.dailymaverick.co.za/article/2023-10-24-watchdogs-call-for-criminal-charges-after-upls-contaminated-water-pours-into-durban-river-again/>.

²⁶ See [https://www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health).

²⁷ See <https://learnwithicleiafrica.org/wp-content/uploads/2022/06/The-destruction-of-the-Highveld.pdf>.

in the national ambient air quality standards include particulate matter (PM₁₀ and PM_{2.5}), sulphur dioxide, carbon monoxide, nitrogen dioxide, lead, ozone, benzene and dust deposits.²⁸

38. PM_{2.5} are particles that measure 2.5 µm or less in diameter. These particles are of particular concern due to their ability to penetrate and cause damage to the respiratory and cardiovascular systems.²⁹ The World Bank Group estimated that in 2019, PM_{2.5} exposure contributed to 29,370 deaths in South Africa,³⁰ and health damages linked to PM_{2.5} cost the economy around \$18 billion, equivalent to about 5.2 per cent of the country's gross domestic product (GDP).³¹ The IQAir 2023 World Air Quality report noted that annual average PM_{2.5} concentration had decreased from 23.4 µg/m³ in 2022 to 19.9 µg/m³ in 2023.³²

39. The Special Rapporteur notes, however, that national air quality standards are less protective than the air quality guidelines set by WHO. For example, with respect to PM_{2.5} the WHO guidelines maintain that annual average concentrations should not exceed 5 µg/m³, while, the annual standards in South Africa are set at 20 µg/m³ until 2029. The Special Rapporteur also notes the efforts that have been made to introduce progress in the levels of protection, with standards becoming more stringent over time, expected to be at 15 µg/m³ on 1 January 2030.³³

40. In 2007, parts of Gauteng and Mpumalanga Provinces were declared a priority area, known as the Highveld Priority Area, for air pollution under the terms of the National Air Quality Act. The heavily polluted area is home to 12 out of the 15 coal-fired power plants belonging to Eskom, as well as the Secunda facility and Natref refinery belonging to Sasol. In 2012, an air quality management plan was published to reduce air pollution and bring the area into compliance with national air quality standards.

41. By 2019, almost seven years after the air quality management plan for the Highveld Priority Area was published, no regulations had been promulgated to give it effect. A group of community representatives bravely brought a case to the High Court, colloquially known as the “Deadly Air Case”. In its ruling in March 2022, the Court declared that the poor air quality in the Highveld Priority Area “is in breach of residents’ section 24 (a) constitutional right to an environment that is not harmful to their health and well-being”.³⁴ The Court further declared that the Minister of Forestry, Fisheries and the Environment had a legal duty to prescribe regulations to implement and enforce the Highveld plan and directed the Minister to do so within 12 months. Almost two years have passed since that ruling but the Department of Forestry, Fisheries and the Environment is still preparing the regulations for implementation of the plan.

42. In Mpumalanga, communities told the Special Rapporteur that, faced with an unfair trade-off between their economic survival and their well-being, they felt compelled to take up jobs in the coal industry. Some areas in Mpumalanga resemble a “sacrifice” zone where low-income and Black communities disproportionately carry the burden of disease caused by toxic air pollution. Communities reported high asthma rates and that clinics were overwhelmed and understaffed, and often lacked the appropriate medication and ways to store it. There is also a high absence rate among teachers suffering from air pollution-related illnesses, impacting children’s educational development.

43. Dust and ashes also negatively affect air quality. One community representative said “it’s very visual – the air – it is brown”. Despite the sentiments expressed by some community

²⁸ See

<https://saaqis.environment.gov.za/Pagesfiles/Chapter%203%20Air%20Quality%20Standards%20and%20Objectives.pdf>, p. 17.

²⁹ Ibid., p. 19.

³⁰ See <https://openknowledge.worldbank.org/entities/publication/c96ee144-4a4b-5164-ad79-74c051179eee>, p. 39.

³¹ Ibid., p. 45.

³² https://www.iqair.com/dl/2023_World_Air_Quality_Report.pdf.

³³ See https://www.c40knowledgehub.org/s/article/WHO-Air-Quality-Guidelines?language=en_US; and https://www.gov.za/sites/default/files/gcis_document/201409/35463gon486.pdf.

³⁴ See <https://cer.org.za/wp-content/uploads/2022/03/TRUSTEES-JUDGMENT-DATED-18-MARCH-2022-1.pdf>, para. 241.1.

members that their bodies had “adapted to the dirty air”, community members are frequently denied employment in coal mines or power stations for failing the health assessments required to prove that the individual is healthy enough to work.

44. In addition, real-time data on air pollution is lacking and monitoring equipment is often non-functional, due to inadequate maintenance. A report produced by the Centre for Environmental Rights in collaboration with groundWork and the Highveld Environmental Justice Network states that the 2012 air quality management plan contemplates 23 monitoring sites. However, a draft review of the plan in 2017 listed only 9 monitoring sites and only 5 of them generated regular monthly reports.³⁵ The Special Rapporteur was pleased to learn about several community-led initiatives, including one by a group of young girls, Black Girls Rising, in Cape Town, that carried out air quality monitoring in various parks within townships and suburbs. However, he stresses that communities should not feel compelled to carry the burden of official monitoring and compensate for its shortcomings.

B. Just energy transition

45. The country’s toxic emissions levy a heavy toll on the economy and public health, making deep reductions in greenhouse gas emissions an urgent imperative. According to 2020 data, South Africa is the seventeenth largest greenhouse gas emitter, with a share of 1.07 per cent³⁶ and yet it is particularly vulnerable to the impacts of climate change. Extreme weather events are projected to increase in frequency, affecting those who are most vulnerable, compromising food security, threatening water resources and undermining the country’s development goals.³⁷ Decarbonizing the energy matrix is a national priority to mitigate the negative impacts of climate change, including transitioning away from coal.

46. South Africa has taken important steps towards a climate-resilient transition. The Presidential Climate Commission was established in 2020 to advise on climate action and facilitate a just and equitable transition towards a low-carbon economy. It is a multi-stakeholder body where diverse interests and perspectives are represented, including from government, industry and civil society.

47. In August 2022, the Government adopted the Just Transition Framework, in which it is estimated that South Africa will require at least \$250 billion over the next three decades to transform the energy system.³⁸ Guided by the Framework, South Africa has established the Just Transition Partnership. France, Germany, the United Kingdom of Great Britain and Northern Ireland and the United States of America, as well as the European Union have pledged to mobilize \$8.5 billion through a range of instruments, including grants and concessional finance, to support its decarbonization efforts.

48. While in Mpumalanga, the Special Rapporteur visited the Komati power station, where a pilot just transition programme is under way. Due to age and the cost of the operation, Eskom began to consider decommissioning Komati in 2017. It was finally taken off the grid in 2022 and the World Bank Group approved a \$497 million project to support its decommissioning, repurposing for renewable energy generation and training of former employees.³⁹ As the Special Rapporteur toured the facility in Mpumalanga, he saw a containerized microgrid that had been assembled onsite to be installed in one of the rural communities that are not connected to the national grid.

³⁵ See <https://cer.org.za/news/broken-promises-the-failure-of-south-africas-priority-areas-for-air-pollution-time-for-action>.

³⁶ See https://www.climatewatchdata.org/countries/ZAF?end_year=2020&start_year=1990 - ghg-emissions.

³⁷ See https://climateknowledgeportal.worldbank.org/sites/default/files/country-profiles/15932-WB_South Africa Country Profile-WEB.pdf.

³⁸ See https://pcccommissionflo.imgix.net/uploads/images/22_PAPER_Framework-for-a-Just-Transition_revised_242.pdf.

³⁹ See <https://pcccommissionflo.imgix.net/uploads/documents/PCC-Komati-Power-Station-Recommendations-Report.pdf>.

49. The Komati project offers a taste of the opportunities and challenges that might arise in the country's just transition efforts. While containerized microgrids might offer energy solutions for many rural communities not connected to the national grid, there are challenges in taking them to scale. For example, the country still does not possess the capacity to manufacture the different parts locally.

50. For many years, community members have relied on the coal industry for their livelihoods. A just plan of action must therefore consider their economic security. Former workers and community members expressed concern at the uncertainty around future plans for Komati, job prospects and whether their skill sets will actually enable them to take on roles in just transition projects. The Special Rapporteur stresses the centrality of public participation and developing a sense of co-creation and ownership among community members for the success of just transition projects.

51. According to the Presidential Climate Commission, the transition to greener technologies will increase employment in the mining industry, with demand increasing for critical minerals, such as copper, cobalt and vanadium. That market shift presents an opportunity for South Africa to learn from the toxic pollution of the past and integrate decarbonization and detoxification strategies into the mining of transition minerals and the management of new waste streams from renewable energy technologies.

52. The continued licensing of new coal and greenhouse gas-intensive projects, such as in the Musina-Makhado Special Economic Zone, another coal mine in Lephalale and several offshore oil and gas projects, is at odds with the country's just energy transition ambitions.

53. The new Musina-Makhado economic zone, for example, is projected to produce 30–50 megatons of greenhouse gas emissions per annum, equal to about 10 per cent of the country's total current emissions.⁴⁰ The environmental impact assessment for the economic zone reveals that ambient air quality standards will be exceeded for PM₁₀, PM_{2.5}, nitrogen dioxide and sulphur dioxide, all of which have deleterious impacts on human health.⁴¹ According to a 2019 specialist study on air quality in the Musina-Makhado Special Economic Zone, releases of chemicals such as hexavalent chromium will also create a high cancer risk.⁴²

C. Mining

54. For many years, South Africa dominated gold production worldwide.⁴³ It is estimated that it has produced nearly 40 per cent of the gold that has ever been mined.⁴⁴ Before 1994, the mining industry grew, while subjecting Black and migrant workers to hazardous working conditions. According to the Minerals Council of South Africa, today the mining industry contributes 6.2 per cent of the country's GDP⁴⁵ and mining activities are still seen as a linchpin of employment for many communities. The Department of Statistics estimated that in the third quarter of 2023, the mining industry employed approximately 481,000 people.⁴⁶

⁴⁰ See <https://naturaljustice.org/wp-content/uploads/2022/07/Open-Letter-to-UNDP-regarding-MoU-with-MMSEZ-4-July-2022.pdf>.

⁴¹ See <https://thegreentimes.co.za/wp-content/uploads/2023/01/revised-final-EIA-Report.pdf>, pp. 495, 497 and 498.

⁴² See https://sahris.sahra.org.za/sites/default/files/additionaldocs/AppQ_%20Air%20Impact%20Assessment.pdf, p. 67.

⁴³ See <https://www.mineralscouncil.org.za/sa-mining/gold>.

⁴⁴ See Roman Grynberg and Fwasa K. Singogo, *African Gold. Production, Trade and Economic Development* (Springer Nature Switzerland, 2021).

⁴⁵ See <https://www.mineralscouncil.org.za/special-features/1374-facts-and-figures-pocketbook-2023>, p. 5.

⁴⁶ See <https://www.statssa.gov.za/publications/P0277/P0277September2023.pdf>.

1. Tailings dams

55. The legacy of gold mining in the country has left more than 6,152 “ownerless and derelict’ mines”.⁴⁷ In Gauteng Province, the Special Rapporteur visited the Witwatersrand mining basin, which is the world’s largest gold and uranium mining basin. There, he saw mountains of mining waste dumps, or tailings dams, surrounding the city of Johannesburg and in between informal settlements. One estimate suggests there are 200 tailings dams around Johannesburg.⁴⁸

56. Tailings dams contain heavy metals and pose a significant threat to human health and the environment. In Witwatersrand, the ore contains uranium. Nearby communities inhale radioactive dust blown by the wind from tailings dams. Crops do not grow in the contaminated soil. Community members in Witwatersrand recounted stories of children swimming and sometimes drowning in tailings dams, where warning signs were often absent or poorly maintained. Cases of eczema, asthma, cerebral palsy and other illnesses or disabilities were also reportedly prevalent. “We can’t see or smell or touch the radioactivity, but it affects us directly”, one community member stated. Impacts on community members are exacerbated in the absence of adequate buffer zones, as the regulations under the Mine Health and Safety Act merely prescribe a distance of 100 metres, measured horizontally, between mining operations and communities.⁴⁹

57. Minimal measures have been taken by the Government and industry to address tailings dams. Legally-binding dust management and mitigation measures, such as vegetation and irrigation, are included in environmental management programmes. South Africa also has in place national dust control regulations under the Air Quality Act No. 39 of 2004. However, the definition of residential areas under the regulations do not cover informal settlements. That is a gross oversight, as most communities near mining operations live in informal settlements. The Special Rapporteur heard that draft regulations to address that gap are being formulated.

58. Tailings dams are the responsibility of the mining companies. However, the Government has implemented interventions for the management of abandoned tailings dams. Industry has approached the issue of abandoned tailings dams through re-mining operations. In the West Rand area, the Special Rapporteur visited the site of a historical mine dump that had been re-mined by a private company to recover residual metals using more advanced technologies than existed before. The waste had then been moved and consolidated in more modern, lined and contained facilities. Re-mining operations may be a useful method to control tailings and to direct waste to better managed facilities. Nevertheless, such re-mining also risks stirring dust and remobilizing certain contaminants.

2. Acid mine drainage

59. Acid mine drainage from mining operations is another threat to communities and water sources. The mixture of fluids that make up acid mine drainage is highly toxic and causes long-term health impacts, such as cancers and organ damage.⁵⁰ There are two primary sources: the first are abandoned mine voids that fill up with water and react with underground ore, and the second is water that comes into contact with tailings dams. Acid mine drainage seeps into the ground and contaminates the water used for irrigation, watering livestock, spiritual rituals and other domestic and recreational purposes.

60. Acid mine drainage also contributes to instability in the ground and the formation of sinkholes. Nearly a fifth of the densely populated areas in Gauteng and most of the

⁴⁷ See <https://www.dailymaverick.co.za/article/2022-03-17-acid-water-trail-of-death-reignites-concern-over-south-africas-abandoned-coal-and-gold-mines/>.

⁴⁸ See <https://hrp.law.harvard.edu/wp-content/uploads/2016/11/The-Cost-of-Gold-Full-Report-Final.pdf>, p. 4.

⁴⁹ See [https://mhsc.org.za/sites/default/files/public/publications/Mine Health and Safety Act 29 of 1996 and Regulations Final Booklet.pdf](https://mhsc.org.za/sites/default/files/public/publications/Mine%20Health%20and%20Safety%20Act%2029%20of%201996%20and%20Regulations%20Final%20Booklet.pdf), regulations 17.6–17.10.

⁵⁰ See <https://www.nature.com/articles/s41598-023-39266-4>.

gold-mining districts in the far West Rand are underlain by dolomite rocks.⁵¹ Acid mine drainage can accelerate the erosion of dolomite, leading to sinkholes, with detrimental consequences for residents. The Cradle of Humankind, a world heritage site where some of the oldest ever hominin fossils were found, is one of the locations threatened by sinkholes and water contamination. According to information received, untreated or partially treated acid mine drainage has flowed into the Tweelopies Spruit through the world heritage site and into the Limpopo River, which flows along the border between Botswana and Zimbabwe, through Mozambique, and finally pours into the Indian Ocean, extending the harms of acid mine drainage beyond the borders of South Africa.

61. The interministerial committee established to deal with acid mine drainage in Witwatersrand through interdepartmental cooperation has produced an expert report on the management of acid mine drainage in the area. The report includes an analysis of the risks and proposals for their management. It is encouraging to note that the Cabinet endorsed the report and allocated funds to the Department of Water and Sanitation to implement some of its recommendations, including the combined interventions of closing surface water ingress areas to reduce flooding and the prevention and management of decant by pumping and treating acid mine drainage, with a clear division of responsibilities between the Department of Water and Sanitation and the Department of Mineral Resources and Energy.

62. In Witwatersrand, the Special Rapporteur visited an acid mine drainage treatment facility that embodies positive collaboration between the Government and a mining corporation. Currently, solutions for acid mine drainage in South Africa are primarily focused on pH adjustment. When the pH level is elevated, the water becomes alkaline, transforming the heavy metals from a soluble to a solid form, which can then be removed from the water. The treated water remains high in salinity and requires fresh water for dilution. Such a method, however, puts a strain on the country's limited water resources. The Special Rapporteur also visited another facility of a company that reused polluted water from the tailings from its operations in a closed loop system.

3. Communities affected by mining

63. People living in informal settlements and in rural communities are disproportionately impacted by a lack of access to information and poor implementation of public participation processes by industry in relation to mining issues.

64. Around 25 per cent of people in Johannesburg and Ekurhuleni (about 1.6 million people) live in informal settlements⁵² and a quarter of them live in the mining belt.⁵³ The Special Rapporteur was shocked to learn about the Tudor Shaft informal settlement, which was built directly on top of a radioactive tailings dam. After years of mobilization, residents of Tudor Shaft were relocated. However, families were given short notice to relocate and many moved to other informal settlements that lacked sanitation and were still too close to tailings dams. In addition, some residents of Tudor Shaft living at the foot of the tailings dam were left out of the relocation effort and expressed frustration at industry and the Government for not adequately engaging them in plans for dealing with residual contamination.

65. Several communities affected by mining echoed the lack of information-sharing and meaningful participation. For example, the Special Rapporteur learned about the irresponsible mining operations of Zululand Anthracite Colliery that reached a peak when one of the company's "slurry dams" breached in December 2021, releasing an estimated 1.5 million litres of toxic slurry into the Mfolozi River, turning it black. The river is the primary water source for many rural farming communities and for the Hluhluwe iMfolozi Park, which is home to a rhinoceros and wildlife sanctuary. According to reports, downstream communities were not informed about the contamination until two weeks after the incident. In Somkhele, as mining operations of the Tende Coal Mine expanded in the area, communities were forced to relocate without prior informed consent and the graves of their

⁵¹ See [https://www.dws.gov.za/Groundwater/Documents/Dolomite/DWA Dolomite Guideline 2009 \(Final\)11.pdf](https://www.dws.gov.za/Groundwater/Documents/Dolomite/DWA%20Dolomite%20Guideline%202009%20(Final).pdf), p. 6.

⁵² See <https://placesjournal.org/article/ecologies-of-gold-mining-landscapes-of-johannesburg/?cn-reloaded=1>.

⁵³ Ibid.

ancestors and loved ones were exhumed and reburied, resulting in widespread psychological trauma.

4. Mine closures and rehabilitation

66. The Mineral and Petroleum Resources Development Act of 2002 states that the holder of a mining right “remains responsible for any environmental liability, pollution or ecological degradation, and the management thereof, until the Minister has issued a closure certificate”.⁵⁴ However, there is often a mismatch between the financial provision companies are required to make and the actual cost of rehabilitation. Also, larger mining companies often sell their rights to smaller companies that lack the capacity to address the environmental impacts. Mining companies in South Africa can also evade the costly obligations of mine closures and rehabilitation through winding-up and business rescue procedures, whereby, due to insolvency, companies are restructured or are dissolved and cease to exist, rendering them unavailable to deal with the requirements of closure, financial provision and rehabilitation.⁵⁵ That practice externalizes costs to the community and the State.

D. Mercury

67. Mercury is a heavy metal, found in rocks, that is highly toxic and persistent in the environment. Artisanal and small-scale gold mining is estimated to be the primary source of mercury pollution in the world, constituting 37 per cent of all emissions, followed by coal combustion at 21 per cent.⁵⁶ Both of these activities are common in South Africa.

68. According to WHO, mercury is one of the 10 chemicals of major public health concern.⁵⁷ Even small amounts of it can have negative impacts on the nervous, digestive, immune, respiratory and renal systems. Each year, exposure to mercury contributes to 29,000 deaths and the loss of 12 million points of intelligence quotient (IQ) worldwide.⁵⁸

69. South Africa is one of the biggest emitters of mercury worldwide.⁵⁹ It ratified the Minamata Convention on Mercury in 2019 and draft regulations to domesticate the Convention were published for comment, most recently in December 2023.

70. Mercury use in mining activities is not banned but regulated. Interlocutors reported mercury being widely used by artisanal miners, known as *zama zamas*. Artisanal mining is an illegal activity in South Africa. However, 8,000 to 30,000 *zama zamas* are involved in artisanal and small-scale gold mining.⁶⁰ While some can be characterized as criminal syndicates, others are pushed to the activity due to lack of alternative employment and political and economic crises in neighbouring countries, among other reasons.

71. In 2022, the Department of Mineral Resources and Energy published the artisanal and small-scale mining policy as a first step towards formalization of the artisanal and small-scale gold mining sector. Formalization could render important benefits for workers and their communities. It could also help the Government regulate the gold trade, organize workers and improve their working conditions. It could also provide a means of educating workers on techniques not involving mercury.

72. The Special Rapporteur received information that the Department of Health was revising the declared list of hazardous substances, under the Hazardous Substances Act No. 15 of 1973, to include mercury and mercury compounds as Group I hazardous substances

⁵⁴ See https://www.gov.za/sites/default/files/gcis_document/201409/a28-02ocr.pdf, para. 43.

⁵⁵ See <https://td-sa.net/index.php/td/article/view/985/2007>.

⁵⁶ See <https://www.epa.gov/international-cooperation/mercury-emissions-global-context-types>.

⁵⁷ See <https://www.who.int/news-room/photo-story/photo-story-detail/10-chemicals-of-public-health-concern>.

⁵⁸ See <https://www.nature.com/articles/s41467-021-23391-7>.

⁵⁹ See <https://www.sciencedirect.com/science/article/abs/pii/S1352231008004871>.

⁶⁰ See https://www.gov.za/sites/default/files/gcis_document/201508/unregulated-artisanal-underground-and-surface-mining-activities-electronic.pdf, p. 25.

and to prohibit the use of mercury in artisanal and small-scale gold mining. He welcomes those efforts and encourages prompt implementation.

73. The experience with the Thor Chemicals facility in Cato Ridge near Durban highlights the need for effective national and international controls of mercury and its use. In KwaZulu-Natal, the Special Rapporteur visited the Thor Chemicals facility. The company was established in 1963 and in the 1970s and 1980s, it supplied catalysts containing mercury to customers abroad and agreed to recover mercury from the spent catalysts for processing in South Africa. However, the recycling facility was inadequate and could not remove the mercury from the waste. Despite not having the necessary recovery capacity, Thor Chemicals continued to import waste laden with mercury. Over time, about 4,500 metric tons of mercury waste accumulated onsite.

74. The Special Rapporteur stresses that the transfer of hazardous waste from the global North to the global South, where developing countries are used as a dumping ground for toxic waste from developed countries, is a denial of the fundamental right to a healthy environment.

75. In 1988, high levels of mercury were detected in the Mngeweni stream next to the Thor Chemicals facility. The stream feeds into the Mngeweni river, which communities downstream use for domestic purposes. Sampling of a tributary of the Mngeweni stream indicated mercury concentrations between 20 and 100 mg/l, while the WHO limit for drinking-water standards was 0.001 mg/l.⁶¹ By the 1990s, four workers had died and several others were disabled or had suffered mental health impacts due to mercury poisoning.⁶²

76. In 1995, the post-apartheid Government initiated an investigation into Thor Chemicals, known as the Davis Commission.⁶³ In 1998, the Commission found that both Thor and the Government were culpable for allowing the stockpiling of mercury waste. It recommended that the waste be treated and disposed of. However, for almost 30 years, the mercury stockpiles remained onsite. During those years, the facility was subject to theft and armed robberies linked to illicit gold mining and a massive fire in 2019, exposing people and the environment to greater risks.

77. In 2019, the Government mobilized for the clean-up and Thor shipped the first container of waste to Switzerland for recovery in June 2020.⁶⁴ Meanwhile, most of the affected workers and their families are still awaiting compensation. Information received suggests only 41 out of 111 affected workers have received compensation.

E. Asbestos

78. Asbestos is a naturally occurring fibrous mineral that has been used in a wide range of products for its strength, durability, insulation and fire-resistant properties. Exposure to asbestos causes cancer of the ovaries, larynx and lungs, mesothelioma and asbestosis.⁶⁵

79. South Africa was a global leader in the production of asbestos, the third largest at one point.⁶⁶ While most of the asbestos mined was destined for export, it was also used locally to manufacture asbestos cement products such as roofing. It is estimated that from 1994 to 2000, around 24.2 per cent (273,627) of houses built under a low-cost government housing programme used roofing containing asbestos.⁶⁷ In 2008, the use, manufacturing, processing, import and export of asbestos was banned in South Africa.

⁶¹ Davis Commission, *Report of the First Phase (1997)*, pdf made available to the Special Rapporteur. See https://cdn.who.int/media/docs/default-source/wash-documents/wash-chemicals/mercury-history.pdf?sfvrsn=b200318f_4.

⁶² Presentation to the Special Rapporteur by the Chief Directorate of Occupational Health and Safety.

⁶³ Davis Commission report.

⁶⁴ See <https://www.dailymaverick.co.za/article/2021-04-17-at-long-last-thors-poisonous-mercury-is-getting-cleaned-up/>.

⁶⁵ See <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5982039/>.

⁶⁶ See https://www.occhealth.co.za/_assets/articles/314/1930.pdf, p. 135.

⁶⁷ Presentation to the Special Rapporteur by the Department of Human Settlements.

80. Nevertheless, the footprint of derelict asbestos mines and products containing asbestos endures. In that regard, the Government's derelict and ownerless mines strategy has prioritized rehabilitation of asbestos mines.⁶⁸ Also, the Department of Human Settlements, with the support of the Department of Forestry, Fisheries and the Environment, has set up a programme to remove asbestos from homes. The Department of Human Settlements issued a directive in the 2022/23 financial year to the provinces to prioritize this objective. However, the cost implications of the project remain a major obstacle to its timely execution. Research conducted in Soweto as far back as 2001 shows that asbestos fibres were already entering the ground from deteriorating asbestos roofing, jeopardizing the health and safety of mostly low-income and marginalized communities.⁶⁹

F. Polychlorinated biphenyls

81. Polychlorinated biphenyls are a group of hazardous organic chemicals that were manufactured in large quantities between the 1930s and 1980s. They can cause serious health effects in humans and wildlife, are also persistent in the environment and biomagnify higher up the food chain.⁷⁰ The Stockholm Convention on Persistent Organic Pollutants bans new uses and production of them. It also obliges States parties to eliminate their use in equipment by 2025.⁷¹

82. Although polychlorinated biphenyls were never manufactured in South Africa, polychlorinated biphenyl oil and related equipment were imported primarily for use in the energy sector in electricity generation and distribution. South Africa developed national standards for polychlorinated biphenyls in 2007 and 2016.⁷² In 2014, it published the "Regulations to phase-out the use of polychlorinated biphenyls (PCBs) materials and polychlorinated biphenyl (PCBs) contaminated materials".⁷³

83. Despite these measures, there are several challenges to their effective implementation. For example, the country is faltering in identifying inventories of polychlorinated biphenyls. Preliminary inventories that have been undertaken in implementation of the Stockholm Convention are incomplete. As part of the phase-out plans required under the 2014 regulations, stakeholders that own electricity generation and transmission equipment, probably containing or contaminated by polychlorinated biphenyls, have drawn up inventories. However, only 5 out of the 174 municipalities licensed by the National Energy Regulator of South Africa to oversee their own transmission and distribution facilities have submitted phase-out plans, due to inadequate financial and technical capacities.⁷⁴

84. Despite some efforts to raise awareness of the management of polychlorinated biphenyls, many provincial and municipal officials, as well as the general public, remain unaware of their adverse effects. As a result, there are cases of cross-contamination, leakage of transformers and run-off contamination at most substations. There are also reports of polychlorinated biphenyls or polychlorinated biphenyl-contaminated oil used as medicinal treatments.

⁶⁸ Department of Mineral Resources and Energy, "The national strategy for the management of derelict and ownerless mines in South Africa" (2009), available at <https://cer.org.za/wp-content/uploads/2011/10/The-National-Strategy-for-the-Management-of-Derelict-and-Ownerless-Mines-in-South-Africa-2009.doc>; and Department of Mineral Resources and Energy, presentation to the Parliamentary Portfolio on Derelict and Ownerless Mines, 17 November 2020, available at https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fcer.org.za%2Fwp-content%2Fuploads%2F2021%2F10%2F191120Derelict_and_Ownerless_Mine_Rehabilitation_Programme.pptx&wdOrigin=BROWSELINK.

⁶⁹ Presentation to the Special Rapporteur by the Department of Human Settlements.

⁷⁰ See <https://www.unep.org/explore-topics/chemicals-waste/what-we-do/persistent-organic-pollutants/pcbs-forgotten-legacy>.

⁷¹ Annex A, part II.

⁷² See <https://www.thegef.org/projects-operations/projects/9576>, FSP CEO endorsement document.

⁷³ See https://www.gov.za/sites/default/files/gcis_document/201409/37818rg10232gon549.pdf.

⁷⁴ See <https://www.thegef.org/projects-operations/projects/9576>, FSP CEO endorsement document, p. 16.

85. To address these challenges, South Africa has sought funding from the Global Environment Facility (GEF) with the aim of identifying, managing and treating in an environmentally sound manner at least 2,640 tons of polychlorinated biphenyls and polychlorinated biphenyl-contaminated material. The GEF funding includes expansion of local treatment capacities. There are two facilities in South Africa that can treat polychlorinated biphenyls. The Special Rapporteur visited one of them, a state-of-the-art facility run by a private company that has eliminated 10,000 tons of polychlorinated biphenyls and polychlorinated biphenyl-contaminated waste from South Africa since the start of operations in 2004.⁷⁵ The potential for expansion of the capacity to eliminate hazardous wastes enabled by government support and GEF funding is an example of a good practice where government and industry align their efforts.

G. Pesticides

86. Almost 80 per cent of the land in South Africa is agricultural.⁷⁶ The country is the second largest user of pesticides in Africa, according to 2021 data collected by the Food and Agriculture Organization of the United Nations.⁷⁷

87. Historically, the commercial agricultural sector has been dominated by white farmers and managers, who focused on large-scale farming that relies heavily on pesticide use. In the 1600s, European settlers began a campaign of racialized and systemic land dispossession that continued into the apartheid era. That history informs the unequal distribution of land ownership today. A government report in 2017 asserted that 72 per cent of total agricultural and farm holdings were owned by white South Africans, who constitute only 7.3 per cent of the population, while Black South Africans, who represent about 81 per cent of the population, own only 4 per cent of the land.⁷⁸ Since 1994, land restitution policies for rural Black populations have promoted pesticide-dependent large-scale farming.⁷⁹

88. Over the years, evidence has increasingly emerged that links exposure to pesticides to serious health effects on the skin, eyes, liver and kidneys, as well as the cardiovascular, endocrine and nervous systems. Children and women are particularly vulnerable to such risks. In the Western Cape, the Special Rapporteur heard from women farm workers who reported being asked to work in the vineyards immediately after pesticides had been sprayed, without being provided with personal protective equipment and while a thick layer of pesticides still covered the grapes.

89. Pesticides persist in the environment, bioaccumulate in the food chain and can cause biodiversity loss. Pesticides also drift into non-target areas, including water sources; run-off and leaching are widespread in South Africa.⁸⁰ The agricultural sector is the largest user of water in the country and pollution from pesticide-intensive agriculture poses significant risks for water security. A 2019 study was conducted to investigate the presence of pesticides in three watersheds: 187 pesticide compounds were detected, including imidacloprid, which exceeded the Swiss/European Union environmental quality standards used in the study 558 times.⁸¹ Mancozeb, trifluralin, paraquat, prothiofos and omethoate were also detected. Those five pesticides, among others, are banned in the European Union. However, some of them are still produced in European countries for export, particularly to developing countries, a practice that reproduces long-standing racist and colonial patterns of exploitation.

90. The Special Rapporteur was pleased to learn that the Department of Agriculture, Land Reform and Rural Development plans to ban the sale and use of certain highly hazardous

⁷⁵ See <https://athermal.co.za/>.

⁷⁶ See <https://data.worldbank.org/indicator/AG.LND.AGRI.ZS?locations=ZA>.

⁷⁷ See <https://www.fao.org/faostat/en/-data/RP>.

⁷⁸ See https://www.gov.za/sites/default/files/gcis_document/201802/landauditreport13feb2018.pdf; and https://census.statssa.gov.za/assets/documents/2022/P03014_Census_2022_Statistical_Release.pdf.

⁷⁹ See https://brill.com/view/journals/bafr/14/2/article-p125_1.xml?language=en.

⁸⁰ See <https://unpoison.org/wp-content/uploads/2020/12/Pesticide-spray-drift-in-South-Africa-Executive-Summary-web.pdf>.

⁸¹ See <https://www.sciencedirect.com/science/article/pii/S2589914719300751>.

pesticides from 1 June 2024.⁸² Nonetheless, all hazardous pesticides that have been banned in their countries of origin should also be banned in South Africa.

91. Enforcement of the legislation that governs pesticides in South Africa falls under several departments, leading to coordination issues. The primary legislation, the Fertilizers, Farm Seeds, Seeds and Remedies Act No. 36 of 1947, falls under the responsibility of the Department of Agriculture, Land Reform and Rural Development. It is outdated and widely perceived to be inadequate. After the Special Rapporteur's visit, South Africa gazetted new regulations under the Act.⁸³ The Special Rapporteur welcomes the improvements made.

92. The Special Rapporteur also encourages South Africa to address outstanding gaps. Among these, public participation and mechanisms for the traceability of pesticides are needed. Additionally, pesticide labelling requirements should be in languages accessible to workers and include clear specifications on buffer zones, non-target areas and aerial spraying.

93. Discussions during the Special Rapporteur's visit also raised concerns around transparency and corporate capture, including in pesticide registration processes and the role of scientists in them. The 2015 "Guideline of the registration process for agricultural remedies" explicitly refers to industry's definition of "confidential business information".⁸⁴ At the time of the visit, a list of registered pesticides in South Africa could only be accessed through CropLife South Africa, an association representing agrochemical companies, for a fee. The new regulations on pesticides commit the Registrar, who oversees the registration, regulation and prohibition of pesticides among other functions, to providing an updated quarterly list of registered pesticides.

94. Regulatory gaps and enforcement shortcomings have resulted in the emergence of "street pesticides" that are widely available in street markets and used in informal settlements to combat rampant rat and pest infestations, which are aggravated by the absence of adequate sanitation services. Street pesticides are either legally registered for agricultural use but decanted into unlabelled containers and used illegally for domestic pest control, or they are unregistered products, probably imported illegally.

95. Interlocutors informed the Special Rapporteur of the many children who had been poisoned or died after eating, drinking or handling hazardous street pesticides. In 2022, there were 34 poisoning cases, including five deaths, in Gauteng from an organophosphate, probably terbufos.⁸⁵ Local experts and medical professionals also flagged up to the Special Rapporteur that pesticide poisoning cases in South Africa were grossly underreported.

96. In September 2022, Nicholas Molver and his wife, Matri, died in their sleep after inhaling toxic fumes following the fumigation of the neighbouring apartment, where pesticides not registered for domestic pest control or indoor fumigation had allegedly been used by individuals not registered as pest control operators. The Molver family, among other victims of pesticide poisoning and negligent or illegal pesticide use, face a backlog of up to 10 years of toxicological testing in the three underresourced public forensic laboratories in South Africa. That is a serious obstacle to the realization of the right of access to justice.

H. Waste management

97. The south Durban basin is a clear example of the racialized zoning strategies linked to apartheid-era industrial development. Working class communities moved to south Durban and supplied the labour for the industry sited there. Communities formed a buffer around polluting industries along racial lines.⁸⁶ About 60 per cent of the country's petroleum is refined in South Durban, which is home to a multitude of polluting industries, including a

⁸² According to the Government, pesticides that fall into category 1 or 2 of the carcinogenic, mutagenic, or reprotoxic criteria of the Globally Harmonized System of Classification and Labelling of Chemicals will be banned.

⁸³ See https://www.gov.za/sites/default/files/gcis_document/202308/49189gon3812.pdf.

⁸⁴ See [https://croplife.co.za/Resources/Crop Protection/Guideline-for-Registration-Process-for-Agricultural-Remedies-2015.pdf](https://croplife.co.za/Resources/Crop%20Protection/Guideline-for-Registration-Process-for-Agricultural-Remedies-2015.pdf).

⁸⁵ Presentation to the Special Rapporteur by the Gauteng Department of Health.

⁸⁶ See <https://foip.saha.org.za/request-file/CER-2013-TMM-0002/DD9DD10.pdf>.

number of landfill sites.⁸⁷ In recent years, community activism against the toxic fumes emanating from landfill sites has led to several being shut down by the Government.

98. Households in South Africa generate an estimated 12.7 million tons of domestic waste per year, of which, 25 per cent is not formally collected or treated and is mostly illegally dumped, and 75 per cent ends up in landfill sites that pose hazards to surrounding communities.⁸⁸ Most landfill sites are reaching the end of viable life.⁸⁹

99. Population growth and urbanization have increased the pressure on municipalities, which face a number of challenges in waste collection and management. Although they set tariffs for waste management services, inadequate financing remains an issue, contributing to ageing infrastructure, a lack of the necessary equipment and staff shortages. Municipalities also struggle with keeping records of volumes and types of waste, and monitoring compliance, resulting in rampant non-compliance with landfill licensing requirements and illegal dumping. A lack of public awareness and inadequate separation of waste at source exacerbate these issues. Moreover, an overlap in jurisdictions and functions between district and local municipalities undermines accountability. Delivery of waste services is particularly deficient, or non-existent, in informal settlements and rural communities, mirroring historical inequalities.

100. The Government has promoted several initiatives to address challenges in waste management. Given the need for resources, municipalities have partnered with the private sector to manage landfill sites. Municipalities can also procure specialized waste vehicles using the reformed national grants system. The Department of Forestry, Fisheries and the Environment, supported by the South African Local Government Association, conducts regular capacity-building exercises for council members and municipal officials.

101. In 2020, the Government introduced a circular economy approach with a national waste management strategy. The strategy advocates for a waste management hierarchy that prioritizes prevention and aims to minimize raw material extraction from the environment and the need to dispose of waste, moving towards zero waste in landfills. It also seeks to engage with and integrate informal waste pickers who divert at least 90 per cent of recyclable materials from landfills and save municipalities approximately 700 million rand per annum in costs.⁹⁰ The extended producer responsibility regulations of 2020 promote the “polluter pays” principle and require organizations implementing the extended producer responsibility scheme to financially compensate waste pickers.

VI. Conclusions

102. **The legacy of the discriminatory policies and environmental racism of apartheid continues to hinder the development of South Africa. Black communities and other marginalized groups bear the brunt of the negative socioeconomic, health and environmental impacts of polluting industries and the Government’s shortcomings in the provision of basic services.**

103. **South Africa has exerted notable efforts to strengthen multilateral instruments on chemicals and wastes and in capacity-building. It has also adopted several pieces of legislation that govern the management of chemicals and wastes. However, outdated laws, predating 1994, including the Hazardous Substances Act No. 15 of 1973 and the Fertilizers, Farm Feeds, Seeds and Remedies Act No. 36 of 1947, are resulting in human rights violations and abuses.**

⁸⁷ See <http://websites.umich.edu/~snre492/brian.html>. In 2002, the Government launched a multipoint plan to investigate and resolve the pollution problems. A study commissioned found that attending school in south Durban, as opposed to the north, was significantly linked to an increased risk of persistent asthma.

⁸⁸ See <https://wedocs.unep.org/handle/20.500.11822/33287>.

⁸⁹ Presentations to the Special Rapporteur by national and provincial government departments.

⁹⁰ See https://www.dffe.gov.za/sites/default/files/docs/2020nationalwaste_managementstrategy1.pdf.

104. South Africa is also a leader in championing the right to a healthy environment. Its Constitution enshrined that right in 1996 and its courts have rendered landmark judgments to enforce it.

105. Nonetheless, deficiencies in monitoring compliance and enforcement erode confidence in the rule of law. While the responsibility for compliance is fragmented across departments, South Africa has valuable tools available to it to coordinate efforts, such as the Multistakeholder Committee on Chemicals Management and the so-called Green and Blue Scorpions.

106. The rights to information, public participation and an effective remedy are embedded in the laws and environmental policies of South Africa. Nonetheless, information related to hazardous substances and toxic pollution is often lacking or inaccessible; public participation processes are widely perceived as a “box-ticking” exercise; and violations by polluters are left unchecked.

107. In South Africa, air pollution, largely caused by the burning of coal, imposes a heavy toll on the health of the people and on the economy. While the country has in place national air quality standards, they are less protective than the relevant WHO guidelines. Also, the Government has granted exemptions to powerful actors and its ability to monitor compliance is undermined by non-functional equipment.

108. South Africa has taken important steps towards a just transition, such as the establishment of the Just Transition Framework and the Just Transition Partnership. A pilot just transition programme is also under way in Komati. However, the licensing of new greenhouse gas-intensive projects undermines these efforts.

109. While mining has brought important benefits to the South African economy, it has also perpetrated irreversible harms on human health and the environment, particularly for marginalized communities in informal settlements. In the absence of warning signs and adequate buffer zones, they live under the threat of radioactive tailings dams and acid mine drainage, which pollute their water sources and contribute to geotechnical instability. Furthermore, mining companies often evade environmental remediation obligations upon closure, which externalizes costs to communities and the State.

110. South Africa has taken active measures to control a number of hazardous substances. While the use of mercury is regulated, reports suggest it is still rampant among *zama zamas* in the small-scale gold mining sector. Following the ban on asbestos in 2008, South Africa is faced with the footprint of derelict asbestos mines and roofs containing asbestos. South Africa has also issued regulations to phase-out polychlorinated biphenyls but faces significant challenges in identifying inventories of them. The country has obtained GEF funding to address these challenges and to expand the capacities of the private sector for the elimination of hazardous substances.

111. Commercial farming practices in South Africa rely heavily on hazardous pesticides. The Special Rapporteur raises concerns at the lack of transparency and apparent corporate capture in pesticide registration. Nonetheless, he welcomes the improvements made under the new regulations instituted after his visit. He stresses that enforcement efforts must also be ramped up, as inadequate controls have led to a range of violations, including the prevalence of “street pesticides” to combat pest infestations in informal settlements.

112. Twenty-five per cent of domestic waste in South Africa is not formally collected and is illegally dumped. Landfills are reaching the end of viable life. In view of these challenges, the Special Rapporteur was pleased to learn about the efforts to transition to a circular economy and integrate informal waste pickers through the national waste management strategy.

113. South Africa is a country with enormous potential. Its people and environment are two of the country’s most valuable assets and must be protected from the detrimental impacts of toxic pollution fuelled by corporate greed and government inaction.

114. Overcoming the legacy of environmental racism has been a huge undertaking for South Africa. The Special Rapporteur welcomes efforts in that direction and offers his technical support to South Africa in that regard.

Recommendations

A. Governance and accountability

115. The Special Rapporteur recommends that the Government:

- (a) Clarify overlapping roles and responsibilities of different public authorities to ensure accountability;
- (b) Strengthen coordination between the various public authorities in charge of regulating and enforcing activities involving hazardous substances and wastes;
- (c) Institute measures to ensure the accessibility and comprehensibility of information provided by industry to communities in public participation processes;
- (d) Implement measures to ensure that public engagement in various licensing and environmental authorization processes is meaningful, including by specifying the role of traditional leaders;
- (e) Empower marginalized groups and communities to meaningfully engage in public consultation processes;
- (f) Ensure that cultural and spiritual rights are considered prior to prospecting or mining rights being granted;
- (g) Strengthen efforts to address historical inequalities that hinder access to the courts;
- (h) Strengthen the enforcement capacity of teams such as the Green Scorpions and Blue Scorpions;
- (i) Enforce stronger measures against non-compliant public entities with clear consequences for non-compliance;
- (j) Prioritize the maintenance of critical infrastructure in budget allocations, including for waste management, water, wastewater and energy;
- (k) Increase public-private partnerships in efforts around the environmentally sound management of hazardous substances and wastes.

B. Hazardous substances

116. The Special Rapporteur also recommends that the Government:

- (a) Ratify the Bamako Convention;
- (b) Launch intensive awareness-raising campaigns on the dangers of hazardous substances and wastes, and the necessary protective measures;
- (c) Conduct epidemiological studies to investigate the risks associated with exposure to toxic pollutants;
- (d) Invest in technologies that make detection of hazardous substances, such as mercury, easier for customs officials;
- (e) Secure access to an effective remedy and compensation for victims of hazardous incidents and poisoning, including those affected by the UPL fire, former Thor Chemicals employees and victims of pesticide poisoning.

C. Air pollution and just transition

117. The Special Rapporteur further recommends that the Government:

- (a) Prohibit rolling postponements or exemptions of compliance with minimum emissions standards;
- (b) Align national air quality standards with WHO guidelines;
- (c) Ensure regular maintenance of air quality monitoring stations;
- (d) Ensure that cumulative impacts and background pollutant levels are taken into account in environmental impact assessments;
- (e) Invest in upskilling of communities to enable them to find alternative employment to that in polluting industries, particularly under just transition initiatives;
- (f) Stop licensing new greenhouse gas-intensive projects;
- (g) Set up infrastructure and waste management plans for new waste streams from renewable energy technologies;
- (h) Seek out technology transfer opportunities in addition to funding under the Just Energy Transition Partnership;
- (i) Promote localization in just transition projects.

D. Mining

118. The Special Rapporteur recommends that the Government:

- (a) Enforce mandatory and adequate buffer zones between mining operations, including tailings facilities, and communities, including informal settlements;
- (b) Protect water sources from the abuse of the mining industry;
- (c) Require adequate financial provisions for remediation in mining operations;
- (d) Ensure that the draft regulations on financial provisioning address the issue of transfer of rights, which enables companies to pass on their environmental liabilities;
- (e) Establish a management plan for ownerless or derelict mines;
- (f) Promote non-mercury technology alternatives in mining activities;
- (g) Implement more sustainable solutions for the treatment of acid mine drainage, beyond pH adjustment.

E. Pesticides

119. The Special Rapporteur also recommends that the Government:

- (a) Prohibit aerial spraying;
- (b) Take decisive action to ensure the environmentally sound management and disposal of pesticide containers and obsolete stockpiles, including traceability mechanisms;
- (c) Promote sustainable agricultural practices and small farming;
- (d) Ban imports of pesticides that are banned in their country of origin;
- (e) Ensure access to sanitation services in informal settlements to eliminate demand for street pesticides;
- (f) Outline clear mechanisms for public participation in pesticide registration processes;

- (g) Find alternative solutions to toxicological testing requirements to tackle the issue of the backlogs in State toxicology centres;
- (h) Enhance labelling requirements to include specifications for buffer zones and non-target areas;
- (i) Initiate a training programme for farm workers on their rights and obligations under the law, the dangers of pesticide misuse, safe handling of pesticides and how to read labels;
- (j) Make pesticide labels available in more languages, particularly those accessible to farm workers;
- (k) Ensure access to adequate health care for farm workers.

F. Waste management

120. The Special Rapporteur further recommends that the Government:

- (a) Introduce incentives to encourage waste separation at source and recycling;
 - (b) Continue efforts to ensure decent working conditions for waste pickers, including the provision of personal protective equipment.
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