Evaluating the feasibility of South Africa's approach to just transitions.

Evaluating the Feasibility of South Africa's Approach to Just Transitions

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DISSERTATION

Submitted to the Faculty of Economics and Finance for the degree

Masters Dissertation

(Master of Economics)

in

Comparative Local Development

in the

FACULTY OF ECONOMICS AND FINANCE

at the

TSHWANE UNIVERSITY OF TECHNOLOGY

under the supervision of

Dr Rasigan Maharajh

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ABBREVIATIONS

CER: Center for Environmental Rights

GEAR: Growth, Employment and Redistribution

CEPR: Center for Economic Policy Research

EPI: Environmental Performance Index

HRBA: Human Rights Based Approach

IPCC: Intergovernmental Panel on Climate Change

IRP: Integrated Resources Plan

LSM: Living Standards Measure

NDP: National Development Plan

NDC: National Determined Contributions

NPC: National Planning Commission

OECD: Organisation of Economic Cooperation and Development

RDP: Reconstruction and Development Programme

RSA: Republic of South Africa

SAFTU: South African Federation of Trade Unions

SDGs: Sustainable Development Goals

StatsSA: Statistics South Africa

TIPS: Trade and Industrial Policy Strategies

SARB: South African Reserve Bank

CHAPTER 1: INTRODUCTION

Since the dawn of democracy in 1994, South Africa's democratic government has been on a drive to foster economic growth, development and transformation (RSA, 2019). However, the prospect to attain these ideals has remained elusive as the country has been unable to substantively dismantle the triple threats of poverty, inequality and unemployment as evinced by high Gini Coefficient metric which casts South Africa as one of the most unequal societies in the world. The Gini coefficient is a metric which quantifies the amount of inequality that exists in a population, where zero (0) stands for equality and one (1) represents extreme inequality (OECD, 2017). South Africa recorded Gini Coefficients of 0.67 in 2006 and 0.65 in 2015 (StasSA, 2020).

The foregoing implies that the democratic government is facing stern challenges in substantively bridging the income, wealth, social and spatial divides between the haves and the have nots. The triple challenges of high rates of poverty, inequality, and unemployment continue to afflict South Africa. In the context of an upper-middle-income country, South Africa grapples with a striking poverty rate, with over 55% of its population living below the national upper-bound poverty line of R992 per person per month in 2015 prices. This is according to the World Bank report (WorldBank, 2018).

What compounds the outlook for South Africa is that not only is the country’s economic base (accumulation regime) facing the threat of dwindling natural resources (SAFTU, 2020), the economy is the biggest carbon emitter in the continent and among the top 20 carbon emitters the world over (SAFTU, ibid), thus fuelling not only the national climate crisis but the imminent global environmental apocalypse if the tide is not turned through socially, economically and environmentally Just Transitions to sustainability. Exacerbated by the Covid-19 pandemic, South Africa is therefore confronted by a crucial, yet unenviable task of actualising the “Just Transition” which in its core: is the balancing act of eradicating poverty without blowing the fuses of the planet.

Environmental Degradation and Climate Change

South Africa has had a protracted reliance on fossil fuels based accumulation regime and energy production. Notably, the national power utility Eskom, has been a major contributor to climate change through its coal fuel based power stations.

Coal constitutes about 90 percent of South Africa's electricity generation and 74 percent of its total primary energy supply. Coal has been a significant factor in the country's economy for more than a century (CIF, 2020). The consequences of over reliance on coal are apparent particularly in Mpumalanga, a region that has been singled out as one of the most polluted areas on the planet (Meth, 2018).

Key to note is that environmental degradation in this area, largely characterized by air and water pollution, does not only pose health hazards but it also endangers livelihoods of local communities while exacerbating the global climate crisis. The acute levels of pollution attest to the unsustainable path that South Africa's energy production, and accumulation regime has charted.

Energy Poverty and Infrastructure Challenges

Post-apartheid, (1994) population growth in South Africa has ballooned from 48 million to 60.6 million (StatsSA, 2022). Eskom has not amassed requisite capacity to match the energy demands of the exponentially growing South African population. This capacity gap has resulted in pronounced energy poverty, most notable in the form of frequent load shedding. Over the past years, the normalization of load shedding has become synonymous with South Africa's energy landscape. This has created a scenario where access to electricity, which is meant to be a public good, has become a privilege rather than a basic right.

Layered and Deep Rooted Inequality in South Africa

Related to the foregoing, South Africa remains one of the most unequal societies globally, as evidenced by the Gini coefficient measure. It is also important to underscore that inequality in

South Africa is not a monolithic phenomenon. Inequality in the country is notably racialized, gendered, classed and spatially segmented (Orthofer, 2016). According to research data, the Gini coefficient in South Africa has exhibited a notable, statistically significant average annual increase of 0.35 units throughout the entire period from 1960 to 2015 (Mtapuri et al., 2021).

Just Transition

The current socio-economic landscape leaves most South African communities in the margins of the mainstream economy with the poor bearing the hardest brunt of environmental degradation and energy poverty. This worsens and perpetuates the plight of those who have historically suffered systemic discrimination and exclusion.

This is worsened by the imminent decline of the coal sector: "...market and policy signals, coupled with targets to reduce greenhouse gas emissions, indicate that the decline of the coal sector will be inevitable" (CIF, 2020). In the given backdrop, the government of South Africa, through the National Planning Commission (NPC) in the presidency; made commitments to curtail the interconnected web of socio-economic ills facing the country: "An equitable transition must protect the poor and vulnerable from the transitional costs associated with mitigation, such as increased costs of energy, food and transport, job losses in carbon-intensive industries, and the demand for different skills" (NDP 2012, p. 211).

In its 12 point plan to manage a just transition outlined in the NDP (NDP, ibid), the South African government states that the shift towards an environmentally sustainable, low-carbon economy will serve as a central objective seamlessly embedded in the strategies of government departments, integrated development plans, and forthcoming editions of the Medium Term Strategic Framework, as emphasized in the National Development Plan (NDP, ibid).

In line with the government's commitment to the just transition, the Integrated Resources Plan of South Africa (IRP), driven by the Department of Energy, underscores the government's commitment to the Just Transition, stating that the timing of decarbonisation or the transition to a low-carbon economy must be handled in a socially just manner that is sensitive to the critical impacts on jobs and local economies (IRP, 2019).

The NDP’s deliverables are hinged on United Nations 17 Sustainable Development Goals (SDGs). Based on the SDGs framing of the NDP, with a 2030 deadline for the deliverables, a critical evaluation of the feasibility of South Africa’s approach to Just Transitions is essential to determine whether these efforts align and are commensurate with the aspirations articulated in the Sustainable Development Goals (SDGs), specifically SDGs 1, 6, 7, 8, and 13.

This study endeavours to assess South Africa's strategies to Just Transitions through the frame of five (5) selected SDGs.

- **Goal 1:** End poverty in all its forms everywhere
- **Goal 6:** Ensure availability and sustainable management of water and sanitation for all
- **Goal 7:** Ensure access to affordable, reliable, sustainable and modern energy for all
- **Goal 6:** Ensure access to clean water and sustainable sanitation for everyone
- **Goal 8:** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- **Goal 13:** Take urgent action to combat climate change and its impacts

Rationale for the 5 SDGs

The study seeks to evaluate the adequacy of current policies and strategies in achieving the lofty goals set forth by the SDGs and encapsulated in South Africa’s NDP. The study will deploy the five (5) SDGs outlined above to interrogate the nexus of environmental sustainability, energy poverty, inequality, and South Africa's commitment to Just Transitions.

Four Pillars of Sustainability Framework

The Four Pillars of Sustainability, encompassing environmental, economic, social, and adaptive sustainability, speak to the selected SDGs. SDGs 1,6,7 and 13 particularly present a set of critical dynamics required to provide a structured lens for assessing sustainability.

The Four Pillars of Sustainability constitute a conceptual framework that provides a comprehensive and holistic approach to understanding and achieving sustainability in various contexts. The four pillars are centred on environmental, social, and economic aspects (Sandholdt , 2022). The four pillars, which are interconnected and interdependent are outlined below.

Environmental Sustainability: This pillar is focused on the preservation and protection of the natural environment and its resources. It emphasises practises that minimise negative impacts on ecosystems such as pollution reduction, biodiversity conservation as well as addressing climate change. It also centres responsible use and management of resources, use of renewable sources, waste reduction and sustainable land use. This pillar is akin to SDG 13 which is focused on addressing climate change including efforts to mitigate its impacts and to promote environmental sustainability as well as greater resilience and adaptation to the changing climate.

Social Sustainability: Social sustainability is focused on the well-being of the current as well as future generations of humanity. The pillar centres social equality, justice and quality of life. Key fundamentals of this pillar are healthcare, social services, education, human rights, cultural preservation, community engagement as well as the promotion of inclusive societies that provide opportunities for all (Sandholdt, ibid).

Social sustainability incorporates issues related to poverty alleviation, which aligns with SDG 1's objective to end poverty in all its forms. Access to clean water and sanitation (SDG 6), is a fundamental aspect of well-being and social equality, as mentioned in the context of social sustainability. Sustainable and affordable energy sources (SDG 7), are crucial for improving the quality of life, as they enable access to vital services and technologies, promoting social sustainability. Social sustainability emphasizes the importance of providing opportunities for all, promoting decent work, and ensuring social justice, which directly relates to the objectives of SDG 8.

Economic Sustainability: This pillar upholds the long term viability of economic systems and activities. The pillar involves ensuring that economic growth and development are socially friendly and environmentally responsible. The pillar centers responsible business practices, job creation, poverty reduction, fair wages, ethical financial systems and efforts to curtail resource depletion or economic collapse. This pillar can be mapped to SDG 8 which is focused on decent work and economic growth with the primary objective of promoting sustained, inclusive, and sustainable economic growth, full and productive employment, as well as decent work for all.

Cultural Sustainability: The fourth pillar upholds the value of nurturing cultural heritage, identities and traditions. The pillar prioritizes cultural diversity as well as identity as integral to a sustainable society. Supporting principles for this pillar include: respect for indigenous knowledge, cultural preservation, protection of languages, arts, and traditions. Cultural sustainability is not possible without the attainment of SDG 1, (ending poverty in all its forms). Cultural sustainability also requires equal access to water and sanitation services (SDG 7), as well as affordable and clean energy (SDG 7).

Energy Trilemma Framework

The Energy Trilemma framework adds further depth to the rationale of deploying the selected five SDGs in the study. The framework is useful in highlighting the complex challenges related to energy policy and sustainability (Kang, 2022).

Energy Access (SDG 7): Energy access is a central aspect of the Energy Trilemma, underscoring the need for reliable, affordable, and clean energy for all. SDG 7 (Affordable and Clean Energy) directly corresponds to this aspect, addressing energy poverty and promoting access to sustainable energy sources.

Energy Security (SDG 13): Energy security is crucial for a stable and sustainable energy supply. SDG 13 (Climate Action) is linked to energy security as it relates to climate adaptation and mitigation efforts, which are critical and essential for securing the energy sector against the risks posed by climate change.

Environmental Sustainability (SDG 6 and 13): The Energy Trilemma also underscores the importance of environmental sustainability in energy policy. SDGs 6 (Clean Water and Sanitation) and 13 (Climate Action), directly align with this dimension. Clean energy production and climate mitigation are integral to environmental sustainability in the energy sector.

The Four Pillars of Sustainability and the Energy Trilemma frameworks, present a rationale for deploying the selected SDGs to evaluate the feasibility of South Africa's approach to Just Transitions. By delimiting the scope of SDGs to only these five, instead of the whole set of 17, the approach allows for a laser focused and comprehensive examination of South Africa's challenges and prospects in the context of Just Transitions and sustainability, while also recognizing the interconnectedness and complexities inherent in five selected SDGs and the broader scope of entire 17 SDGs.

Research Objectives

The main objective of the research is to establish whether or not approaches by South Africa's government are feasible for yielding Just Transitions. Secondary research objectives that augment the main objective are:

- Mapping out South Africa's macro-economic ideologies and how they inform the shape, form and pace of development, transformation and sustainability.
- Problematizing South Africa's climate change adaptation and mitigation approaches in the context of national and international sustainability targets.

- Positing viable and feasible pathways for expediting the reforms in a shape and pace ambitious enough to yield Just Transitions.

Justification of the Study

The study plugs a significant gap in illuminating how South Africa's socio-economic fortunes are hamstrung by the inherent capital driven ideological predispositions of the country's macroeconomic policy regime. More pointedly, through mapping out and problematising extant flaws in the country's theory and praxis of sustainable development, the study will posit considerable pathways that South Africa (and other developing countries), particularly in the global south; can adopt to expedite sustainability and transformation in their societies.

The study will also create an impetus for further research particularly in the arenas of:

- People centred as opposed to market centred ideologies and state-craft for developing countries.
- Policy formulation for sustainable development.
- The curious disconnect between the outputs of pedagogy (plus research and development) and policy formulation, implementation and monitoring and evaluation particularly in developing countries.

Through mapping out existing flaws in the country's theory and praxis of sustainable development, the study will posit considerable pathways that South Africa, and other countries in the global south; can adopt to expedite transformation, sustainability and midwife inclusive societies.

Theoretical Perspectives

This subsection presents the theoretical frameworks that guide and underpin the evaluation of South Africa's approach to Just Transitions. The theoretical frameworks have been chosen particularly for the multi-dimensional perspective and nuanced insights they offer.

Neoliberalism and Macroeconomic Policy Regime

Neoliberalism represents a distinct phase in the development of capitalism, emerging in the aftermath of the 'post-war-boom' period. It is commonly characterized by three interconnected aspects:

(a) Neoliberalism is a framework encompassing a combination of institutions, policies, and practices.

(b) It serves as a structure for economic, social, and political sustainability, driven by financialization.

c) It functions as a capitalist system benefiting a minority while often detrimental to the majority.

This multifaceted system of neoliberalism comprises a multitude of features in ideology, practice, and policy. Bayliss et al. (2016) argue that at its core, its fundamental tenets include the promotion of commercialization, the privatization of state-owned sectors, decentralization, market deregulation, the transformation of public entities and resources into corporate entities, and the reduction of the state's involvement in providing social services. This lens will present trenchant insights in uncovering ideological flaws in South Africa’s approach to the Just Transitions.

Human Rights-Based Approach (HRBA)

HRBA is a theory grounded in international human rights principles and norms. The theory focuses on human rights as the central object of all developmental processes, spanning environmental as well as economic transitions. HRBA upholds the indivisibility and interdependence of human rights and emphasizes the values of equality, non-discrimination, transparency, participation as well as accountability on decision making, policy formulation and policy implementation.

The South African government has constitutional obligations to safeguard the social, political and economic rights of South Africans. To this end, Nyamu-Musembi et al., (2004) argue that entities whose work is human right based must interrogated for the extent to which such entities enable "... those whose lives are affected the most to articulate their priorities and claim genuine accountability from development agencies" (Nyamu-Musembi et al., ibid).

The scholars further argue that those whose lives are affected the most are the best placed to induce accountability, the degree to which agencies develop a critical self-awareness and actively confront inherent power imbalances in their interactions with individuals (Nyamu-Musembi et al., ibid).

Application to Just Transitions

For the main focus of this study: which is the evaluation of South Africa's approaches to the Just Transitions: The HRBA lens, as a normative framework, will be instrumental in placing the country's policies and practices under the microscope. The framework is particularly insightful in examining the following:

Equity and Non-Discrimination: HRBA advocates for the equitable distribution of benefits and rewards. This lens will be helpful in determining the extent to which South Africa's approach to just transition has addressed poverty, inequality, disparities and discrimination especially with regards to the marginalised and vulnerable classes of society.

As Schmitz (2012) notes, "HRBAs seek to frame poverty in the language of international human rights standards and transform passive recipients of aid into empowered rights-holders" (Schmitz ibid).

Participation and Empowerment: HRBA espouses substantive involvement of affected communities as well as stakeholders in decision making and policy processes. In this regard, the theoretical framework will be useful in exploring the extent to which the country's approach to

Just Transitions fosters meaningful participation while empowering sectors of society and stakeholders affected by the transitions.

Accountability and Redress: HRBA demands accountability where there have been human rights violations. The framework also demands mechanisms for redress. In this regard, the conceptual framework will be helpful in examining the extent to which South Africa has put in place mechanisms for accountability and to address the adverse effects of transitions and the provision of remedies commensurate with the scale of the impact that affected individuals and communities may suffer.

The dissertation comprises the following chapters: introduction, methodology, literature review, data collation and analysis, recommendations, and conclusions. The introduction presents the context and scope of the research objectives, providing the basis for the methodology to be used. The methodology outlines the framework of the study suited to the nature of the research objectives and the materials to be accessed and analyzed. The literature review scans different types of content and resources in the form of official government reports, books and research materials, public statements, and various forms of data that are admissible for research purposes. The study then proceeds to present data analyzed in a systematic way using the selected SDGs to give structure and coherence to the data and its analysis. The study then transitions to recommendations that span actionable pathways and policy positions to address the problem, as well as recommendations for future studies. The study then closes with a conclusion showing how the data analyzed answered the central research objectives.

In light of the critical need to assess the feasibility of South Africa's approach to Just Transitions within the selected framework of SDGs, the following chapter delves into a semi-systematic literature review research methodology that enables for both qualitative as well as quantitative assessment of data to meet the research objectives.

CHAPTER 2: METHODOLOGY

To underscore the rationale behind choosing a semi-systematic literature review as the preferred research methodology, it is imperative to consider that the selection of a research methodology should align with the research type and effectively support the data collection process. It is crucial that regardless of the chosen approach or methodology for the study, the data collection methods must be appropriate and capable of fulfilling the study's objectives (Opoku, 2016). In line with the foregoing it is vital that the selected data collection technique provides sufficient data to adequately address the research objectives and achieve the study's overarching goals.

In the ever-evolving fields of economics and development, new knowledge is constantly generated in various disciplines, often taking on fragmented, interdisciplinary, and multidisciplinary forms. This poses a challenge for researchers aiming to stay abreast of the latest developments in their respective areas and evaluate the collective evidence on specific research topics. To tackle this challenge, the literature review method has gained increasing importance. However, traditional literature reviews are frequently conducted in an ad hoc manner, lacking the rigor and depth required to ensure their quality and credibility (Snyder, 2019). A semi-systematic literature review approach, chosen for this study, effectively addresses both qualitative and quantitative aspects of research. The method is well-suited for identifying themes in existing bodies of knowledge, uncovering the historical context surrounding the issues, and applying theoretical models for analysis.

As the scope of study primarily involves assessing the feasibility of South Africa's approach to Just Transitions, a semi-systematic review of literature will scaffold this evaluation with the objective of spotlighting deficiencies in South Africa’s approach to Just Transitions. The methodology will also be useful in highlighting areas that require more attention in terms of strategy and resources to advance South Africa's journey towards a more sustainable future. Consequently, the study necessitates a research methodology such as semi-systematic literature review, which is conducive to exploring relevant bodies of knowledge, literature, policy documents, reports, and statistical data, among other sources.

Research Design

As the study will involve some qualitative forms of analysis as well as a review of some quantitative forms for data and analyses, a semi-systematic literature review methodology will yield an analytical framework that is suited for the nature of the data, scope and objectives of this study. As Just Transitions involve complex intersectionality and interconnections across the environmental, economic, and social dimensions, there is a need for a comprehensive analysis that captures diverse perspectives and data sources.

The semi-systematic literature methodological approach provisions for the flexibility and adaptability required in data collection as well as analysis. In the field of developmental economics, semi-systematic literature review as a research methodology is useful for the benefits outlined below.

Establishing Context: Literature review methodology provides a comprehensive overview of extant literature on a given subject, as well as theories and conceptual frameworks related to topics within the development and economics realm (UNF, 2022). This tenet is crucial for giving context and conceptual grounding to the study.

Identifying gaps: A synthesis of existing literature enables the identification of gaps in the focus body of knowledge. Gaps identified can be brought to context to give rationale to the study and give pointers to further possible studies particularly in addressing specific developmental challenges.

Insights From Quantitative and Qualitative Data: Literature review employs some benefits of the mixed methods approach to research as the method yields insights from both quantitative and qualitative data (UNF, ibid).

Literature review also yields useful policy insights, enables hypothesis generation as well as interdisciplinary insights.

This approach is envisaged to enable a mining of nuanced insights to meet the research objectives, given the multi-dimensional scope of the study.

Data Collection Methods

Within the framing of the 5 selected SDGs, the study will deploy a semi-systematic literature review method focused on reviewing qualitative and quantitative literature and data sources that pertain to the sustainability challenges that South Africa is facing as well as the ideological and strategic approaches that the country has mounted towards achieving transformation and sustainability. The use of both qualitative as well as quantitative data is envisaged to provide comprehensive insights into the efficacies of South Africa's strategies and efforts in achieving the set sustainability goals. The chosen methodology is calculated to help arrive at a comprehensive understanding of the complexities of the national sustainability agenda in the broader context of the global sustainability campaign.

Data Collection Instruments

To conduct qualitative as well quantitative data collection and analysis, the research methodology will involve the use of the following data collection instruments.

<u>Keyword Searches:</u> Relevant keywords pertaining to the scope of the study will be used to retrieve relevant literature from various digital and offline sources. A combination of keywords and some Boolean operators (AND, OR, NOT) will be deployed to construct search queries designed to yield relevant documents and various sources of data.

<u>Reference Lists:</u> Reference lists in consulted documents will be reviewed in the form of "snowballing" or "citation chaining", for the purposes of identifying additional sources related to the research topic.

The instruments above will be used together with content analysis tools to perform content analysis on relevant academic literature, books, policy documents, and reports from reputable sources related to sustainability challenges in South Africa, and related to the broader ideological and global framing of the sustainability drive. The set of literature and data reviewed will include peer-reviewed papers as well as relevant reports from government, non-governmental organizations, academia and various stakeholders in the arena of sustainable development.

The research methodology outlined in this chapter informs and gives structure to the study and paves the way for an in-depth analysis of the existing literature, which is crucial for assessing the feasibility of South Africa’s approach to Just Transitions.

CHAPTER 3: LITERATURE REVIEW

Given the background and objectives of the study outlined in the introduction, as well as the research methodology, this chapter is dedicated to a semi-systematic review of literature relevant to the scope of the study.

Literature on Macro-economic Policy Ideology and Theory

South Africa's macroeconomic policies are not ideologically neutral. As such, assessing the feasibility of the country's approach to just transition must take off from an ideological level given that just transition as a phenomenon is informed by ideologies of political economy as well as socio-economic justice.

The volume is edited by Satgar (ed. Satgar, 2018) on the climate crisis with a spotlight on South African and global democratic eco-socialist perspectives, presents cogent insights that turn the ideological framing of the climate crises and the ideological choices underpinning the response right on the head. Exploring the climate crisis and the systemic alternatives, The volume recalibrates the climate crisis as a capitalist crisis. The volume is immensely useful in applying a political-economic framing of the government's response to the climate question particularly through the Nationally Determined Contributions (NDCs) and a coterie of adaptation and mitigation measures. At an ideological level, it is significant that the anthropogenic discourse within the Intergovernmental Panel on Climate Change (IPCC) sphere represents a paradigmatic shift from the Marxist ecological framing or eco-socialism, which was reflected in the ideology of the Kyoto Protocol.

Fisher's (2009, p. 6) book titled "Capitalist Realism" takes a dive into the ideological framing of capitalism and how this accumulation model has been entrenched as inevitable and indispensable. Citing Jameson and Zizek, Fisher (ibid) echoes , "It is easier to imagine the end of the world than it is to imagine the end of capitalism". As Fisher argues, the concept of "reality," which refers to our mental constructs or illusions of what is real, signifies capitalist realism. This term encapsulates the prevailing perception that capitalism is not only the sole workable political and economic system but has also made it seemingly inconceivable to envision any coherent alternative to it (Fisher, ibid).

The volume presents compelling insights that can be applied in exposing South Africa's invariably neoliberal macro-economic malaise demonstrable in the privatisation of almost all public goods (water, energy, education, security and health) and the neoliberal restructuring of State Owned Enterprises (SOEs). Over the past years, the privatisation crusade has been implemented in the pretext that it is only via a privatisation model that services can be rendered more efficiently.

Insights by Mohamed (2010) attest to the observations made by Fisher (ibid) with regards to the hegemony of capitalism. In his paper Mohamed (ibid) declares, “As a society, we have to tackle the big questions. Ultimately, we have to decide on the type of capitalist system we want in South Africa'' (Mohamed 2010). Mohamed’s remarks capture the mindset of South Africa's policy instruments where no radical alternative remedies are considered outside the “god” of capital. The sentiments captured in these pieces of literature are key for diagnosing the flaws and underpins of South Africa's macroeconomic policy regime and its contrived as well as ostensible neoliberal axioms.

The work by Collon (2021) brings up trenchant insights on how the climate crises can be linked directly to capitalism. Collon's paper is meaningfully digestible with Moore’s (2015) work on capitalism and its implications for ecology. The work introduces a paradigmatic shift in the framing of the climate crises from the Anthropocene to the more accurate "Capitalocene" which characterises the climate crises as a direct effect of capitalism.

Insights on the health impacts of coal fired power plants in South Africa (CER, 2017) are highly relevant to the scope of this study. The paper is useful for a localised context that acknowledges the ravage of capital on a global scale while identifying localised nuances of capital driven climate and environmental damage in South Africa. CER (ibid) presents the grim total health and human costs of Eskom's capital inclined industrial complex.

Charlotte du Toit (2004) takes a look at a neoclassical investment function of the South African economy. This paper casts investment on the supply-side model in South Africa's economy. This catalogue of literature helps to demonstrate how entanglements with internal white monopoly and foreign capital flows from the Global North are hindering the country's quest for bona fide radical transformation towards a just and sustainable economy.

Literature on South Africa's Praxis and Performance

Espousing a macro-economic ideology is one thing, praxis is another. It is critical to establish the links between macro-economic ideology, its praxis and performance of government with a view to map out how the links either aid or hinder the country's efforts aimed at accomplishing the just transition.

The resource by Sebake (2017) explores South Africa's economic policy positions and globalisation impact through an exposition on: "Neoliberalism in the South African Post-Apartheid Regime". The resource is handy for characterising democratic South Africa's shortfalls on attaining its deliverables of its 1994 social contract.

Closer to the governments praxis in the response to the climate crisis, South Africa's NDCs review by CER (2021) is critical as it takes deeper forensics into the figures of the NDCs under the Paris agreement. The resource is crucial for pointing out various inadequacies in the Updated NDCs, problematising the gap between the scale of the climate crisis and South Africa's commitment.

Paradigms of Sustainability

Todorov's (2006) model of sustainability is helpful in critiquing Post-apartheid South Africa's effort to improve the living standards of the masses and usher the country into a path of sustainable development. Deploying the Todorov's models, South Africa's quest for sustainability is facing various challenges that take the prism of these three paradigms, an ecological dimension, which is inalienably linked to socio-economic paradigm (shaped largely by a natural resource driven macro-economy and accumulation regime) and lastly; governance. The matrix and interdependence of these paradigms is best captured in Todorov's (2006) Interlocking circles model of sustainability illustrated in Figure 1 below.

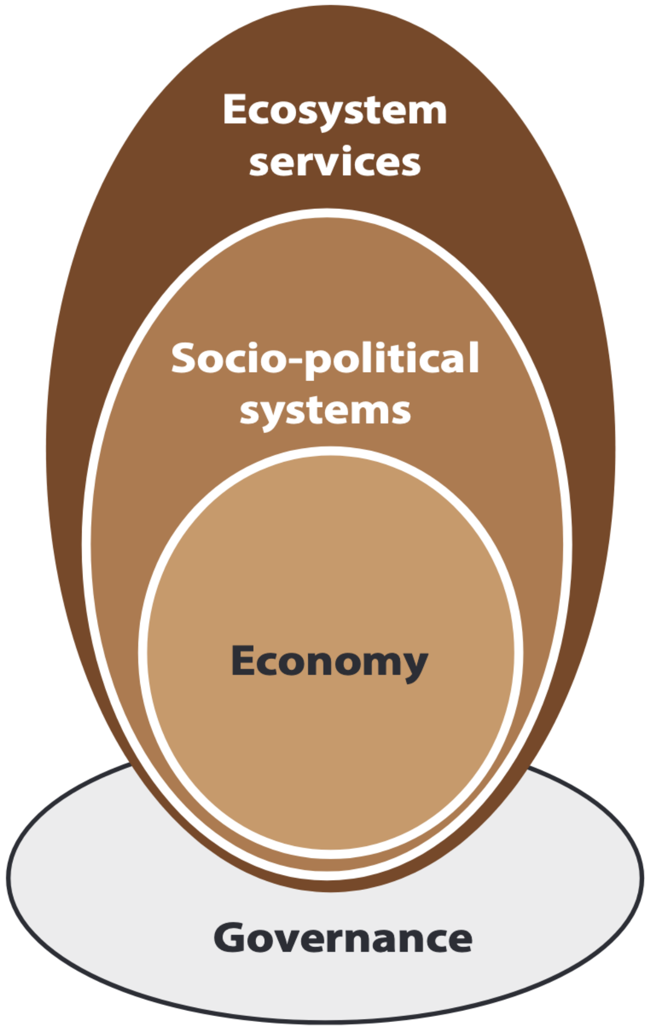

Figure 1: Interlocking circles model of sustainability

Source, (RSA 2012)

Todorov's representation of some insights from the Organisation for Cooperation and Economic Development (OECD) shed further light on South Africa's developmental challenges. On an ecological (geo-physical) front, South Africa faces a litany of environmental challenges. According to an Environmental Performance Review by the Organisation of Economic Cooperation and Development (OECD, 2013), South Africa's economy is one of the most carbon intensive economies in the world as indicated in Figure 2 below.

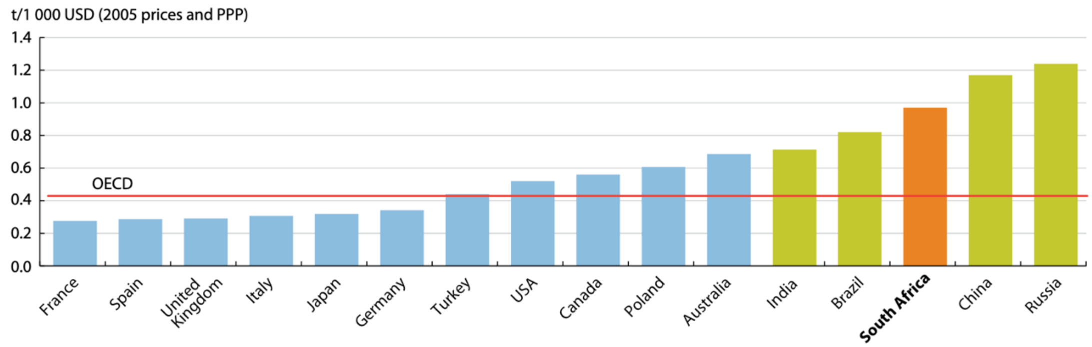

Figure 2: GHG Emissions Per Unit of GDP, 2010

Source, (OECD, 2013)

Literature from the Earth organisation corroborates the scenario painted in the preceding sections. With 77% of South Africa's primary energy needs provided by coal (Earth, 2020) (see Figure 3 below), according to Earth (ibid), what exacerbates the outlook for South Africa is that the economy is driven by an over-reliance on natural resources compounded by poorly coordinated and regulated mining resulting is major environmental damages. Emissions from South Africa's coal fire powered plants amount to almost half of the country's carbon emissions: "...Which has resulted in South Africa warming at a rate twice the global average and making droughts more extreme and frequent" (Earth, ibid).

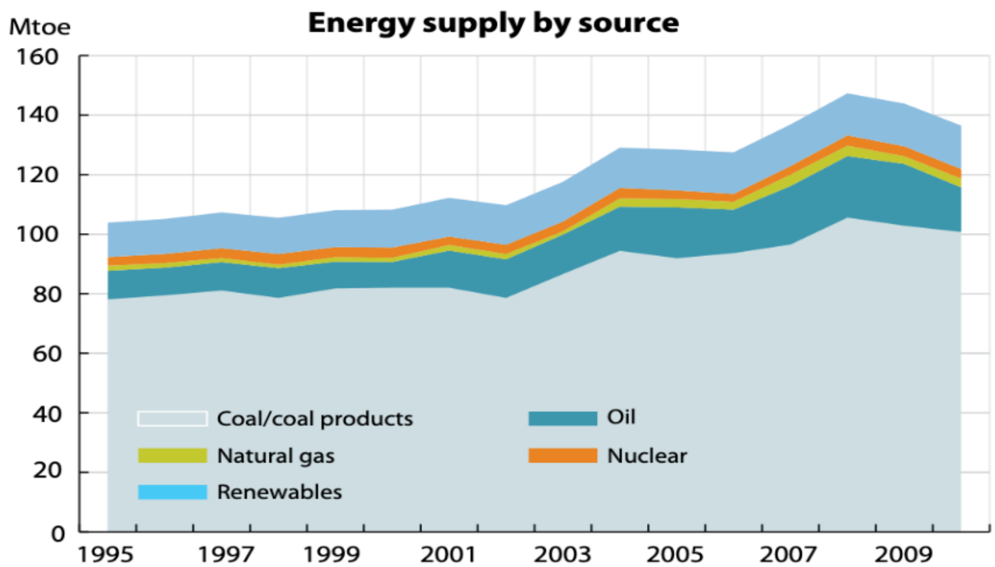

Figure 3: Energy Supply By Resource

Source, (OECD, ibid)

Earth combines various curated global indices on climate change, energy, pollution, policy, biodiversity and oceans to arrive at a global Index for the respective countries. According to the organisation, South Africa ranks at a disturbing 218th in the Global Sustainability Index.

Figure 4: South Africa's Global Sustainability Index

Source, (Earth, ibid)

ClimateReality (2018) also ranks South Africa at 142 out of 180 countries on the Environment Performance Index (EPI). The country is also facing a challenge of depleting water resources. This scenario has a knock on impact on the provision of other critical services such as waste collection, sanitation, health, etc. These insights are immensely useful in framing the interconnected complexities of South Africa’s quest for sustainability and the gravity of the challenges faced.

On the socio-economic paradigm, (and in relation to the highlighted ecological problems), data from the WorldBank indicates that the government of South Africa is failing on its post-apartheid social contract aimed at improving living standards through eradicating poverty, inequality and unemployment. South Africa has been among its most unequal societies in the world, “…with a consumption expenditure Gini coefficient of 0.63 in 2015” (WorldBank, 2021).

Orthofer (2016), calibrates the contours of the inequality as raced (whites have more income and wealth than non-whites), gendered (males have more income and wealth than females) and spatialized (those living in high Socio-Economic Status (SES) communities have better income and wealth than citizens living in informal settlements and low (SES) zones. Tax and Survey Data interrogated by Orthofer (ibid), indicates that 10% of the country's population owns at least 90–95% of all assets.

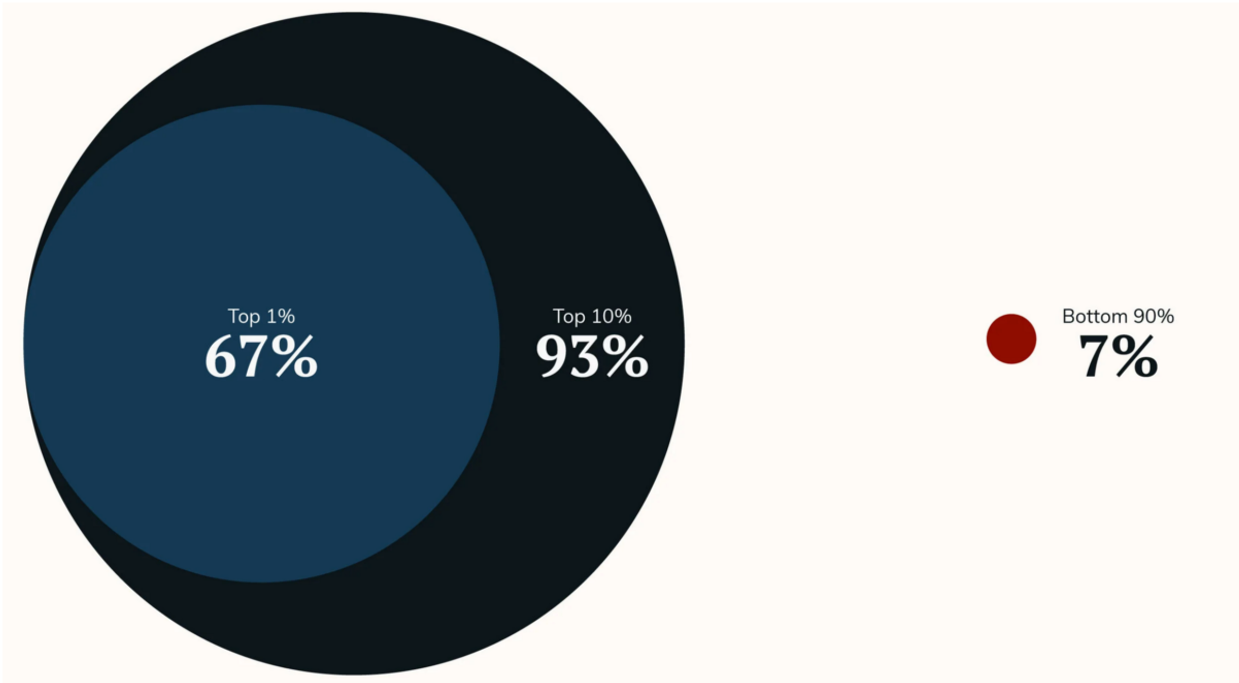

Figure 5: Wealth Inequality in South Africa

Source, (Mail & Guardian, 2019)

According to the data cited by Orthofer (Figure 5), South Africa's wealthiest 1% own 67% of all the country's wealth while the top 10% own 93% or the same. The research shows that the remaining 90% of South Africa's population, "...owns a paltry 7% of the country's wealth" (Orthofer, ibid). These research based insights are critical for quantifying the challenges South Africa is facing in the arena of achieving equality and sustainability. The insights are also crucial for quantifying the inadequacies of the country's efforts to achieve Just Transitions.

South Africa's macroeconomic policy shifts from 1994

A scan of South Africa's macroeconomic policy framework regime by Maloyi (2016), indicates that the country has experimented with a number of policy frameworks since 1994. The country took off with a neo-Keynesian (public expenditure inclined) macro-economic policy regime such as the Reconstruction and Development Programme (RDP). One of the key deliverables of RDP was to address the enervating socio-economic legacies of Apartheid as evinced by the rural-urban divide. Within two years of the democratic dispensation African National Congress (ANC) led government shifted from the pro-developmental RDP framework (notwithstanding its inherent deficiencies), to the market driven (neoliberal) Growth, Employment and Redistribution (GEAR) macro-economic policy framework.

Macroeconomic Strategy	Development Objectives
Reconstruction and Development (RDP)	▪ Meeting Basic Needs ▪ Developing Human Resources ▪ Building the economy
Growth Employment and redistribution Strategy (GEAR)	▪ Restructure the Economy ▪ Create Jobs ▪ Counter high inflation
Accelerated and Shared Growth Initiative for South Africa (AsgiSA)	▪ Halve unemployment and poverty ▪ Improve capacity of the state

Figure 6: South Africa's macroeconomic policy shifts from 1994 to 2010

Source, (Maloyi, ibid)

What is observable from the reviewed literature, and adding to the problem definition, are the numerous policy shifts in a short space of time with notable inconsistencies across various government departments and organs of state particularly with regards to the pathways of sustainability South Africa must take.

After the 1994-2010 period, the government introduced the 2010 New Growth Path, which failed to achieve its intended objectives of creating five million jobs and a real GDP growth rate of 4% over the next 10 years. A 2020 report indicates an employment rate of 41.1% in 2010 and 40.5% in 2022 (Stats SA, 2021), indicating that approximately 1.6 million jobs were created in South Africa between 2010 and 2020. This highlights the inefficiencies of the New Growth Path macroeconomic policy action in 2010.

In 2019, the government shifted to the Economic Transformation, Inclusivity, Growth, and Competitiveness (ETIGC) strategy. The strategy aimed to confront the challenges of low growth, high and rising unemployment rates, yielding a grim economic outlook for South Africa. The ETIGC was designed to activate a number of economic growth drivers to bolster "economic transformation, support labor-intensive growth, and create a globally competitive economy" (RSA, 2029). However, this has not yielded the intended outcomes, as South Africa still suffers from low growth and a high unemployment rate of 32.1% in 2023 (StatsSA, 2024).

What has compounded the problematique are poor public service, corruption, dilapidating infrastructure, over financialization of the South African economy, a poor education system, and high disease burden. In this respect the government states: "Low growth perspectives in the coming years suggest poor prospects of eliminating poverty by 2030 as envisaged in the National Development Plan'' (NDP, ibid). Notwithstanding the nuances articulated in different bodies of literature illuminating inherent challenges in South Africa's quest for sustainability, there remains a gap in form of a structured and methodological assessment of South Africa's approach to Just Transitions. This is the gap that this study purports to plug.

Literature on Conceptual Framing on Just Transition(s)

The International Trade Union Confederation defines Just transition as:

"A Just Transition secures the future and livelihoods of workers and their communities in the transition to a low-carbon economy" (ILO, 2017). ILO (ibid) asserts that a Just Transition plan, grounded in the principles of social dialogue involving workers, unions, employers, government, and communities, offers assurance of improved, dignified employment, extended social safety nets, expanded training prospects, and heightened job stability for workers facing the impacts of global warming and climate change policies (ILO, ibid).

The Just Transitions framework presents important insights on how this can be achieved within the interconnected dimensions of social inclusivity, as well as the fair distribution of benefits and harms associated with rapid and substantial change (CIF, ibid). CIF (ibid) outlines how the labour unions in South Africa have built on work of other labour movements across the globe to develop a just transition policy in 2011. "The term has since been included in national development plans and policies, as well as international commitments related to climate change" (CIF, ibid).

CIF presents a helpful disambiguation of the phrases "Just Transition" and "Just Transitions". Recent years have witnessed an increasing emphasis on 'Just Transitions' within local, national, and international initiatives aimed at realizing the economic and social transformations essential for sustainable development, all while safeguarding the welfare of workers and communities through a more equitable apportionment of advantages and uncertainties (CIF, ibid).

Neo-Gramscian Theories Theoretical Framework

Based on the work of Antonio Gramsci, Neo-Gramscian theories emphasise the influential role and impact of ideology, power and hegemony on political economy. The theories are helpful in illuminating how dominant groups in a given society maintain control.

Influence exerted by formidable societal entities, ruling classes, or, in a Gramscian context, hegemonic forces and elite historic blocs mould international and domestic political structures in distinctive and occasionally contentious manners. This engenders fresh social paradigms and self-awareness in the process, with capitalist ideologies chiefly underpinning the dominance of bourgeois narratives within both national and global political dialogues (Ramesh, 2021). This theoretical framework also covers how counter-hegemonic movements can mount countervailing efforts against hegemonic control of the dominant groups. Neo-Gramscian perspectives can be deployed in evaluating the role of the state, civil society as well as various transactional actors in shaping social as well as economic change.

The theory will be particularly helpful in underscoring the efficacies of the change agents and coalitions in furthering the agenda of Just Transitions. In this regard, and in the fashion in which Winkler (2020) has explored just transition through the lens of a neo-Gramscian theories, the theory will be critical and useful in positing new cultural hegemony which is necessary for transforming the fundamental conditions of the 21st century (Winkler, 2021).

Application to Just Transitions

Neo-Gramscian theories can be useful as a critical lens, in examining the potency of South Africa's approach to Just Transitions within the country's broader political-economic milieu. This framework is useful for critiquing the following dimensions:

Power Dynamics: A Neo-Gramscian lens can unearth power structures as well as elites that wield significant influence in transitions. The framework can be used to determine how much sway the economic and political elites have on Just Transitions as well as in perpetuating existing inequalities. This is a crucial dimension in critiquing South Africa's approach to Just Transitions given the country tops the charts as one of the most unequal societies in the world.

Ideological Hegemony: The Neo-Gramscian framework is useful to determine the extent to which dominant ideologies, such as neoliberalism, influence and shape South Africa's approach to transitions. The theories are applicable for examining how ideological hegemony influences policy decisions as well as the distribution of benefits and burdens.

Counter-Hegemonic Movements: Neo-Gramscian theories put a magnifying glass on the presence and role of counter-hegemonic movements that agitate and advocate for more equitable transitions. This theoretical tenet will be useful in assessing the extent to which civil society, labor unions, and various social movements can exercise their agency to challenge dominant narratives and policies to promote just policies.

Synthesis of Theoretical Frameworks

In the light of the foregoing, it is envisaged that the synthesis of HRBA and Neo-Gramscian theories will yield a comprehensive analytical framework for evaluating South Africa's approach to Just Transitions. The approach will leverage normative considerations of human rights integrated with critical insights into power dynamics as well as ideological influences. This synthetical lens will guide the nuanced examination of feasibility, equity, and justice within the complex terrain of South Africa's quest for society-wide social and economic justice.

The insights gathered in this chapter provide a guiding frame towards the practical phase of data collation and analysis. The next chapter focuses on collating and analysing data related to South Africa's performance in the context of the five SDGs selected for purposes of evaluating the feasibility of South Africa's approach to Just Transitions in the context of the selected Sustainable Development Goals.

CHAPTER 4: DATA COLLATION AND ANALYSIS

Insights gleaned from our in-depth exploration of existing literature relevant to the study, pave the way for Data Collation and Analysis. This chapter is focused on collating and analysing data that will serve as the bedrock for our assessment of the feasibility of South Africa's approach to Just Transitions within the framework of the selected Sustainable Development Goals.

Rationale for the 2019 SDGs Country Report as the Main Data Source

The utilization of the 2019 SDGs country report by Statistics South Africa for this thesis, focusing on the feasibility of South Africa's approach to Just Transitions, is grounded the following:

A) The report presents a comprehensive coverage of all 17 Sustainable Development Goals (SDGs) in the South African context. This breadth enables a streamlined and consistent assessment of South Africa's performance concerning specific SDGs, 1, 6, 7, 8 and 13, relevant to the study.

B) The 2019 SDGs country report acts as a pivotal reference source, offering a holistic view of South Africa's progress and challenges related to the chosen SDGs. It serves as a valuable data and policy analysis baseline for an in-depth investigation into the feasibility of Just Transitions within the country.

C) Furthermore, the latest available source, the 2023 National Planning Commission (NPC) Report on the NDP, although it lacks new and comprehensive data, it references and corroborates the 2019 SDGs country report.

In summary, the reliance on the 2019 SDGs country report, supported by the 2023 NPC Report, provides a methodological, structured and comprehensive foundation for evaluating South Africa's approach to Just Transitions.

This section presents data collected on the following Sustainable Development Goals:

- **Goal 1:** End poverty in all its forms everywhere
- **Goal 6:** Ensure availability and sustainable management of water and sanitation for all
- **Goal 7:** Ensure access to affordable, reliable, sustainable and modern energy for all
- **Goal 6:** Ensure access to clean water and sustainable sanitation for everyone
- **Goal 8:** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- **Goal 13:** Take urgent action to combat climate change and its impacts

The main report (RSA, 2019), declares lack of data for most SDG 13 indicators, as such and in keeping with the consistency of using data from the 2019 report which derives much of its data from the report on South Africa’s Third National Communication under the United Nations

Framework Convention on Climate Change (RSA, 2018), some data will be mined from the 2018 report for the purposes of assessing South Africa's progress in meeting SDG 13.

Data on Goals, Target, Indicator and South Africa's Milestone (Progress)

SDG 1: Targets and Indicators

Sustainable Development Goal 1 (SDG 1) is aimed at addressing the global challenge of poverty by aiming to "End poverty in all its forms everywhere." The target associated with this goal is to eradicate extreme poverty by 2030, which is currently defined as individuals living on less than $1.90 a day.

To measure progress towards achieving this target, several key indicators have been established. Indicator 1.1.1 monitors the proportion of the population living below the international poverty line, taking into account factors such as gender, age, employment status, and geographic location (urban or rural). Indicator 1.1.2 assesses the proportion of individuals, including men, women, and children, living in poverty across various dimensions, as defined by each country.

In addition, Indicator 1.2.1 evaluates the proportion of a country's population living below its own national poverty line, allowing for a more tailored assessment of poverty within specific nations.

These indicators play a crucial role in tracking and measuring progress toward the overarching goal of eliminating poverty and ensuring that everyone, regardless of their circumstances, has access to basic necessities such as food, shelter, and education.

South Africa Goal 1 Indicators

Indicator 1.1.1 if focused on the percentage of the population living below the global poverty line. The indicator considers gender, age, employment status, and geographic distribution.

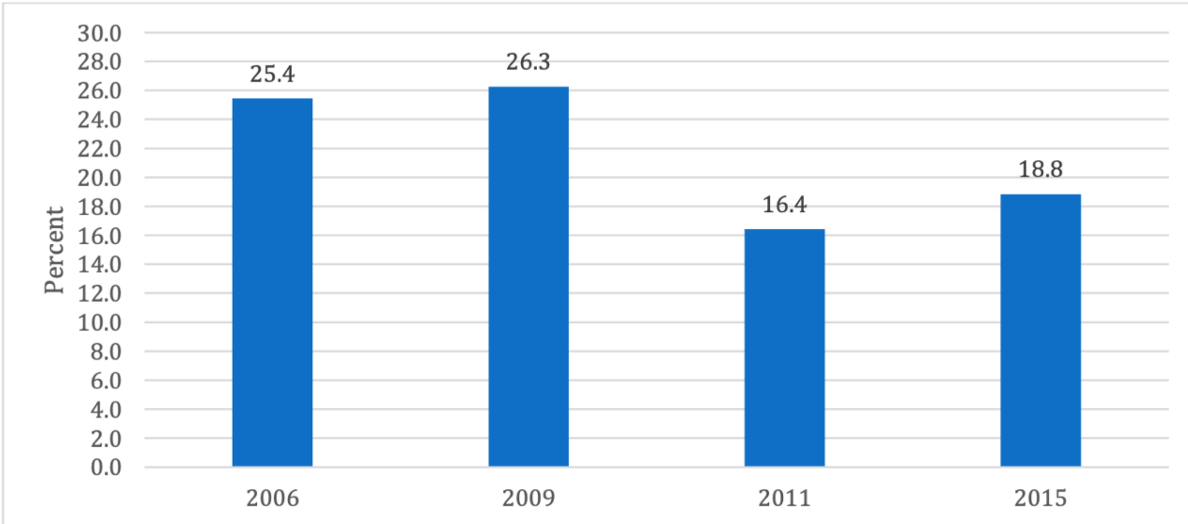

Figure 7: Percentage of South African population below the international poverty line, Source: (RSA, 2019)

Figure 7 above illustrates the changes in the population living in extreme poverty from 2006 to 2015. The data reveals a decreasing trend over this ten-year span, despite some intermittent fluctuations. Notably, there was a decline from 25.4% in 2006 to 18.8% in 2015, with temporary setbacks observed in 2006 and 2011, and a peak of 26.3% in 2009.

Indicator 1.2.1 evaluates poverty using national poverty lines, specifically the food poverty line (FPL), the lower-bound poverty line (LBPL), and the upper-bound poverty line (UBPL). Figure 8 below represents data on the FPL, indicating a slight reduction in the population living below this threshold.

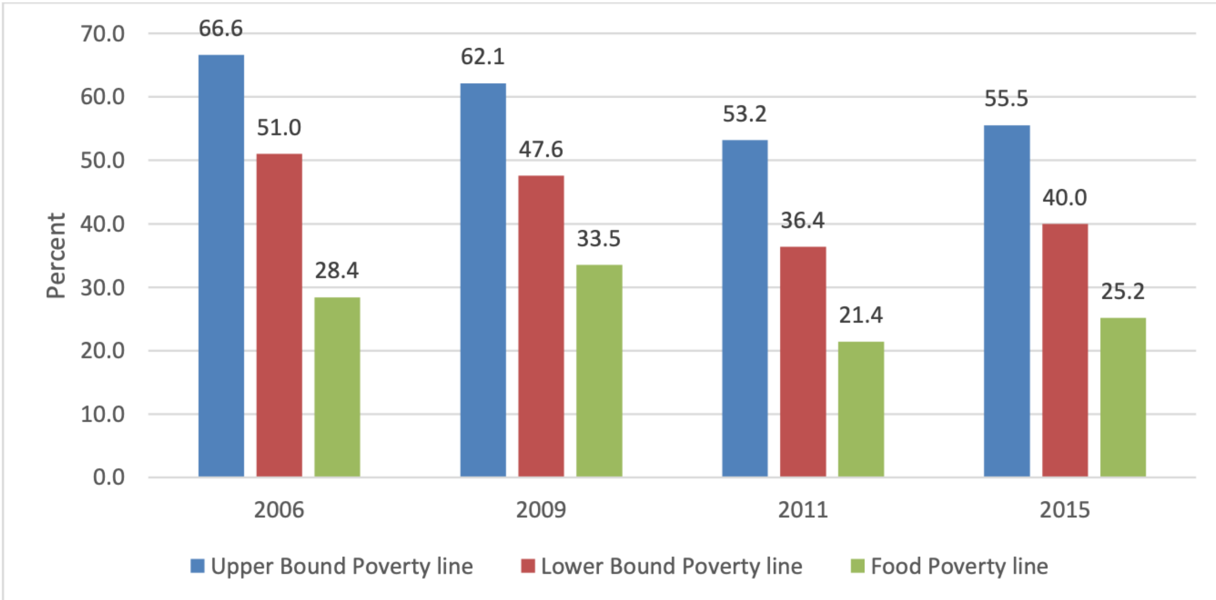

Figure 8: Percentage of South African population below the upper-bound, lower-bound and food poverty lines, Source: (RSA, 2019)

In terms of Figure 8 percentages, the proportion of individuals below the FPL decreased from 28% in 2006 to 25% in 2015. However, when considering absolute terms, approximately 343,000 more people were living below the FPL in 2015 compared to 2006. It's essential to note that this reduction in FPL is less pronounced than the declines in the LBPL and UBPL. The data underscores the connection between poverty (SDG 1) and access to food (SDG 2).

Figures 8 also display the proportions of the population below the LBPL and UBPL. In percentage terms, 51% of South Africans lived below the LBPL in 2006, and nearly 67% lived below the UBPL. Both measures exhibit a decrease of about 10 percentage points by 2015. While the long-term poverty trend is generally decreasing, South Africa's overall poverty rate increased from 36.4% to 40% between 2011 and 2015.

Indicator 1.2.2 pertains to the proportion of men, women, and children of all ages experiencing poverty in various dimensions, as defined by national standards, using the South African Multidimensional Poverty Index (SAMPI). SAMPI provides a comprehensive perspective on poverty, considering factors beyond income, such as access to essential services (Stats SA, 2014b). This poverty index is measured in two aspects: headcount and poverty intensity.

Figure 9 below displays data on SAMPI's headcount and intensity, revealing a consistent reduction from 2001 to 2016.

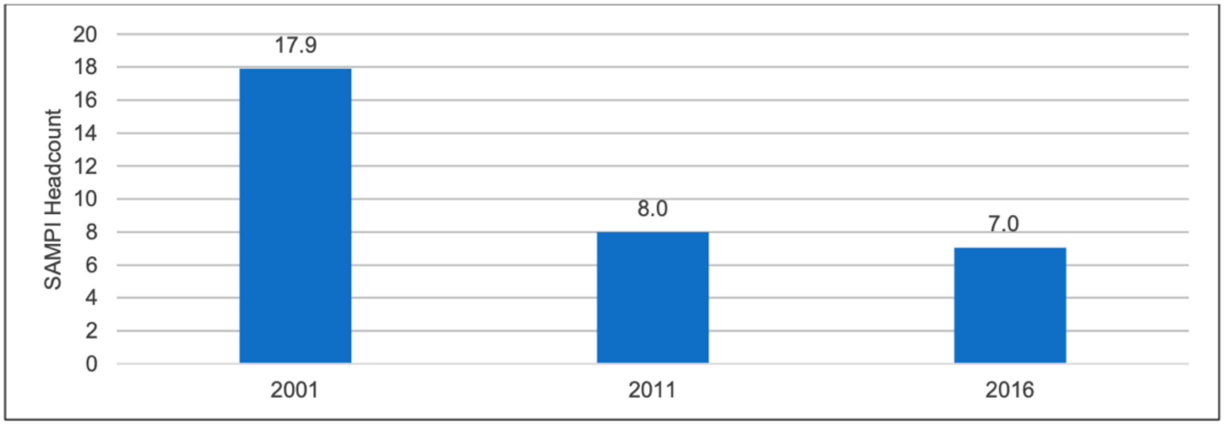

Figure 9 South African Multidimensional Poverty Index (SAMPI) headcount, Source: (RSA, 2019)

This decline shown in Figure 9 indicates positive progress in reducing poverty across various dimensions in South Africa.

As shown in Figure 10 below, the SAMPI intensity also exhibited a decrease, moving from 43.9 in 2001 to 42.8 in 2016.

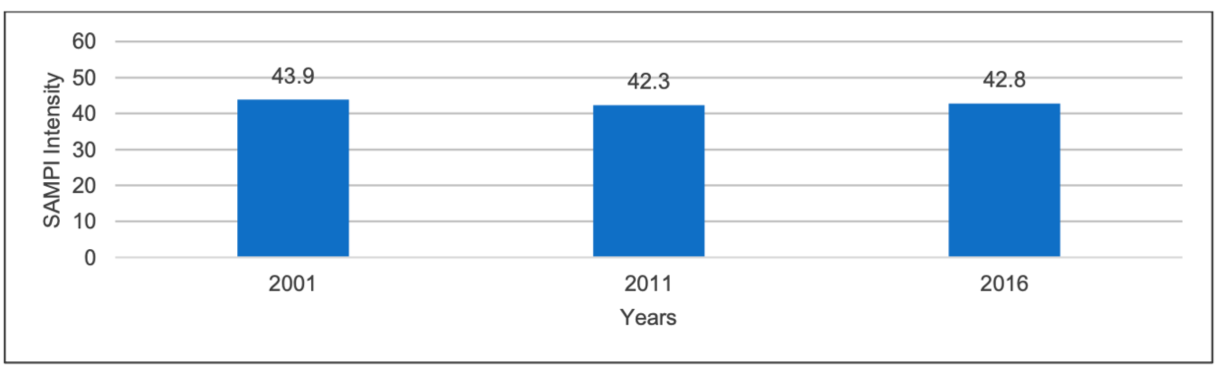

Figure 10: South African Multidimensional Poverty Index (SAMPI) intensity, Source: (RSA, 2019)

Indicator 1.3.1D assesses the proportion of the population protected by social safety nets, with specific distinctions made for various demographic groups such as children, unemployed individuals, older persons, persons with disabilities, pregnant women, newborns, work injury victims, and those classified as poor and vulnerable. Figure 11 below demonstrates that the portion of the population covered by social protection, predominantly through grants, saw an increase from 28.9% to 30.3% between 2013 and 2018.

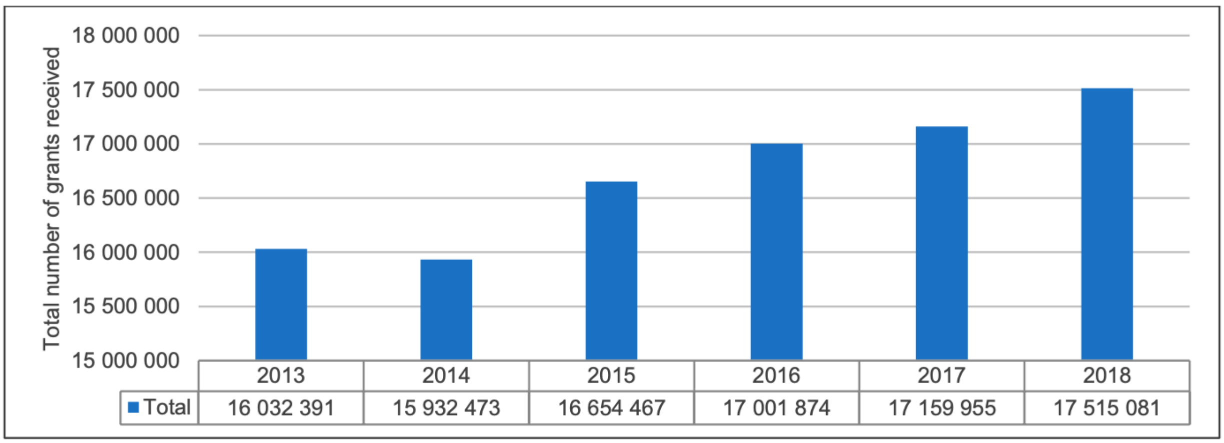

Figure 11: Number of social grants received, Source: (RSA, 2019)

Social assistance programs, particularly social grants, have played a pivotal role in diminishing extreme poverty in South Africa. As of 2015, these grants led to a reduction in the poverty headcount rate by around 7.9% and a decrease in the poverty gap by 29.5% (Stats SA, 2018).

The number of South Africans receiving social grants experienced an upward trend, rising from 16 million in 2013 to 17.5 million in 2018, as depicted in Figure 12 below.

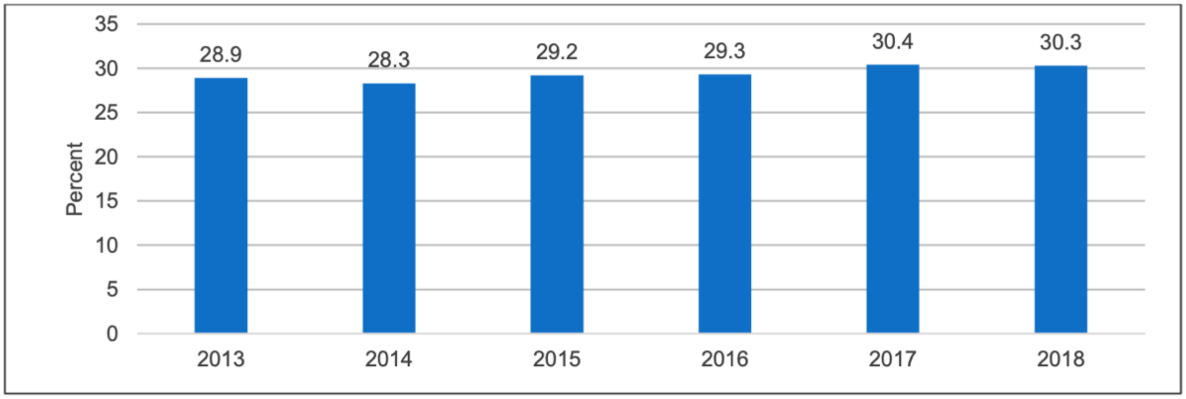

Figure 12: Percentage of people effectively covered by social protection systems, Source: (RSA, 2019)

While the number of South Africans receiving social grants has been on an upwards trajectory in the 2013 - 2018 period, the increase in the percentage of people covered by social grants was less substantial, suggesting that while the number of grant recipients grew, the percentage increase was relatively modest.

Figure 13 below indicates that the percentage of households with access to essential basic services is generally on an upward trajectory. However, there has been a slight decrease in access to improved water facilities, with a decline from 87.5% of the population in 2015 to 86.4% in 2017.

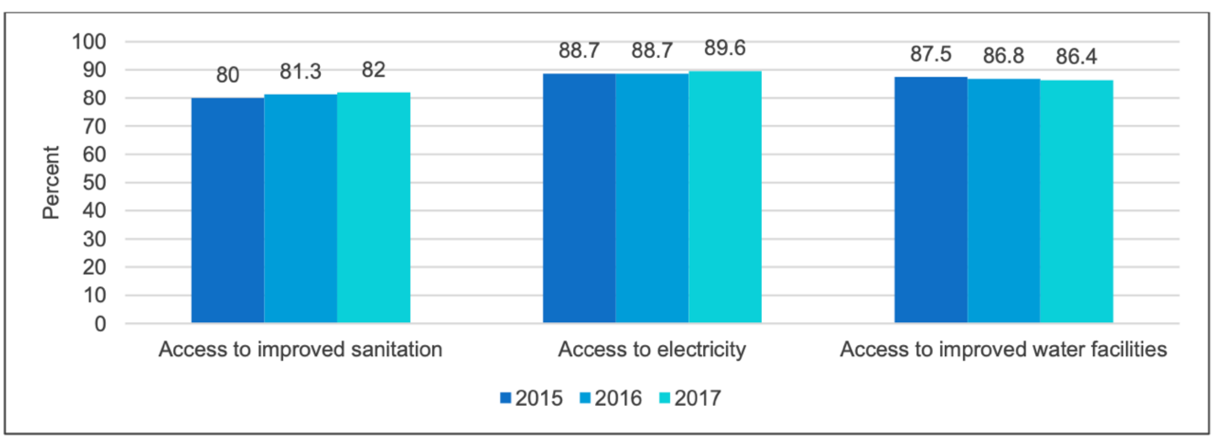

Figure 13: Percentage of households with access to essential basic services, Source: (RSA, 2019)

Figure 14 illustrates access to basic services based on the lower-bound poverty line (LBPL) across different poverty categories.

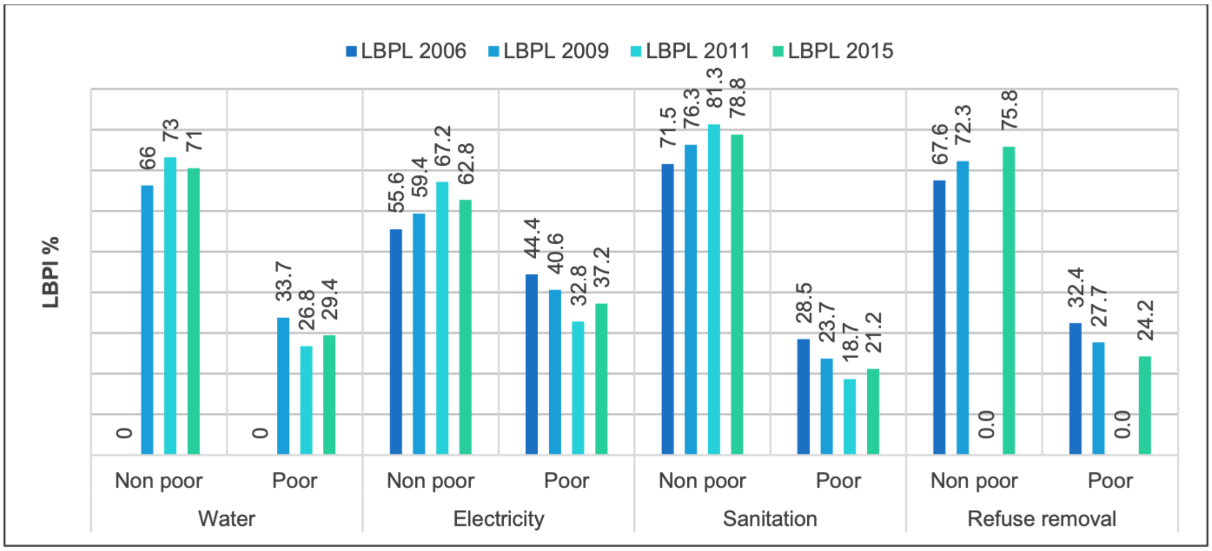

Figure 14: Percentage of households with access to basic services using LBPL, Source: (RSA, 2019)

Figure 15 displays annual deaths due to natural disasters from 1997 to 2016, covering various natural events such as heat exposure, cold exposure, sunlight exposure, lightning, earthquakes, volcanic eruptions, avalanches, landslides, cataclysmic storms, floods, and other forces of nature.

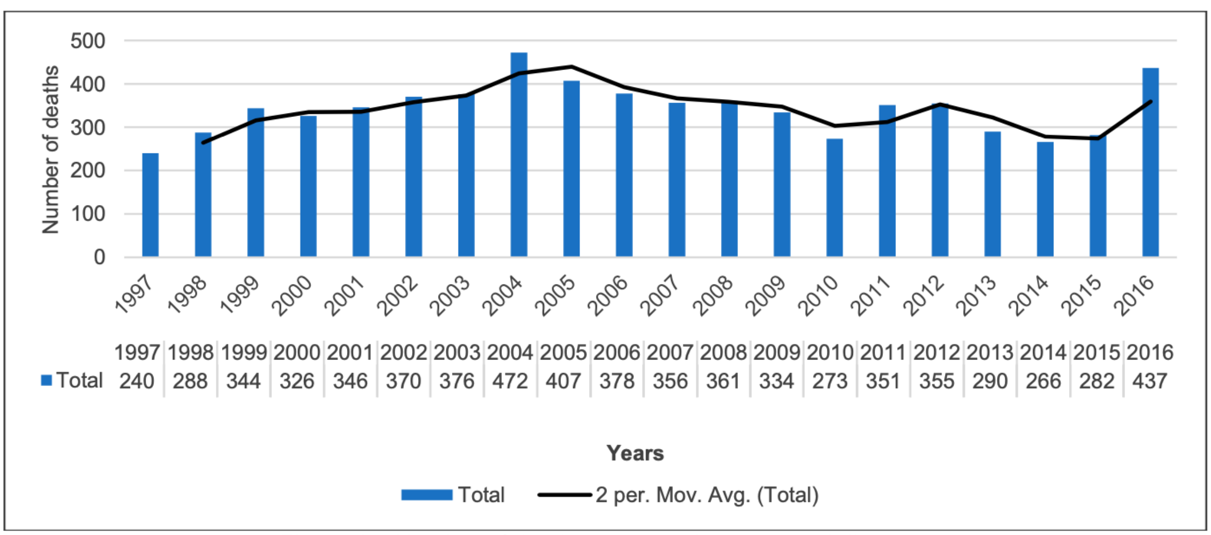

Figure 15: Number of deaths per year due to natural disasters, Source: (RSA, 2019)

Source, (RSA, 2019)

The data in Figure 15 indicates a fairly consistent trend in the number of disaster-related deaths, with notable peaks in 2004, 2005, 2006, and 2016.

Table 1 below captures the summarised key data on South Africa's progress on SDG 1 Indicators.

Table 1: Summarised key data on South Africa's progress on SDG 1 Indicators

Indicator	Key data Points

1.1.1: Percentage of population living under the international poverty threshold, categorized by gender, age, employment situation, and geographic area (urban or rural).

2006	2009	2011	2015
25.4%	26.3%	16.4%	18.8%

	2006	2009	2011	2015
Male	45.9%	46.2%	45.5%	46.3%
Female	53.9%	53.8%	54.5%	53.7%

1.2.1: Percentage of population residing under the national poverty threshold, segmented by gender and age.

	2006	2009	2011	2015
Below the FPL	28.4%	33.5%	21.4%	25.2%
Male	26.5%	32.0%	20.2%	23.7%
Female	30.1%	35.0%	22.6%	26.5%

	2006	2009	2011	2015	2019
LBPL (%)	51	47.6	36.4	40	-
Male (%)	48.3	-	34.7	38.2	45.6
Female (%)	53.6	49.6	38.1	41.7	-

	2006	2009	2011	2015
UBPL (%)	66.6	62.1	53.2	55.5
Male (%)	64.1	60.1	51.4	53.7
Female (%)	68.9	63.9	54.9	57.2

1.2.1A: Quantity of social grants (supplementary metric)

Year	Social Grants
2013	16,032,391
2016	17,001,874
2018	17,515,081

Year	Male Population
2015	1,863,706
2016	1,922,185
2017	1,976,180
2018	2,048,963

Year	Female Population
2015	14,790,761
2016	15,079,689
2017	15,183,775
2018	15,466,118

Year	SAMPI Headcount
2001	17.9%
2008	8%
2016	7%

1.2.2: Percentage of males, females, and individuals of all ages experiencing multidimensional poverty as per national criteria

Year	SAMPI Intensity
2001	43.9%
2011	42.3%
2016	42.8%

1.3.1D: Proportion of the population encompassed by social safety nets, with a distinction made for children, elderly individuals, and individuals with disabilities (adjusted indicator)

Year	Percentage
2013	28.9%
2016	29.3%
2018	30.3%

Gender	2016	2018
Male	7.0 %	7.4 %

Gender	2016	2018
Male	7.0%	7.4%
Female	52.2 %	52.1 %

1.4.1D: Percentage of the population residing in households with availability to (a) upgraded sanitation amenities, (b) electricity, and (c) enhanced water facilities (adapted indicator)

Improved Sanitation

Year	Overall	Male	Female
2015	80.0%	80.0	80.0
2016	81.3%	81.2	81.4
2017	82.0%	82.0	82.1

Improved Electricity

Year	Overall	Male	Female
2015	88.7%	87.9	89.5
2016	88.7%	87.8	89.7

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<tr><td>2017</td><td>89.6%</td><td>88.7</td><td>90.6</td></tr>
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Improved Water
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<tr><th>Year</th><th>Overall</th><th>Male</th><th>Female</th></tr>
<tr><td>2015</td><td>87.5%</td><td>87.6</td><td>87.4</td></tr>
<tr><td>2016</td><td>86.8%</td><td>86.9</td><td>86.8</td></tr>
<tr><td>2017</td><td>86.4%</td><td>86.4</td><td>86.3</td></tr>
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<tr><td>1.5.1D: Count of fatalities, individuals unaccounted for, and directly impacted individuals linked to catastrophes per 100,000 population</td><td>
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<tr><th>2006</th><th>2011</th><th>2016</th></tr>
<tr><td>378</td><td>351</td><td>437</td></tr>
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<tr><td>1.5.3D: Quantity of national and local disaster risk reduction strategies endorsed by South Africa (domesticated, and duplicated indicator)</td><td>13 strategies (2019)</td></tr>
<tr><td>1.a.2: Percentage of total government expenditure allocated to essential services (including education, healthcare, and social protection)</td><td>
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<tr><th>2013/14</th><th>2014/15</th><th>2015/16</th></tr>
<tr><td>20%</td><td>21%</td><td>20%</td></tr>
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Data adapted from (RSA, 2019)

Table 1 above presents data on eight SDG 1 indicators, including both Tier I or Tier II SDG indicators and domesticated ones. The table reveals an increase in the number of social grants (1.2.1A, 1.3.1D) and substantial government spending on essential services (1.a.2). However, there is a concerning trend of declining access to services (1.4.1D).

SDG 6: Targets and Indicators

Sustainable Development Goal 6 (SDG 6), in line with the United Nations (UN) agenda, is dedicated to ensuring the availability and sustainable management of water and sanitation for all (UN, 2019). This goal is integral to preserving human health, fostering environmental sustainability, and driving economic prosperity. Within SDG 6, eight targets have been identified, each contributing to the overarching aim of providing equitable access to clean water and proper sanitation.

Target 6.1 aspires to achieve universal access to safe and affordable drinking water for all by 2030. It emphasizes the importance of ensuring that safe water sources are accessible to every individual, regardless of their socio-economic background. Under Target 6.2, the objective is to ensure access to adequate sanitation and hygiene for everyone while eliminating open defecation. This target pays special attention to addressing the needs of women, girls, and those in vulnerable situations.

The third target, 6.3, focuses on water quality improvement by reducing pollution, minimizing the release of hazardous chemicals and materials, and expanding recycling and safe wastewater reuse on a global scale. Additionally, it aims to halve the proportion of untreated wastewater. Target 6.4 centers on enhancing water-use efficiency across all sectors. It seeks to maintain a sustainable balance between freshwater withdrawals and supplies, ultimately reducing water scarcity's impact on people's lives.

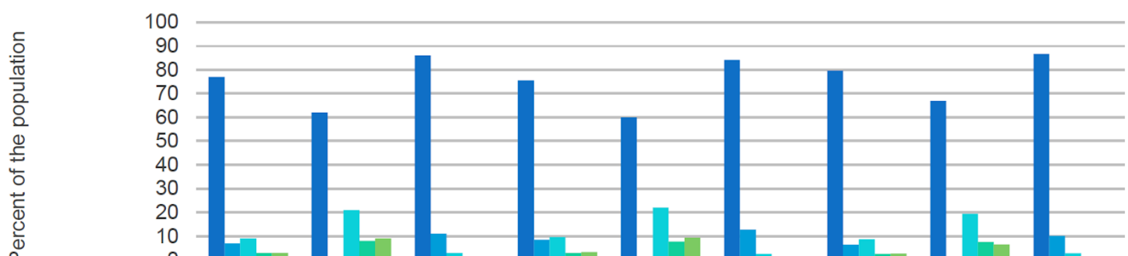
Integrated water resources management is at the core of Target 6.5, with an emphasis on cooperation between various entities at all levels. Transboundary cooperation is especially vital, ensuring efficient management and utilization of water resources. Target 6.6 places a spotlight on safeguarding and restoring water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers, and lakes. This restoration and protection are fundamental to the overall health of ecosystems and water sources.

International cooperation and capacity-building support are the central themes of Target 6.a. These are intended to aid developing countries in their efforts related to water and sanitation, encompassing aspects such as water harvesting, desalination, wastewater treatment, and recycling technologies. Target 6.b champions the involvement of local communities in the improvement of water and sanitation management. This community participation strengthens the collective effort in meeting the goals outlined in SDG 6 (UN, 2019).

In summary, SDG 6 is a multifaceted initiative that not only strives to provide clean water and sanitation to all but also addresses numerous interconnected factors, from efficient water management to ecosystem protection and international cooperation. Each of these eight targets plays a crucial role in realizing the vision of universal access to water and sanitation, thereby enhancing the well-being of individuals, protecting the environment, and fostering global economic advancement (UN, 2019).

South Africa Goal 6 Indicators

Figure 16 illustrates the progress in safely managed drinking water services in South Africa from 2015 to 2017.

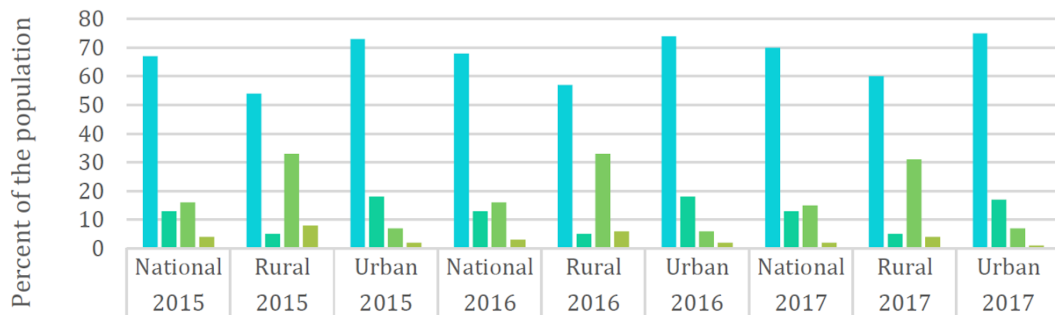


	National 2015	Rural 2015	Urban 2015	National 2016	Rural 2016	Urban 2016	National 2017	Rural 2017	Urban 2017
Safely managed	77	62	86	75	60	84	80	67	87
Basic service	7	0	11	9	1	13	6	0	10
Limited service	9	21	3	10	22	3	9	19	3
Unimproved	3	8	0	3	8	0	3	8	0
No service	3	9	0	3	9	0	3	7	0

Figure 16: Access to safe drinking water services, Source: (RSA, 2019)

While the country has substantial water supply infrastructure coverage (95% in 2017), safely managed water services showed a significant increase, rising from 77% to 80% of the national population during this period. This increase is even more remarkable in rural areas, where there was a 5% growth, while urban areas saw a 1% increase. The figures demonstrate a positive trend toward enhancing access to safely managed drinking water services and ensuring their sustainability in South Africa.

Figure 17 indicates that in 2017, 83% of the national population had improved sanitation facilities, a slight increase from 80% in 2015.



	National 2015	Rural 2015	Urban 2015	National 2016	Rural 2016	Urban 2016	National 2017	Rural 2017	Urban 2017
Basic Service	67	54	73	68	57	74	70	60	75
Limited Service	13	5	18	13	5	18	13	5	17
Unimproved	16	33	7	16	33	6	15	31	7
Open Defecation	4	8	2	3	6	2	2	4	1

Figure 17: Access to basic sanitation services, Source (RSA, ibid)

Of the 83%, 75% had access to basic service, while 13% had access to limited service. Urban areas had higher access to limited services, potentially due to shared sanitation facilities and backyard dwellers. Population growth and changing household sizes pose challenges for Indicator 6.2.1, with South Africa's population increasing from 40 million to 56.6 million between 1994 and 2016, resulting in a higher number of households to be serviced (RSA, ibid).

Figure 18 indicates that in 2017, 65% of the national population had access to on-premises hand-washing facilities with soap and water.

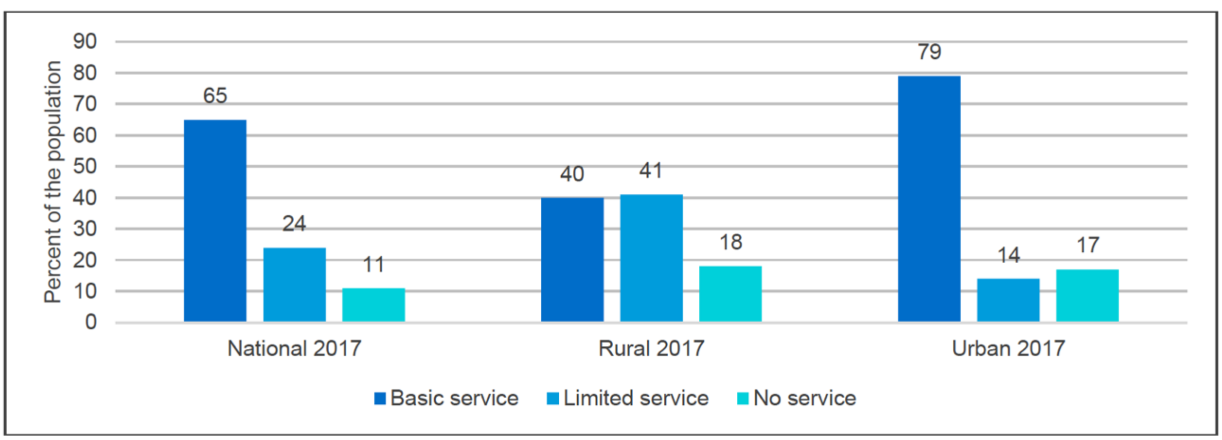


Figure 18: Access to hygiene facilities, Source (RSA, ibid)

A rural breakdown shows that 18% lacked access to such facilities, more than twice the urban areas' percentage with no services. This highlights the rural-urban disparities in basic service provision.

As shown in Figure 19 below, dams and estuaries cover 0.17% and 0.23% of the land area, while wetlands make up 2.7%, and lakes account for just 0.1% of the country's surface.

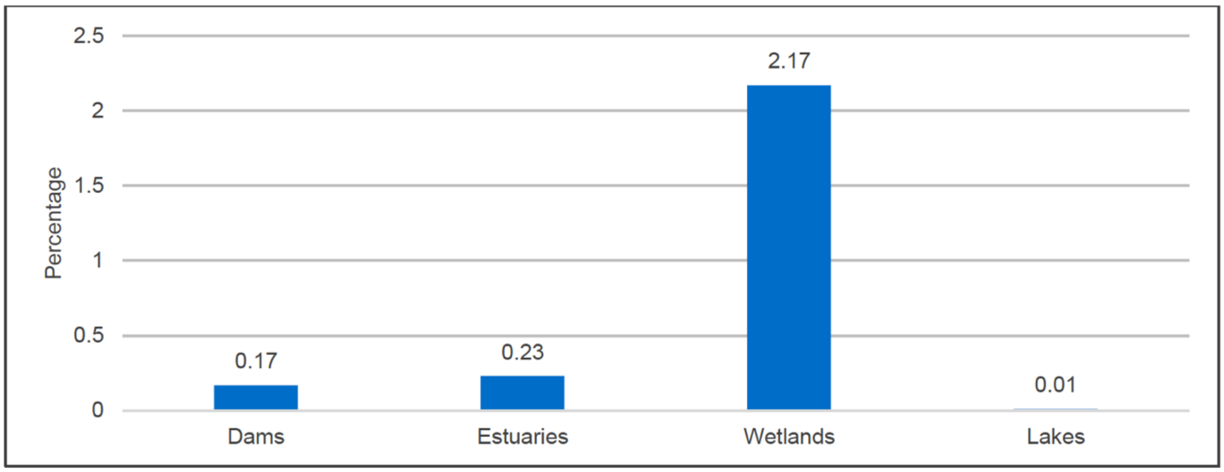


Figure 19: Extent of freshwater ecosystems as a percentage of total land area, Source (RSA, ibid)

The National Water and Sanitation Master Plan (NW & SMP) highlights that only 11% of wetland ecosystems are adequately protected, with 71% lacking protection. Estuarine ecosystems face similar challenges, with 33% well protected and 59% unprotected, indicating the need for a more extensive role of the protected area network in safeguarding ecological infrastructure.

The summary of South Africa's progress towards SDG 6 is summarised in Table 2 below.

Table 2: South Africa’s SDG 6 Progress Indicators

<table>
<tr><th>Indicator</th><th>Key Data Points</th></tr>
<tr><td>6.1.1: This indicator measures the percentage of the population that has access to safely managed drinking water services. It assesses the proportion of people who can use drinking water services that meet specific safety and quality standards.</td><td>
<table>
<tr><th></th><th>2015</th><th>2016</th><th>2017</th></tr>
<tr><td>National Safely managed</td><td>77%</td><td>75%</td><td>80%</td></tr>
<tr><td>National Basic service</td><td>7%</td><td>9%</td><td>6%</td></tr>
<tr><td>National Limited service</td><td>9%</td><td>10%</td><td>9%</td></tr>
<tr><td>National Unimproved</td><td>3%</td><td>3%</td><td>3%</td></tr>
<tr><td>National No service</td><td>3%</td><td>3%</td><td>3%</td></tr>
</table>
</td></tr>
<tr><td>6.2.1: Percentage of the population with access to safe sanitation facilities and hand-washing amenities.</td><td>
<table>
<tr><th></th><th>2015</th><th>2016</th><th>2017</th></tr>
<tr><td>National Basic service</td><td>67%</td><td>68%</td><td>70%</td></tr>
<tr><td>National Limited service</td><td>13%</td><td>13%</td><td>13%</td></tr>
<tr><td>National Unimproved</td><td>16%</td><td>16%</td><td>15%</td></tr>
<tr><td>National Open defecation</td><td>4%</td><td>3%</td><td>2%</td></tr>
</table>
</td></tr>
<tr><td>6.3.1D: Percentage of safely treated and legally discharged wastewater (domesticated indicator).</td><td>52% (2017)</td></tr>
<tr><td>6.3.2D: Percentage of water bodies meeting South African water quality standards (domesticated indicator).</td><td>58% (2017)</td></tr>
</table>

6.4.1: Water use efficiency changes over time.	3,439 USD/ m^3 (2018)
6.4.2: Water stress level – freshwater withdrawal vs. available resources.	41.38% (2016)
6.5.1: Level of integrated water resources management implementation (scale of 0 to 100).	70
6.5.2: Percentage of transboundary basin area with established operational arrangements for water cooperation.	Basin institutions with active agreements have been established
6.6.1D1: The spatial extent of water-related ecosystems at a specific point in time, such as wetlands, reservoirs, lakes, and estuaries, expressed as a percentage of the total land area.	Dams: 0.17% Estuaries: 0.23% Wetlands: 2.17% Lakes: 0.01%
6.6.1D2: The variation in the national discharge of rivers and estuaries over a specific period, reflecting changes in water flow.	Rivers: 30% (2010) Estuaries: 33% (2017)
6.a.1: The volume of official development assistance dedicated to water and sanitation initiatives, integrated into a government-coordinated budget.	R2 000 000 (2018)
6.b.1: The percentage of local administrative units that have	The Integrated Development Plan (IDP) process allows for the involvement of local administrative units in

implemented functional policies and procedures for involving local communities in water and sanitation management.	water resource management through Catchment Management Agencies (CMAs), although these agencies have not been set up yet.

Data adapted from (RSA, 2019)

Data in Table 2 above reveals a mixed set of development outcomes, especially for indicators with only a single data point. South Africa reports on 11 SDG 6 indicators, encompassing eight Tier I or Tier II SDG indicators and four domesticated indicators. The country has made advancements in providing safely managed drinking water services (6.1.1) and sanitation services (6.2.1), although it's not yet able to report on the 'safe management' aspect of sanitation services. However, there are challenges, with only 58% of South Africa's water bodies meeting resource water quality objectives (6.3.2D), and just 52% of water containing waste is safely treated and lawfully discharged (6.3.1D).

SDG 7: Targets and Indicators

SDG 7 is dedicated to making sure that affordable, reliable, sustainable, and modern energy is accessible to everyone. Energy is a linchpin for achieving numerous Sustainable Development Goals, as it plays a vital role in addressing poverty, enhancing healthcare and education, improving water availability, driving industrial development, and mitigating climate change (UN, 2019).

Under SDG 7, five targets have been established, each supported by specific indicators to gauge progress:

The first goal, Target 7.1, aims to provide universal access to affordable, reliable, and modern energy services by 2030. The indicator for this target assesses the proportion of the population with access to electricity.

Target 7.2 focuses on substantially increasing the share of renewable energy in the global energy mix by 2030. The corresponding indicator monitors the share of renewable energy in total final energy consumption. Meanwhile, Target 7.3 seeks to double the global rate of improvement in energy efficiency by 2030. The indicator for this target tracks energy intensity as a measure of energy efficiency.

Target 7.a emphasizes the need to enhance international cooperation to facilitate access to clean energy research and technology. This includes research in renewable energy, energy efficiency, and advanced and cleaner fossil-fuel technology. The indicator evaluates the amount of funds allocated to clean energy research and development.

Target 7.b is focused on expanding infrastructure and upgrading technology to provide modern and sustainable energy services in developing countries. This particularly includes least developed countries, small island developing states, and land-locked developing countries. The indicator for this target assesses the total official flows for energy infrastructure and technology support to developing countries.

These goals and their associated indicators form a comprehensive framework to monitor global progress in ensuring equitable access to affordable, reliable, and sustainable energy for all. They represent a critical underpinning for the broader Sustainable Development Goals, reflecting the shared commitment to building a more sustainable and equitable future.

South Africa Goal 7 Indicators

In Figure 20, we observe the progression in South Africa's access to electricity (indicator 1.1.1), including grid and off-grid connections.

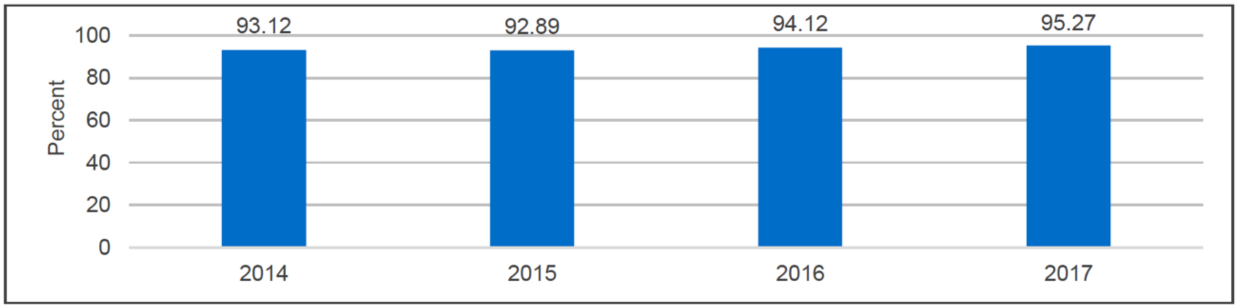


Figure 20: Percentage of South African population with access to electricity, 2014–2017, Source (RSA, 2019)

Despite a minor dip in 2015 compared to 2014, subsequent years showed an incremental rise in electrification. The percentage of the population with electricity access went from 93.12% in 2014 to 95.27% by 2017, indicating positive strides toward universal electricity access.

Figure 21 illustrates the percentage of South Africa's population utilizing solar energy as their primary energy source, categorizing it into various purposes like cooking, lighting, space heating, and water heating.

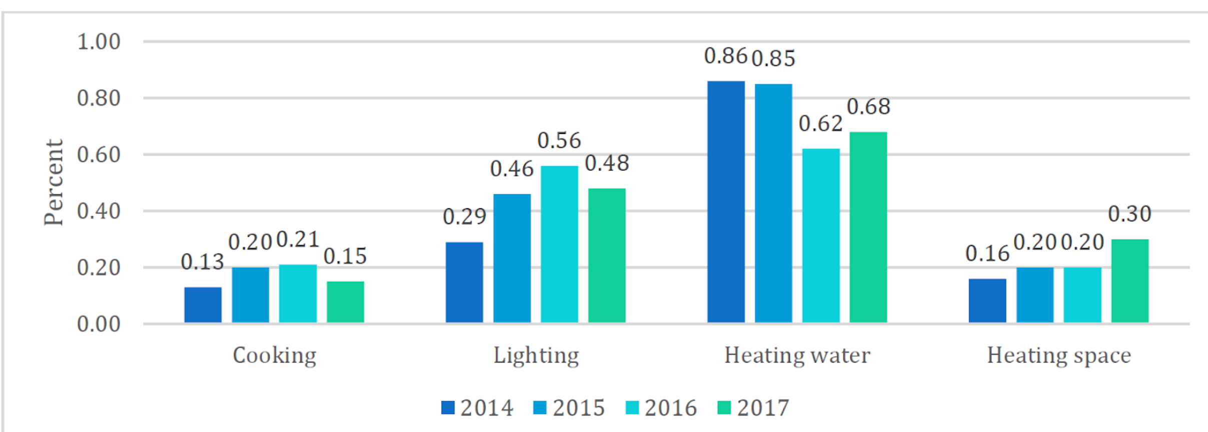


Figure 21: Percentage of population using solar energy in South Africa, 2014–2017, Source (RSA, 2019)

According to Figure 22 below, the share of renewable energy in South Africa's total final energy consumption has seen a significant increase in recent years. The same figure shows that this share rose from 14.6% in 2013 to 26.2% in 2015, signifying a substantial growth of nearly 80% during this two-year period.

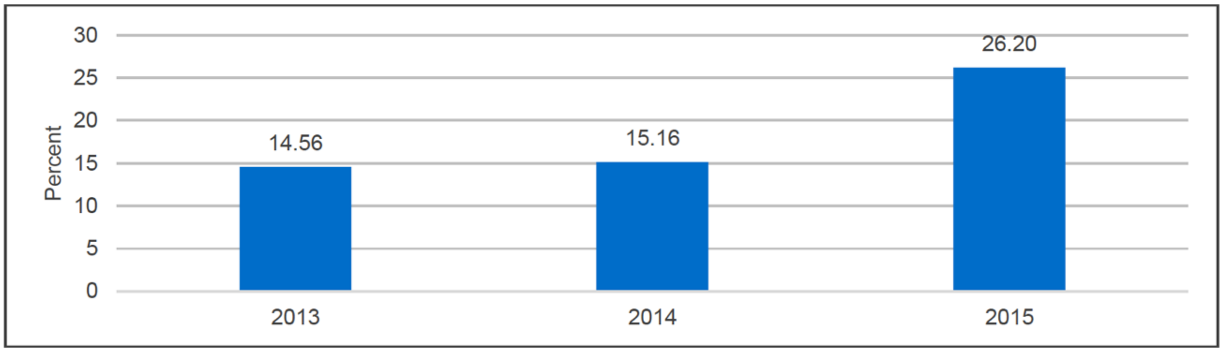


Figure 22: Share of renewable energy in total final energy consumption, 2013–2015, Source (RSA, 2019)

Figure 23 shows that South Africa has experienced significant growth in renewable energy generation capacity. Data presented highlights this growth, with large-scale renewable energy projects contributing an additional 3.9 GW to the country's generation capacity between 2012 and 2018.

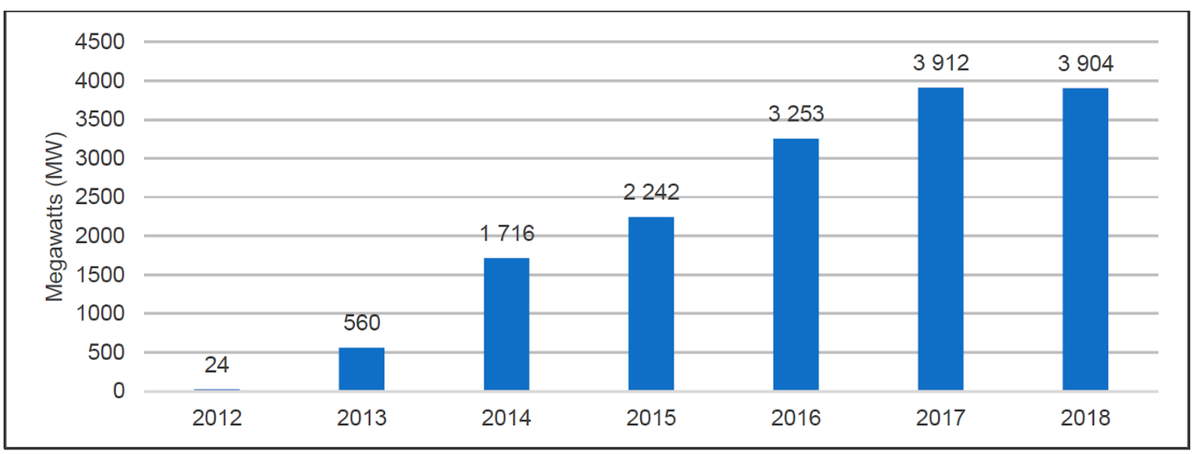


Figure 23: Annual renewable energy produced in South Africa, Source (RSA, 2019)

From 2013, when the first utility-scale renewable energy projects began operating, renewable energy capacity expanded rapidly until 2017. In 2018, this growth slowed due to delays in government-signed power purchase agreements (PPAs) for approved projects. However, the signing of PPAs for 27 new projects in November 2018 is expected to add at least 2.3 GW of renewable energy generation capacity upon completion.

Figure 24 illustrates that electricity generated from renewable sources in South Africa has seen significant growth.

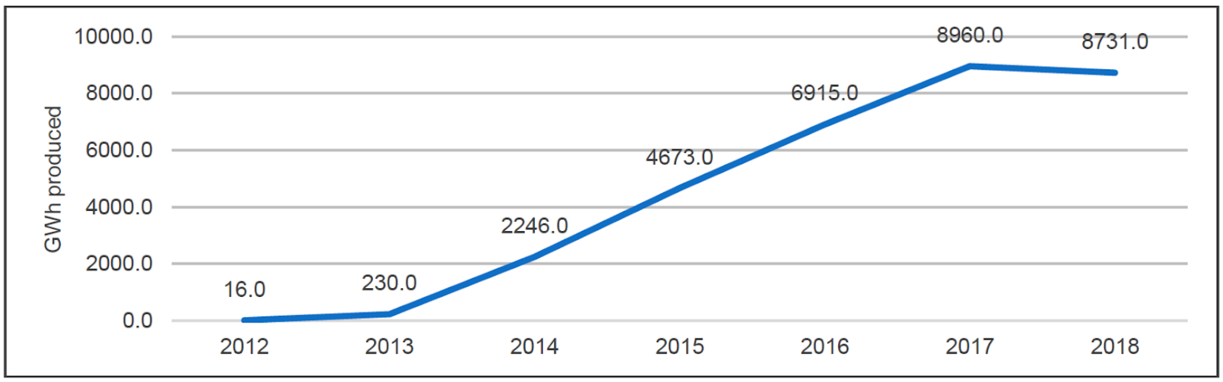


Figure 24:Annual GWh of electricity produced from renewable energy sources, Source (RSA, 2019)

The data shows that with annual electricity production from renewable sources increasing from 16 GWh in 2012 to nearly 8,800 GWh in 2018. This demonstrates the country's substantial progress in providing clean and modern energy sources, such as solar and wind, which complements its electrification efforts.

The historical trend of energy intensity in South Africa reveals improved energy efficiency from 2011 to 2015. According to Figure 25 below, Energy intensity, defined as the energy used per unit of economic output (GDP), decreased from 2.07 TJ per million Rands of GDP to 1.89 TJ per million rands of GDP during this period. This indicates greater energy efficiency in the South African economy in 2015 compared to the 2011 baseline.

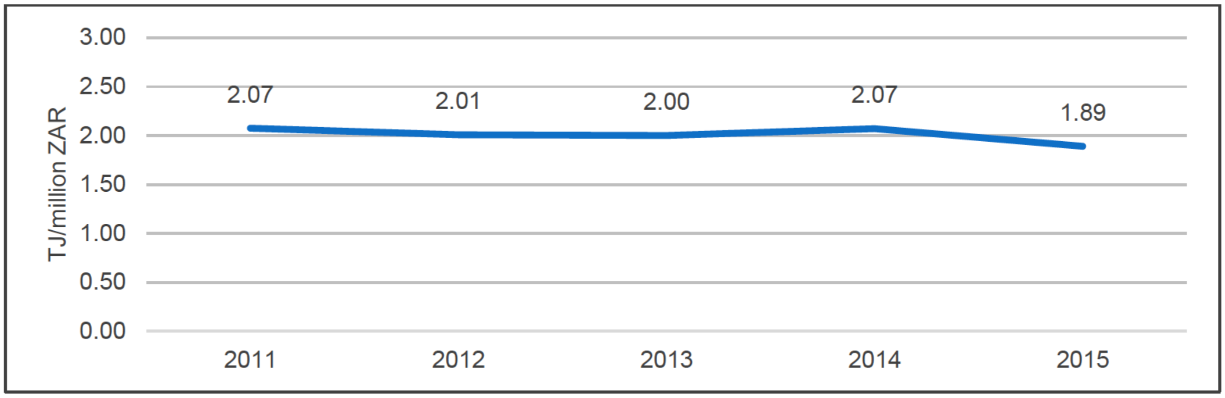


Figure 25: Energy intensity, Source (RSA, 2019)

Several interventions, including energy efficiency programs outlined in the National Energy Efficiency Strategy (NEES) and contributions from industry initiatives such as the Industrial Energy Efficiency Project, Integrated Demand Management, Private Sector Energy Efficiency Programme (PSEE), and the section 12L incentive, likely contributed to this improvement.

However, there were fluctuations in energy intensity between 2013 and 2014, highlighting the need for sustained energy efficiency efforts to avoid such fluctuations. Maintaining a consistent downward trend in energy intensity is crucial for South Africa to align with SDG 7.3.1 on energy efficiency.

Table 3 below summarises South Africa's efforts toward SDG 7. South Africa is capable of reporting on four SDG 7 indicators, including three Tier I or Tier II SDG indicators and one domesticated indicator.

Table 3: Summary of South Africa's Progress on SDG 7

<table>
<tr><th>Indicator</th><th>Key Data Points</th></tr>
<tr><td>7.1.1: Proportion of population with access to electricity</td><td><table><tr><th>2014</th><th>2015</th><th>2016</th><th>2017</th></tr><tr><td>93.12%</td><td>92.89%</td><td>94.12%</td><td>95.27%</td></tr></table></td></tr>
<tr><td>7.1.2D: Percentage of the population that uses solar energy as their main source of energy (domesticated indicator)</td><td><table><tr><th></th><th>2014</th><th>2016</th></tr><tr><td>Cooking</td><td>0.1%</td><td>0.1%</td></tr><tr><td>Lighting</td><td>0.3%</td><td>0.5%</td></tr><tr><td></td><td>2014</td><td>2017</td></tr><tr><td>Heating water</td><td>0.8%</td><td>0.6%</td></tr><tr><td>Heating space</td><td>0.2%</td><td>0.1%</td></tr></table></td></tr>
<tr><td>7.2.1: Renewable energy share in the total final energy consumption</td><td>14.56% (2013), 15.16% (2014), 26.2% (2015)</td></tr>
<tr><td>7.2.1A1: Amount of renewable energy at annual operating capacity (additional indicator)</td><td>24 MW (2012), 3 253 MW (2016), 3 904 (2018)</td></tr>
<tr><td>7.2.1A2: Annual amount of electricity produced from renewable sources (additional indicator)</td><td>16 GWh (2012), 4 673 GWh (2015), 8 731 GWh (2018)</td></tr>
<tr><td>7.3.1: Energy intensity measured in terms of primary energy and GDP</td><td>2.07 TJ/million rand (2011), 1.89 TJ/million rand (2015)</td></tr>
</table>

Data Adapted from, (RSA, 2019)

Data captured in Table 3 above shows that South Africa's electricity provision has shown steady growth from 2014 to 2017 (7.1.1), but universal electrification has yet to be attained. Significant strides have been made in shaping policies for diversifying the energy mix with the integration of renewables (7.2.1, 7.2.1A1, 7.2.1A2), especially in the large-scale renewable energy sector. However, smaller-scale renewable energy programs are progressing more slowly due to the absence of universalized grid feeding rules. While large-scale renewable energy initiatives are making headway, challenges remain, particularly the single-seller model within the electricity market.

SDG 8: Targets and Indicators

SDG 8 centers on promoting sustained, inclusive, and sustainable economic growth with a core focus on productive employment and decent work opportunities for everyone. This goal underscores the importance of enhancing labor productivity, reducing unemployment rates, particularly among young individuals, and facilitating access to financial services and benefits as vital components of comprehensive economic growth.

Within SDG 8, there are twelve specific targets:

Target 8.1 aims to sustain per capita economic growth, aligning with national circumstances, and achieve at least 7% GDP growth annually in the least developed countries.

Target 8.2 seeks to enhance economic productivity through diversification, technological advancement, and innovation, emphasizing high-value added and labor-intensive sectors.

Target 8.3 promotes development-oriented policies that foster productive activities, decent job creation, entrepreneurship, innovation, and the growth of micro, small, and medium-sized enterprises (MSMEs) with an emphasis on providing access to financial services.

Target 8.4 encourages improvements in global resource efficiency, striving to decouple economic growth from environmental degradation, particularly in developed countries.

Target 8.5 is dedicated to achieving full and productive employment and decent work for all individuals, including women, men, young people, and persons with disabilities, with a focus on equal pay for equal work.

Target 8.6 aims to significantly reduce the proportion of youth not in employment, education, or training by 2020.
Target 8.7 calls for immediate and effective measures to eradicate forced labor, modern slavery, human trafficking, and the worst forms of child labor, with the goal of ending all child labor by 2025.

Target 8.8 emphasizes the protection of labor rights and the promotion of safe and secure working environments for all workers, including migrant workers, particularly women migrants, and those in precarious employment.

Target 8.9 intends to promote sustainable tourism policies that generate jobs while preserving local culture and products by 2030.

Target 8.10 involves strengthening domestic financial institutions to expand access to banking, insurance, and financial services for all individuals.

Target 8.a underscores increasing Aid for Trade support for developing countries, with a specific focus on the least developed countries, through initiatives like the Enhanced Integrated Framework for Trade-Related Technical Assistance.

Target 8.b calls for the development and implementation of a global strategy for youth employment and the execution of the Global Jobs Pact by 2020.

These targets within SDG 8 address various dimensions of economic growth and decent work, aiming to foster inclusive and sustainable prosperity while also safeguarding labor rights and promoting equal opportunities for all segments of the population. Indicators related to each target serve as essential tools for measuring progress and ensuring that these objectives are met in a comprehensive and sustainable manner.

South Africa Goal 8 Indicators

Table 4 below indicates that between 2015 and 2017, South Africa faced an economic downturn marked by declining annual growth rates of both GDP per capita and GDP per employed person. This slump indicated the second recession since the country's democratic transition in 1994, affecting various sectors of the economy, including the secondary and tertiary sectors.

Table 4: South Africa's economic growth rates, Source (RSA, ibid)

	2015	2016
Annual growth rate of real GDP per capita	-0.356	-1.037
Annual growth rate of real GDP per employed person	-2.55	0.31

To revitalize the South African economy and inch closer to the set targets, growth must be stimulated in key sectors such as communications/information technology, agriculture, and finance. These targets include 5.4% annual growth as outlined by the National Development Plan (NDP) and 7% per annum in line with SDG 8. A similar downward trend was observed in real GDP per employed person, starting in 2012 and continuing to 2017, culminating in a 1.11% decline from the previous year.

Table 5 below shows that the proportion of informal employment in non-agricultural sectors, as measured in relation to total non-agricultural employment, has remained relatively stable.

Table 5: Informal employment in South Africa, Source (RSA, 2019)

	2015	2016	2017
	Percent (%)		
Males	29.0	29.0	28.8
Females	30.3	29.2	29.4
Total	29.6	29.1	29.1

The figure indicates a marginal decline of 0.11% from 2017 compared to the previous year, accompanied by a slight increase of 0.72% for females and a corresponding decrease of 0.72% for males in this category. The data in Table 6 below shows disparities in median monthly earnings between female and male employees across different occupational groups, indicating ongoing gender-based income differences.

Table 6: Comparison of median monthly earnings of female and male employees in various occupations for the years 2010 and 2017, data adapted from (RSA, 2019)

Occupation	2010		2017	
	Males	Females	Males	Females
Managers	R12 000	R9 000	R19 000	R17 000
Professionals	R12 000	R9 900	R20 000	R18 600
Technicians	R8 000	R7 500	R7 000	R6 000
Clerks	R5 000	R4 000	R6 000	R5 000
Sales	R2 800	R2 000	R3 900	R2 900
Skilled Agriculturers	R2 500	R1 560	R2 200	R1 200
Craft	R3 000	R2 067	R4 333	R3 100

Operators	R3 033	R1 950	R4 116	R3 250
Elementary	R1 700	R1 500	R2 700	R2 166
Domestic Workers	R1 000	R1 000	R1 700	R1 733

Table 6 data indicates that while there have been improvements in compensation for both genders in many cases, a gender pay gap persists, with females generally earning less than their male counterparts across various specified occupations.

The data represented in Figure 26 highlights a rise in unemployment rates, especially for females and young individuals aged 15 to 24, between 2008 and 2017.

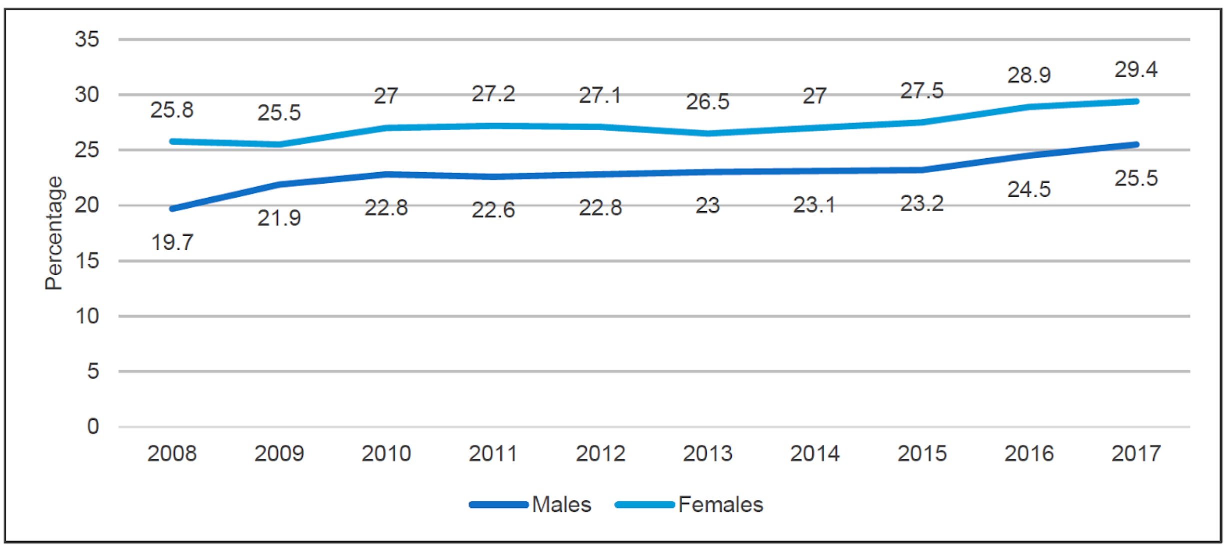


Figure 26: Unemployment rates by gender 2008–2017, Source: (RSA, 2019)

Female unemployment increased from 25.8% to 29.4%, while the rate for males went from 19.7% to 25.5%. The overall unemployment rate also increased from 22.4% to 27.25% during this period, reflecting a 4.8% increase.

Figure 27 indicates that youth unemployment in South Africa, particularly for those aged 15 to 24, has increased from 35.7% in 2010 to 38.7% in 2017.

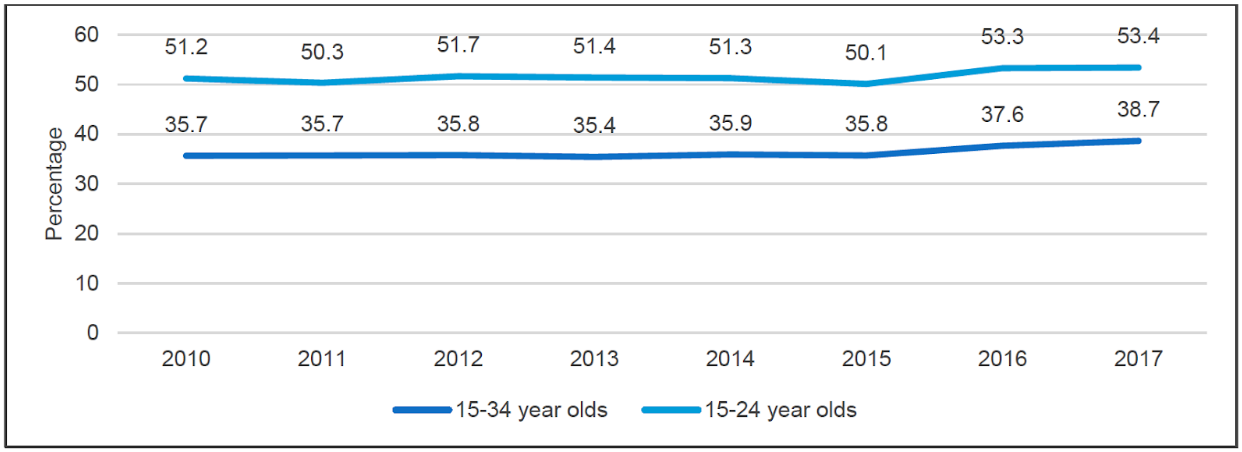


Figure 27: Unemployment rate amongst 15 to 34-year-olds, Source: (RSA, 2019)

According to the figure above, the percentage of youth not in education, employment, or training (NEET) remained relatively stable, starting at 31.97% in 2013 and ending at 31.15% in 2017. For the broader age group of youth aged 15 to 34, the NEET rate remained relatively constant, with a rate of 38.18% in 2013 and 38.60% in 2017.

Figure 28 displays the percentage of children, aged 7 to 17, involved in child labor, categorized by gender and age. The data is essential for measuring progress toward Target 8.7.
This indicator offers valuable insights into child labor trends and gender-age differentiations.

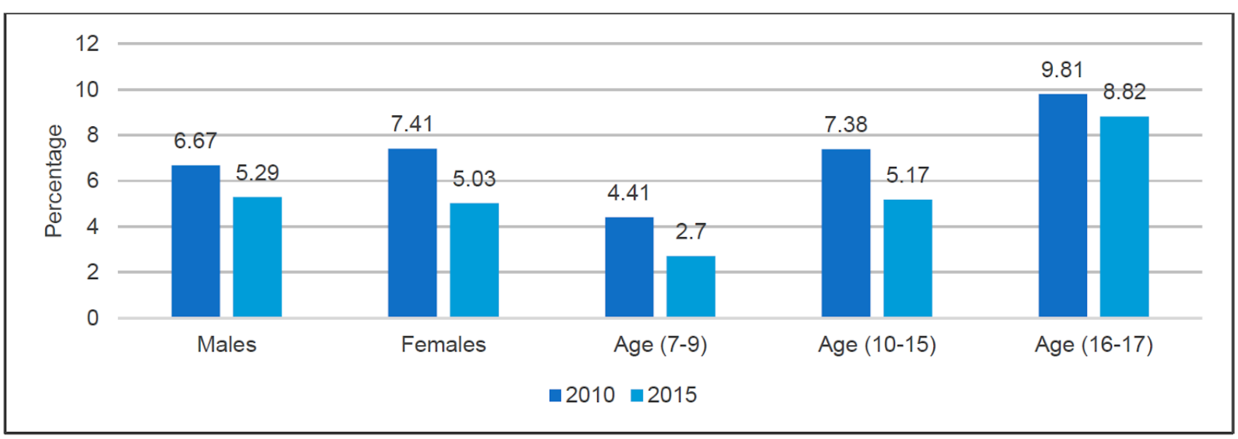


Figure 28: Child labor participation among children aged 7 to 17, with a breakdown by gender and age, in the years 2010 and 2015, Source: (RSA, 2019)

The NEET rate, which measures the percentage of youth (15-24 years old) not in education, employment, or training, remained fairly consistent between 2013 and 2017. It began at 31.97% and concluded at 31.15% during this period. Additionally, a supplementary indicator considered the percentage of youth aged 15 to 34, rather than 24, who are not in education, employment, or training. This indicator also remained relatively stable, with rates of 38.18% in 2013 and 38.60% in 2017.

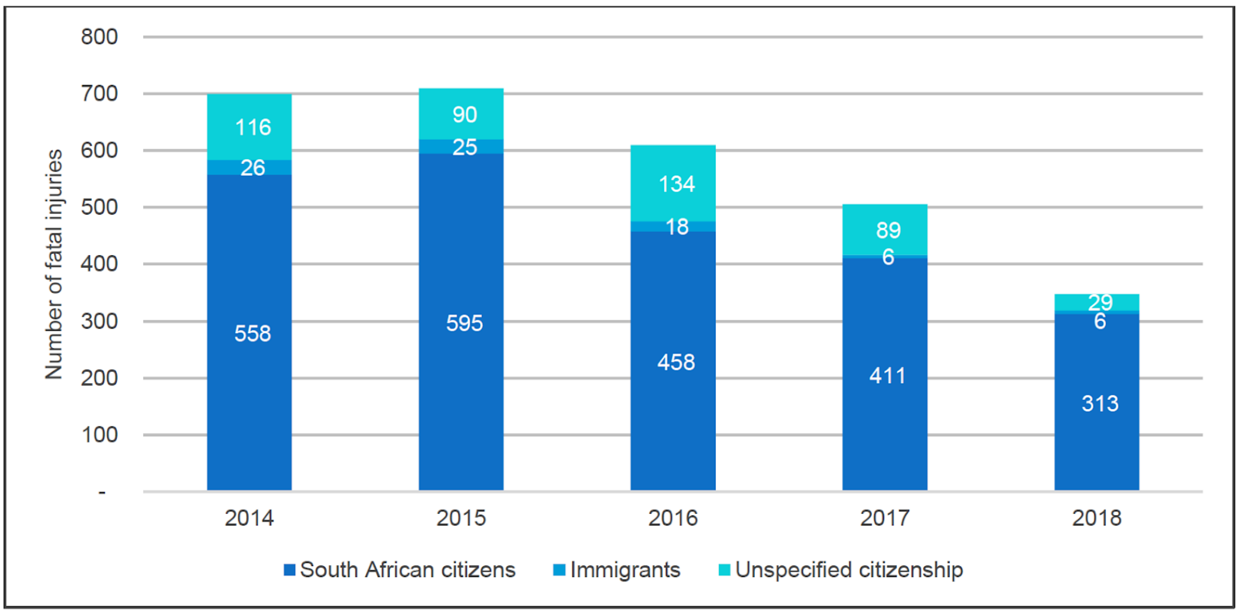


Figure 29: Count of deadly workplace injuries reported between 2014 and 2018, Source: (RSA, 2019)

Indicator 8.9.1 measures the contribution of tourism to the country's GDP and its growth rate. It's one of two indicators in SDG 8 focused on the tourism industry and employment. Data represented in Figure 29 shows a consistent trend from 2007 to 2016, with tourism contributing around 2.9% to the country's total GDP in 2016.

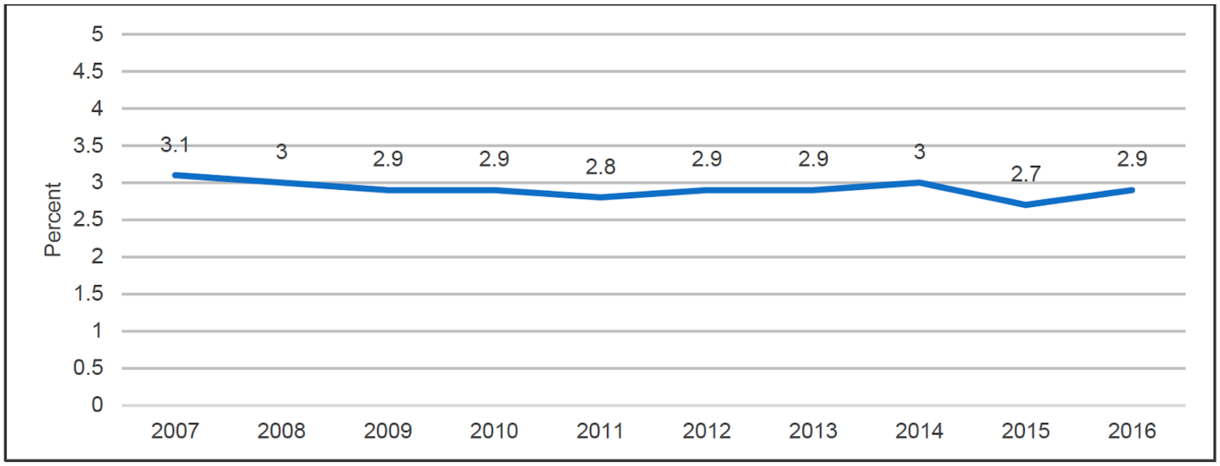


Figure 30: Tourism's Contribution to GDP, 2007-2016, Source: (RSA, 2019)

Table 7 below presents South Africa's Progress on SDG 8 Indicators.

Table 7 : South Africa's Progress on SDG 8 Indicators, , data adapted from (RSA, 2019)

<table>
<tr><th>Indicator</th><th>Key Data Points</th></tr>
<tr><td>8.1.1: Annual change in real GDP per capita, a key economic indicator</td><td><table><tr><th>2007</th><th>2015</th><th>2016</th><th>2017</th></tr><tr><td>3.978%</td><td>-0.356%</td><td>-1.037%</td><td>-0.268%</td></tr></table></td></tr>
<tr><td>8.2.1: Annual change in real GDP per employed person, a measure of economic productivity and efficiency</td><td><table><tr><th>2009</th><th>2015</th><th>2016</th><th>2017</th></tr><tr><td>1.2%</td><td>-2.5%</td><td>0.3%</td><td>-1.1%</td></tr></table></td></tr>
<tr><td>8.3.1: Percentage of non-agricultural employment categorized as informal, stratified by gender</td><td><table><tr><th></th><th>2008</th><th>2015</th><th>2016</th><th>2017</th></tr><tr><td>Males</td><td>29.1%</td><td>29%</td><td>29%</td><td>28.8%</td></tr><tr><td>Females</td><td>36.1%</td><td>30.3%</td><td>29.2%</td><td>29.4%</td></tr></table></td></tr>
<tr><td>8.4.2: Duplicate indicators for assessing domestic material consumption, including domestic</td><td><table><tr><th></th><th>2007</th><th>2011</th><th>2015</th><th>2017</th></tr></table></td></tr>
</table>

material consumption per capita and domestic material consumption per GDP.

DMC Consumption (tonnes)	689m	619m	637m	640m

	2007	2011	2015
DMC per capita (tonnes)	13.9	11.9	11.7

8.5.1D: Domesticated indicator for assessing average monthly earnings of female and male employees, categorized by occupation, age, and persons with disabilities.

		2010	2015	2016	2017
Managers	Females	R9000	R15000	R17000	R17000
	Males	R12000	R20000	R19000	R19000
Clerks	Females	R4000	R4333	R4500	R5000
	Males	R5000	R4800	R5430	R5000
Elementary	Females	R1500	R2000	R2080	R2166
	Males	R1700	R2400	R2600	R2700

8.5.2: Measurement of unemployment rate, taking into account sex, age, and persons with disabilities.

	2008	2013	2015	2016	2017
Females	25.8%	26.5%	27.5%	28.9%	29.4%
Males	19.7%	23%	23.2%	24.5%	25.5%

8.5.2A: Unemployment rate specifically for youth, aged 15 to 34 years, as an additional indicator.

2010	2014	2015	2016	2017
35.7%	35.9%	35.8%	37.6%	38.7%

<table>
<tr>
<td>8.6.1: The percentage of youth, aged 15 to 24 years, who are not engaged in education, employment, or training (NEET).</td>
<td>
<table>
<tr><th>2013</th><th>2015</th><th>2016</th><th>2017</th></tr>
<tr><td>32%</td><td>30.5%</td><td>32.2%</td><td>31.2%</td></tr>
</table>
</td>
</tr>
<tr>
<td>8.6.1A: The percentage of youth, aged 15 to 34 years, who are not engaged in education, employment, or training (NEET).</td>
<td>
<table>
<tr><th>2013</th><th>2015</th><th>2016</th><th>2017</th></tr>
<tr><td>38.2%</td><td>37.1%</td><td>38.1%</td><td>38.6%</td></tr>
</table>
</td>
</tr>
<tr>
<td>8.7.1D: The percentage of children, aged 7 to 17 years, involved in child labor, categorized by sex and age. This is a domesticated indicator tailored to South Africa's context.</td>
<td>
<table>
<tr><th></th><th>2010</th><th>2015</th></tr>
<tr><td>Females</td><td>6.7%</td><td>5.3%</td></tr>
<tr><td>Males</td><td>7.4%</td><td>5%</td></tr>
</table>
</td>
</tr>
<tr>
<td>8.8.1: Incidence rates of workplace injuries resulting in fatalities and non-fatalities, distinguished by gender and migrant status.</td>
<td>Number of fatal injuries - South African citizens
<table>
<tr><th>2014</th><th>2015</th><th>2016</th><th>2018</th></tr>
<tr><td>558</td><td>595</td><td>458</td><td>313</td></tr>
</table>
</td>
</tr>
<tr>
<td></td>
<td>Number of fatal injuries - Immigrants
<table>
<tr><th>2014</th><th>2015</th><th>2016</th><th>2018</th></tr>
<tr><td>26</td><td>25</td><td>18</td><td>6</td></tr>
</table>
</td>
</tr>
<tr>
<td>8.9.1: The contribution of tourism direct GDP to the overall GDP and its growth rate.</td>
<td>GDP generated by means of tourism
<table>
<tr><th>2007</th><th>2011</th><th>2015</th><th>2016</th></tr>
<tr><td>3.1 %</td><td>2.8 %</td><td>2.7 %</td><td>2.9%</td></tr>
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<tr>
<td>8.10.1: (a) Density of commercial bank branches per 100,000 adults and (b) density of automated teller machines (ATMs) per 100,000 adults.</td>
<td>Commercial bank branches per 100 000
<table>
<tr><th>2012</th><th>2014</th><th>2015</th><th>2016</th></tr>
<tr><td>10.9</td><td>11.8</td><td>11.3</td><td>10.9</td></tr>
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<td>ATMs per 100 000
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<tr><th>2012</th><th>2015</th><th>2017</th></tr>
<tr><td>67.6</td><td>80.5</td><td>82.5</td></tr>
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Data Table 5 data indicates that South Africa can report on 11 SDG 8 indicators, encompassing nine Tier I or Tier II SDG indicators, two domestic indicators, and two additional indicators. Notably, economic growth exhibits only a slight acceleration and remains sluggish (8.1.1 and 8.2.1). This is partially reflected in the decline of domestic material consumption (8.4.2). Of significant concern is the persistent high unemployment rate (8.5.2), especially among the youth (8.6.1 and 8.6.1A).

SDG 13: Targets and Indicators

SDG 13, is focused on addressing climate change and its impacts. The goal encompasses various targets to combat this global challenge.

Target 13.1 emphasizes the importance of strengthening resilience and adaptive capacity in the face of climate-related disasters. This is measured by the number of deaths, missing persons, and directly affected people attributed to such disasters per 100,000 population.

Target 13.2 calls for integrating climate change measures into national policies, strategies, and planning. The indicator for this target evaluates the existence of national policies, strategies, or plans specifically designed for climate change adaptation.

Target 13.3 highlights the necessity of enhancing education, awareness, and capacity building related to climate change mitigation, adaptation, impact reduction, and early warning systems. An important indicator for this target is the number of countries that have communicated their establishment or operationalization of an integrated policy, strategy, or plan addressing disaster risk reduction, preparedness, and response.

Target 13.a focuses on the commitment of developed-country parties to the United Nations Framework Convention on Climate Change. They are urged to jointly mobilize $100 billion annually by 2020 from all sources. This funding is aimed at addressing the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation. The indicator measures the actual amount of funds mobilized annually in United States dollars.

Target 13.b is dedicated to promoting mechanisms that enhance the capacity for effective climate change-related planning and management, particularly in least developed countries and small island developing states. A unique aspect of this target is the emphasis on inclusivity by focusing on women, youth, as well as local and marginalized communities.

These SDG 13 targets and indicators collectively strive to combat climate change, boost resilience, and support the world in dealing with the far-reaching consequences of this global challenge.

South Africa Goal 13 Indicators

The 2019 SDGs county report for South Africa indicates that there is currently no data available for all SDG 13. The report states that South Africa is in a position to report on one domesticated SDG 13 indicator: Indicator 13.1.2D which focuses on the number of national and local disaster risk-reduction strategies adopted by South Africa.

In the absence of official data on SDG 13 indicators for South Africa in the latest comprehensive report (RSA, 2019), South Africa's progress towards SDG 13 can be assessed by focusing on key factors such as rising temperatures, extreme weather events, and greenhouse gas emissions. Data on these climate-related parameters can provide valuable insights into the nation's commitment to addressing climate change.

While South Africa's 2019 SDGs country does not provide systematic data on SDG 13 indicators, the report presents some figures in its narrative. The source of the figures points to South Africa's Third National Communication under the United Nations Framework Convention on Climate Change (RSA, 2018).

Figure 31 below illustrates trends in total annual rainfall for individual weather stations during the period from 1921 to 2015.

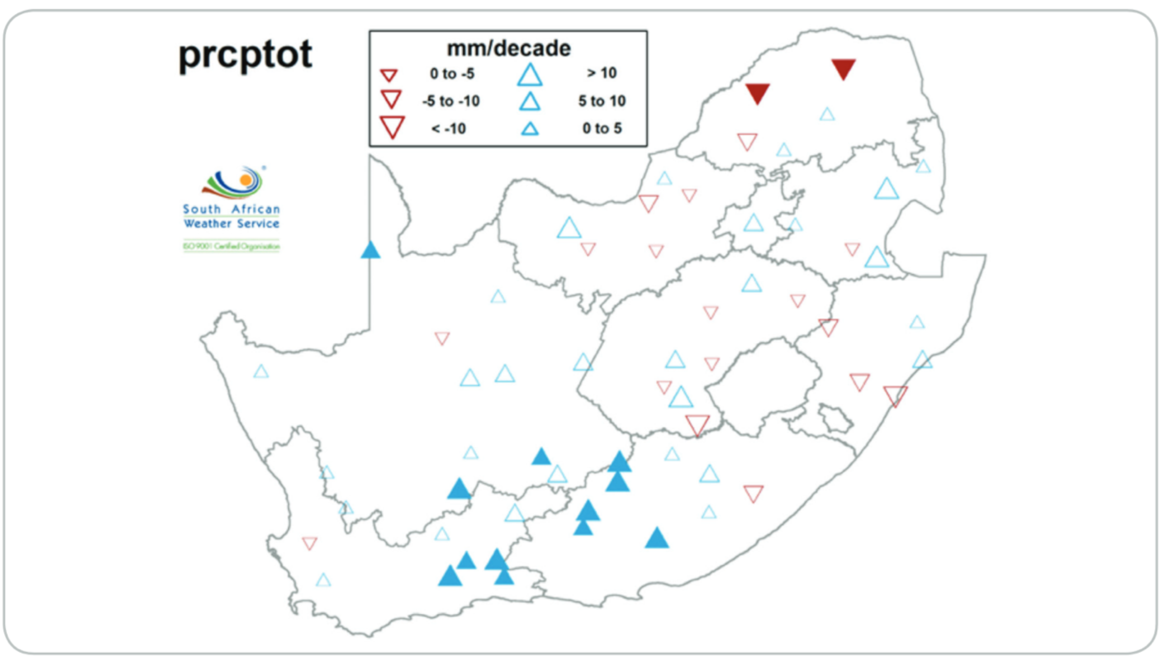

Figure 31: Annual Rainfall Trends (1921-2015) at Individual Stations, Source: (RSA, 2018)

Figure 31 above indicates a statistically significant positive trend in annual rainfall across the central southern interior. Conversely, there are statistically significant negative trends in rainfall in the northern regions of Limpopo Province. For the majority of the country, annual average rainfall trends appear to be largely statistically insignificant.

While significant trends don't exhibit substantial spatial coherence for most seasons, the positive trends in annual rainfall across the southern interior are primarily manifested during the summer rainfall season, which is the primary rainy period for this region. In contrast, the declining trends in annual rainfall over Limpopo are primarily attributed to decreasing rainfall trends during the autumn season.

In this figure, distinct symbols indicate various trends, with shaded symbols highlighting significant trends at the 95% confidence level.

Average Temperature

From 1931 to 2015, a significant warming trend was observed in annual mean temperatures, as indicated in Figure 32 below. This warming trend is consistent with findings from previous studies (Engelbrecht et al., 2015; Kruger, 2010; Kruger & Sekele, 2012; MacKellar et al., 2014 cited in (RSA 2018).

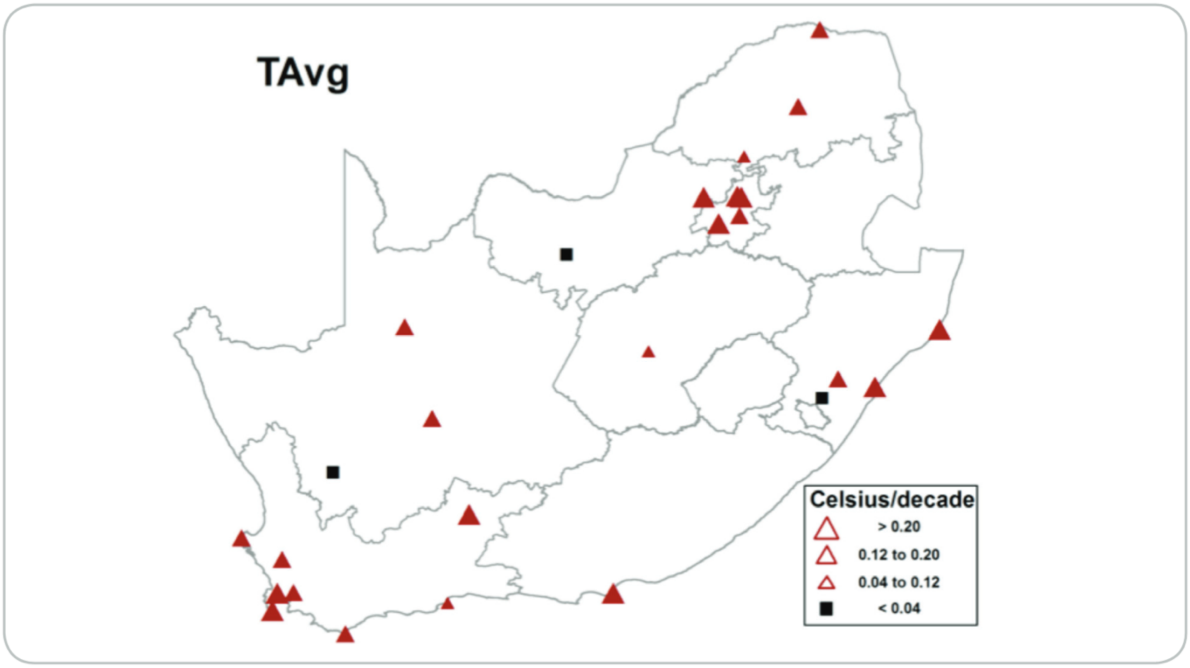

Figure 32: Trends in Annual Average Temperatures (1931-2015): Filled Triangles Signify 95% Confidence Level of Significance, Source: (RSA, 2018)

Data on Figure 32 above indicates that some weather stations exhibited warming trends exceeding 2°C per century, which is notably higher than the global average warming trend of approximately 1°C per century. The most substantial warming trends were observed in the arid western regions of South Africa, particularly in the Northern Cape and Western Cape. Significant warming trends were also identified in the northeast, covering areas in Limpopo and Mpumalanga, extending southward to the east coast of KwaZulu-Natal.

Data Interpretation and Analysis

This subsection is dedicated to analysing data presented in the preceding section. Data analysis for each goal involves a qualitative (and where needs be, a quantitative assessment) of South Africa's milestones in achieving the SDG targets. As a measure of progress, the milestones are assessed against the progress indicators for each target under the respective goals.

4.1. SDG 1: No Poverty

This section presents a comprehensive analysis of South Africa's progress in achieving Sustainable Development Goal 1. The section also delves into the issue of how national SDG indicators can mask disparities at the local level. Also, the section highlights the negative impact of neoliberalism on South Africa's poverty reduction and sustainability efforts.

Business as Usual Versus SDG 1 2030 Targets Scenarios

In this section, the study critically analyzes the disparities between the Business as Usual (BaU) scenario, as depicted in SA's SDGs country report (RSA, 2019), and the ideal SDGs 2030 scenario based on the study by Fofana et al (2018). The analysis provides a comprehensive assessment of South Africa's progress in achieving SDG 1 and references data presented to buttress the arguments made.

Business as Usual (BaU) Projection versus SDGs Scenario

The BaU scenario, as observed in the RSA 2019 data, projects an increase in the percentage of people living below the poverty line from 55.2 percent in 2015 to 56.1 percent in 2030. This projection is concerning as it suggests a rise in poverty levels in the coming years as indicated in Figures 7, Figure 8 as well as Table 1. Additionally, Table 1 data premises a prediction that by 2030, 23.6 percent of South Africa's population will still be living below the income threshold of R 441 per month, a clear indicator that poverty reduction is not progressing as intended.

Ideal SDGs 2030 Scenario

In contrast, the SDGs scenario based on the study by Fofana et al (2018) sets the ideal targets for eradicating poverty and hunger. To meet these targets, it is essential that South Africa significantly improves its economic growth.

The data is derived from the simulation study by Fofana et al (ibid) as well as StatsSA (2017).

Table 8:Business as Usual (BaU) Poverty and Hunger Simulation Results

	Year 2015	Year 2030	Percentage Change
Per capita expenditure (in South African rand)	30,565	31,723	3.8
Gini index	0.673	0.683	1.5
Poverty index	0.552	0.561	1.6
Hunger index	0.231	0.236	2.2

Data adapted from (StatsSA , 2017) and (Fofana et al., 2018)

The data in Table 8 above shows that in the BaU projection, the percentage of people living below the poverty line (R922 per month 2015 prices) will increase from 55.2 percent in 2015 to 56.1 in 2030. Presented data also shows the absolute number of poor people is projected to increase significantly within the 2015 - 2030 period. Presented data also indicates that by 2030, 23.6 percent of South Africa's population will still be living below the income threshold of R 441 per month (2015 prices).

Currently, the average economic growth is 2.0 percent per year; however, to meet the SDGs for eradicating poverty and hunger, this growth must increase to 4.5 percent between 2015 and 2030. This highlights the gap between the current trajectory and what is required to achieve the SDGs based SDG 1 indicators data for South Africa summarised in Table 1.

Social Assistance Expansion Strategy

Moreover, the study suggests that an expansion of social assistance is crucial to eradicating hunger by 2030. This strategy entails covering approximately 10% of the population, or close to 7 million people, with social assistance. The importance of social assistance is further underscored by the data from StatsSA (2017), which shows that despite some reductions in multidimensional poverty, individual money-metric poverty worsened between 2011 and 2015. This worsening poverty can be attributed to factors such as growing unemployment rates, slow economic development, rising prices, and policy instability (Table 1).

GDP Growth and Inequality

To meet the SDGs' consumption expenditure target, the economy must experience average annual GDP growth of 4.5 percent.

Table 9: Required (SDGs) GDP and Investment Targets Versus BaU

	Business as Usual (BaU) Scenario	SDGs Scenario
Gross Domestic Product (GDP)	2.0	4.5
Investment	3.0	5.7

Adapted from Fofana et al. (ibid)

This is a significant contrast to the current growth performance of 2.0 percent as shown in Table 9 above, suggesting that the nation needs to more than double its economic growth to achieve the SDGs for ending poverty and hunger.

Policy Challenges and Income Disparities

The data analysis also reveals policy challenges and income disparities. South Africa's progress in reducing poverty and income inequality lags behind that of countries with significantly lower per capita incomes, such as Indonesia and Vietnam. Despite the implementation of social grants and other social welfare programs, the income poverty levels have increased from 36.4 percent in 2011 to 40 percent by 2016. Persistent income inequality, with a high Gini coefficient, remains a major challenge (RSA, 2019).

Data analysed clearly indicates that the Business as Usual scenario, as presented in the RSA 2019 data, falls short of the ideal SDGs 2030 scenario based on the study by Fofana et al (2018). The data suggests that South Africa must significantly enhance economic growth, expand social assistance, and address policy challenges to achieve the SDG 1 targets. These findings highlight the urgency of implementing effective policies and strategies to eradicate poverty and hunger in South Africa.

National SDG Indicators On Poverty Mask Progress or lack Thereof At Local Levels

This sub section delves into the issue of how national SDG indicators can mask the real progress, or the lack thereof, at the local levels. The sub section references the data presented in Table 1 and figures provided to illustrate these disparities, emphasizing the significance of considering local conditions in the assessment of poverty and inequality.

Local-Level Progress versus National Averages

The data from Wernecke et al. (2021), Table 10 below, highlights the importance of studying and mapping the gaps in national progress toward the Sustainable Development Goals (SDGs) at the local level.

Table 10: Local SDG Data Versus National SDG Data

SES Metric	Indicator (SDG)	South Africa (%)	Giyani (%)	Target (%)
Income	Population living under international poverty line (SDG 1-1.1.1)	7.4	17.7	0.0
Income	Population living under international poverty line (SDG 1-1.2.1)	25.2	17.7	0.0
Employment	Unemployment rate (SDG 8-8.5.2)	27.3	49.0	0.0
Water	Access to drinking water (SDG 6-6.1.1)	86.0	99.3	100.0
Sanitation	Access to sanitation	70.0	99.3	100.0
Housing	Population living in informal dwellings (SDG 11-11.1.1)	12.2	42.9	0.0
Access to internet	Proportion of people using the internet (SDG 17-17.8.1)	61.8	4.2	100.0

Source, (Wernecke et al., ibid)

The study focused on four low-income rural villages in South Africa (Giyani) and compared their progress to national SDG indicators. The findings reveal that the village scores differ significantly from national averages, and several areas require attention. In nutshell, the implication is that South Africa' indicators for SDG 1 are worse than what the picture painted by the nationally aggregated data.

Poverty and Unemployment

According to the study, Giyani villages exhibit higher levels of poverty compared to the country as a whole. For instance, the population living under the international poverty line in Giyani is notably higher (17.7%) compared to the national average (7.4%). The situation is similar for unemployment rates, with Giyani reporting 49.0% compared to the national average of 27.3%. These disparities underscore the need for targeted efforts to address local poverty and unemployment issues.

Access to Services and Housing

On the positive side, Giyani villages surpass national averages in some aspects. They have better access to water, sanitation, and housing compared to the country as a whole. For example, access to drinking water and sanitation is significantly higher in Giyani than the national average. These findings emphasize the importance of local context when evaluating progress towards SDGs, as well as the need for a nuanced approach to policy and interventions.

Data Availability and Local Assessment Challenges

However, it is important to note that a thorough evaluation of local progress was hampered by a lack of data availability. Local conditions and progress may be more nuanced and complex than the aggregated statistics suggest, which necessitates further research and data collection at the local level to fully understand the disparities and challenges (Table 10).

In summary, the data analysis from Wernecke et al. (2021) demonstrates that national SDG indicators can mask the real progress or lack thereof at the local levels. Local conditions, such as poverty, unemployment, and access to services, can significantly differ from national averages. This emphasizes the importance of local context and targeted interventions when working towards achieving the SDGs. It also underscores the need for comprehensive data collection at the local level to gain a more accurate understanding of disparities and challenges.

Neoliberalism: A Stumbling Block to SDG 1

Neo-Gramscian theories emphasize the role of power and ideology in shaping economic policies. In South Africa, neoliberalism has been the dominant ideology, influenced by powerful actors and institutions. Neoliberal hegemony has limited the state's ability to address poverty comprehensively. This subsection examines the role of neoliberalism as a stumbling block to South Africa's quest to achieve SDG 1 by 2030.

Neoliberal Policies Prioritize Private Interests Over Poverty Reduction

Neoliberal policies prioritize private sector interests. These policies may not effectively address SDG 1's goal of ending poverty because they tend to benefit private capital rather than focusing on strategies to alleviate poverty among the poorest citizens. This argument is corroborated by Sebake (2017) who asserts that neoliberal policies benefit the private sector more, dictating the economic control in the interest of capital.

Data from Figure 7 shows percentages of the South African population living below the poverty line for the period between 2006 and 2015: 25.4% (2006), 26.3% (2009), 16.4% (2011), 18.8% (2015). The data indicates grim inequality in the distribution of economic gains. This aligns with the notion that the country's largely neoliberal policies tend to benefit private capital.

SDG 1 Indicator key data points in Table 1 shows how the inequality bears crucial gender layer with more females living below the poverty line that males:

- Male: 45.9% (2006), 46.2% (2009), 45.5% (2011), 46.3% (2015)
- Female: 53.9% (2006), 53.8% (2009), 54.5% (2011), 53.7% (2015)

The trend in poverty rates can be mapped to their relationship with the country's neoliberal macroeconomic policies.

Unequal Distribution of Economic Gains Under Neoliberalism

Neoliberal policies like GEAR have failed to transfer wealth back to the people. SDG 1 aims to ensure that the benefits of economic growth are shared with the poorest in society. However, if neoliberalism perpetuates inequality and concentrates wealth in the hands of a few, it becomes a barrier to achieving this goal. "...GEAR did not assist in the acceleration of transferring the wealth of South Africa back to the people" (Sebake 2017, p. 4).

Business as Usual (BaU) Poverty and Hunger Simulation Results for the 2015 - 2030 period in Table 8 suggest that under neoliberal policies, there is a sustained and an unequal distribution of economic gains as reflected in income inequality (Gini Index), persistent poverty (Poverty Index), and ongoing hunger (Hunger Index).

Income Inequality

The persistently high Gini coefficient (Table 8) in South Africa, despite its per capita GDP level, is an indication that economic growth alone, even with neoliberal market mechanisms, cannot eliminate poverty. The emphasis on deregulation and reduced state intervention in the neoliberal agenda has allowed for a significant wealth gap to persist. Table 8 data suggests that redistributive policies and addressing income inequality are crucial for eradicating poverty.

Limited State Capacity to Address Poverty

In South Africa Neoliberal policies have, in some cases, shifted the role of the state from providing comprehensive services to focusing on economic liberalization. This reduced state capacity to address poverty directly. The state's ability to implement social safety nets, wealth redistribution, and other poverty alleviation measures may be hampered, hindering progress toward SDG 1.

Challenges to Poverty Reduction

The data from the 2023 National Development Plan (NDP, 2023) review reveals the challenges South Africa faces in tackling poverty and income inequality. The government acknowledges that poverty levels have increased since 2011, citing factors such as unemployment, slow economic growth, rising prices, and policy instability as contributing to this trend. This highlights the limitations of neoliberal policies in addressing the root causes of poverty.

Furthermore, the NDP report identifies inadequate economic growth, job creation, and skills mismatches as additional barriers to achieving SDG 1 . These challenges are intertwined with the neoliberal approach that limits state intervention in labor markets and social protection.

Comparative Analysis

The comparative analysis of South Africa's progress in reducing poverty and income inequality with countries like Indonesia and Vietnam, which have lower per capita incomes but have achieved better poverty rates, underscores the limitations of the neoliberal approach . The data suggests that alternative economic policies and approaches may be more effective in poverty reduction.

4.2. SDG 6: Water and Sanitation

This section presents an analysis of South Africa's performance with regards to SDG 6. Based on the data presented, the analysis explores various key challenges that characterise the country's deficient efforts in making strides to meet SDG 6 deliverable by 2030.

Uneven Access to Safe Drinking Water

South Africa has made significant strides in improving access to safe drinking water as shown in Figure 16. However, substantial discrepancies persist between rural and urban areas, with rural regions experiencing a notable 5% growth compared to a mere 1% increase in urban settings (RSA, 2019). These disparities indicate that a significant portion of the population remains underserved: thwarting the country's prospects for achieving target 6.1 of SGD 6.

Sanitation and Hygiene Challenges

While the country reports improved sanitation facilities (Figure 17), the urban areas face challenges in achieving access, possibly due to shared sanitation facilities and increasing populations (RSA, 2019). As South Africa's population grows, providing sanitation services for a rising number of households becomes more complex.

Access to on-premises hand-washing facilities is higher in urban areas, with twice the percentage of rural regions (Figure 18). This points to ongoing rural-urban disparities in providing basic hygiene services. Population growth further complicates the challenge, particularly in rural areas (RSA, 2019).

Water Quality Concerns

Ensuring water quality is a fundamental aspect of SDG 6. Data reveals that only 58% of South Africa's water bodies meet water quality objectives (6.3.2D) (RSA, 2019). This statistic raises concerns about water pollution and the impact on water resources, threatening the goal of universal access to clean water.

Water Efficiency and Scarcity

South Africa's water-use efficiency is recorded as 3,439 USD per m^3, indicating potential inefficiencies (6.4.1) (RSA, 2019). Figure 18 data indicates that this efficiency challenge, coupled with a high level of water stress—where freshwater withdrawal reaches 41.38% of available resources (6.4.2), underlines the complexities of managing water scarcity. Water scarcity can affect various sectors, including agriculture and industry.

Ecosystem Protection

The protection of water-related ecosystems, such as dams, estuaries, wetlands, and lakes, is central to SDG 6. Nevertheless, South Africa faces substantial challenges. Figure 19 data shows that only 11% of wetland ecosystems are adequately protected (6.6.1D1), and estuarine ecosystems confront similar issues (RSA, 2019). This data underscores the imperative for comprehensive protection of these vital ecosystems.

Community Participation

Despite SDG 6.6's call for community participation in water and sanitation management, South Africa encounters challenges. Established and operational policies and procedures for community involvement are yet to be fully realized (6.b.1) (RSA, 2019). Effective engagement of local communities is essential for progress toward SDG 6 objectives.

The challenges outlined, supported by the provided data and figures, collectively underscore that South Africa faces stern obstacles in achieving SDG 6 by 2030. These obstacles range from access disparities and sanitation challenges to water quality concerns, efficiency issues, and ecosystem protection. Addressing these challenges is essential to align South Africa with the global goal of ensuring universal access to clean water and sanitation, vital for sustainable development.

HRBA and the Right to Water and Sanitation

Human Rights-Based Approach (HRBA) locates human rights at the center of developmental process and efforts. In the context of SDG 6: the approach asserts the provision of clean water and sanitation not only as a sustainable developmental goal, but also as a fundamental human right. Furthermore, the approach centers non-discrimination, participation, empowerment and lastly, accountability in the efforts to accomplish this goal.

In tandem with the ethos of the HRBA, South Africa enshrined the right to water and sanitation in its constitution in 2002. This move aligned the country with HRBA prescripts as far as achieving SDG 6 is concerned.

Structural Inequalities and Discrimination

The HRBA approach which emphasizes non-discrimination as well as equal access to services is helpful in problematising the structural inequalities and discrimination in South Africa’s quest to provide clean water and sanitation to every South African citizen. Data presented indicates glaring disparities between urban and rural areas in the provision of water and sanitation services. This reality is also an index to historical injustice: a legacy of apartheid.

Discrimination is often a barrier to marginalized communities' access to water and sanitation. In their research on Water ‘Apartheid’ and the Significance of Human Rights Principles of Affirmative Action in South Africa, Jegede et al. (2021) highlighted a situation where the affluent have the means to purchase water access, while marginalized communities, primarily rural black populations unable to afford these costs, are disproportionately burdened by inadequate access to sufficient water.

In response to the injustices of the apartheid era, the 1996 South African Constitution, in Section 27(1)(b), enshrined the right to adequate water access. Alongside principles of equality and non-discrimination, the Constitution has influenced various measures, including the free basic water policy and pre-paid meters, aimed at ensuring water accessibility. Nevertheless, the challenges faced by marginalized populations persist in post-apartheid South Africa, and there is a limited academic examination of how the concept of affirmative action, rooted in human rights principles of equality and non-discrimination, can be employed to address these issues (Jegede et al., 2021).

Jegede et al (ibid) further argue that "... the continuing struggle of disadvantaged communities with access to water does not only constitute water apartheid, it negates the human rights principles of equality and non-discrimination".

While data from the government report indicates a progression towards the realisation of SDG 6- a closer examination of the implementation of free basic water and prepaid water meters mechanisms indicates that South Africa is facing a grim outlook in meeting SDG 6 targets by 2030.

Inadequate Implementation of Progressive Measures

The free basic water policy, established to provide essential water access, is hampered by shortcomings in its execution. Although it has been implemented in 95% of relevant municipalities by 2017, many poor households still lack access to the stipulated water standards and quantities (RSA, 2017). The 2019 General Household Survey (GHS) conducted by Statistics

South Africa (StatsSA, 2019) revealed a lack of substantial progress in access to drinking water, particularly in provinces like Mpumalanga, Limpopo, and the Free State. Less than 50% of households in 2019 reported having piped water, and 31% relied on unsafe water sources such as rivers and dams (StatsSA, 2019). Predominantly black and marginalized communities in rural areas and informal settlements continue to bear the brunt of this disparity.

Poor Economic Growth

Economic growth is a critical enabler for achieving the SDGs, and South Africa's sluggish economic growth poses a significant obstacle to the country's ability to address large-scale water infrastructure projects. The 2019 Voluntary National Review (VNR) emphasizes the need for an annual economic growth rate of 7% to enable progress towards the SDGs, yet South Africa consistently falls short of this target (VNR, 2019). The economic woes are further compounded by the negative effects of the COVID-19 pandemic, which led to a GDP decline of -8% in 2020 (StatsSA, 2019).

Increasing Pollution

The report by the Department of Water and Sanitation (DWS, 2022) indicates that the quality of water bodies in South Africa is deteriorating, with about 40% experiencing poor water quality due to pollution. Destruction of river catchments contributes to this problem. Faecal contamination has reached alarming levels, with 53% of sampled sites posing health hazards due to microbial contamination from faecal pollutants (DWS, 2022).

Water Stress and Insufficient Supply

South Africa faces a projected 17% water deficit by 2030, with a decrease in access to improved water facilities from 87.5% in 2015 to 86.4% in 2017 (2018 National Water and Sanitation Master Plan). Safe and reliable access to water stands at only 64% (Winter 2021). The situation presents water stress, where demand surpasses supply, leading to reduced water availability, agricultural challenges, and ecological consequences. The lack of water supply and poor infrastructure maintenance result in the ongoing deterioration of the country's water systems (Winter, 2021).

Poor Monitoring and Data Collection

Data is essential for tracking progress toward the SDGs, yet South Africa struggles with outdated and aggregated data that fails to provide meaningful insights. The current data on SDG 6 is presented on the South Africa Goal Tracker portal, which offers limited and outdated information (StatsSA). The lack of comprehensive and up-to-date data hinders effective decision-making and policy formulation.

Gaps in Service Delivery

The challenges of supplying clean water are compounded by difficulties in installing water infrastructure in informal settlements, which often have complex spatial layouts and lack sewage connections. Violent social protests further disrupt water infrastructure.

In summary, South Africa faces a complex web of challenges that hinder progress toward SDG 6. These issues include inadequate implementation of progressive measures, persistent inadequate access to water, poor economic growth, pollution, water stress, insufficient supply, poor data collection, and gaps in service delivery. To effectively address these challenges, a concerted effort is required to improve governance, investment, and policy implementation.

4.3 SDG 7: Affordable and Clean Energy

This section delves into a comprehensive data analysis concerning South Africa's quest to meet Sustainable Development Goal 7 (SDG 7). The analysis presents a multifaceted view of South Africa's progress and challenges in achieving SDG 7.

Access to Electricity: Progress Towards Universal Electrification

While South Africa has made notable progress in increasing access to electricity, challenges remain in achieving universal electrification (Indicator 7.1.1). Figure 20 shows that despite improvements, approximately 5% of the population still lacks access to electricity, indicating that the goal of universal electrification by 2030 remains elusive.

Solar Energy Adoption: A Slow Transition from Conventional Sources

Despite the load shedding crisis prompting some uptake of solar energy alternatives, data in figure 21 shows that the adoption of solar energy as the primary energy source in South Africa remains limited (7.1.2D): 0.1% in 2014 and 0.1% in 2016 for cooking, 0.3% in 2014 and 0.5% in 2016 for lighting, 0.8% in 2014 and 0.6% in 2017 for heating water and 0.2% in 2014 and 0.1% in 2017 for heating space.

The data reveals that solar energy usage is particularly constrained for cooking, lighting, and space heating, with conventional fossil-based fuels still dominating the energy landscape. This underlines the slow transition away from conventional sources, hindering SDG 7 progress.

Renewable Energy Share: A Positive Shift in the Energy Mix

South Africa has demonstrated a significant increase in the share of renewable energy in its energy mix (Indicator 7.2.1). Data on Figure 22 clearly highlights this transition, with the renewable energy share rising from 14.6% in 2013 to 26.2% in 2015. This progress signifies a substantial step toward achieving a more sustainable energy future in alignment with SDG 7.

Annual Electricity Generation from Renewables: Scaling Up Clean Energy

In tandem with the increased renewable energy share, South Africa has significantly augmented its electricity generation from renewable sources (7.2.1A2). Data on Figure 24 paints a positive trajectory, with renewable energy contributing significantly to the country's energy generation capacity. This shift is pivotal in moving towards cleaner and more sustainable energy sources.

Energy Intensity: Balancing Efficiency and Fluctuations

South Africa has witnessed improvements in energy efficiency between 2011 and 2015, as demonstrated by a reduction in energy intensity (7.3.1). However, the data (Figure 25) also highlights fluctuations in energy intensity between 2013 and 2014, underscoring the need for sustained efforts to ensure consistent energy efficiency. This is vital for the country to effectively work towards SDG 7.3.1 on energy efficiency.

Hegemony and Dominant Interests: Impediments to Transition

A Neo-Gramscian analysis is helpful in corroborating and giving broader political economic context to the challenges South Africa is facing towards the realisation of SDG 7. The analysis unravels the profound influence of dominant players and interests within South Africa's energy sector, particularly the coal industry. These interests have historically exerted substantial influence in policy-making processes, primarily due to the dominant role of coal in the energy landscape. Notably, coal accounts for 80% of South Africa's greenhouse gas emissions, making its transition imperative to align with the Nationally Determined Contributions (NDCs) under the Paris Agreement, national development objectives, and to mitigate adverse externalities such as pollution and health impacts (Hanto et al., 2022).

Moreover, these dominant interests have intricate connections with key government institutions. State-owned utilities like Eskom, which operates a significant portion of South Africa's coal power fleet, and Sasol, an energy and chemical company involved in coal-to-liquids and chemicals, have deep-seated ties to coal. The coal mining sector played a pivotal role in post-apartheid economic redistribution, connecting political elites with mining interests. However, Eskom now faces financial and operational crises, necessitating continuous state bailouts due to insurmountable debt. This crisis stems from various issues, including cost overruns at new coal plants, tariffs that do not reflect generation costs, mismanagement, and corruption (Hanto et al., 2022). The prolonged load shedding in the past decade, reaching 10% of the year in 2020, further underscores the challenges (Wright et al., 2020).

Although international diversified miners have divested from coal, local actors continue to support the sector, often advocating for "clean coal" with carbon capture. This includes parts of the government, coal-related trade unions with differing views on coal's future, and local coal mining companies, their owners, and financiers. The focus of the national discourse centers on job preservation and the socio-economic risks faced by coal-dependent municipalities. Approximately 120,000 people are directly employed in the coal sector, further cementing the perception of coal's importance to socio-economic development (Hanto et al., 2022; StatSA, 2021; TIPS, 2020).

Counter-Hegemonic Forces: Challenging the Status Quo

In contrast, there is a burgeoning movement advocating for a low-carbon transition and the increased use of renewable energy sources (RES). This coalition consists of pro-renewable government factions, international independent power producers (IPPs), civil society including NGOs, and think tanks. While a general shift toward more RES-friendly policies is discernible, the regulatory environment remains rigid. Delays in policy implementation, coupled with government lapses in RES procurement, have introduced uncertainty for investors (Hanto et al., 2022; GreenCape, 2020).

The South African energy sector operates under government regulation, with the Department of Mineral Resources and Energy (DMRE) overseeing policy, electricity generation, and new capacity allocation. The Department of Public Enterprises (DPE) is responsible for Eskom, while the national electricity regulator of South Africa (NERSA) establishes tariffs for Eskom. Additional state ministries, such as the Department of Trade, Industry and Competition (DTIC) and the Department of Forestry, Fisheries, and the Environment (DFFE), shape the energy sector's context and environmental policies. These complexities in governance and regulation add to the challenges of transitioning to renewables (Hanto et al., 2022; Climate Action Tracker, 2020).

Human Rights-Based Analysis of Energy Access: Equity and Vulnerable Populations

A human rights-based approach emphasizes equitable energy access, highlighting the disparities in energy provision within South Africa. Vulnerable populations, particularly in rural areas, face energy inequalities, which lead to human rights violations (Indicator 7.1.1). The lack of access to modern energy services negatively impacts basic necessities like healthcare and education (Indicators 7.1.1, 7.2.1).

4.4. SDG 8: Decent work and economic growth

South Africa has set its sights on achieving Sustainable Development Goal 8 (SDG 8), which focuses on promoting sustained, inclusive, and sustainable economic growth while prioritizing productive employment and decent work for all. This section analyses South Africa's performance in relation to SDG 8. The section indicates significant challenges South Africa is facing on its path to achieve SDG 8 goal by 2030.

Sluggish Economic Growth: Challenges in Achieving Economic Growth

South Africa's commitment to SDG 8 is underscored by its efforts to sustain per capita economic growth. However, data from Table 4 shows that between 2015 and 2017, the country experienced a downturn in its economic growth, marked by declining annual growth rates of both GDP per capita and GDP per employed person. Notably, real GDP per capita saw negative growth rates of -0.356% and -1.037% in 2015 and 2016, followed by a marginal increase of 0.31% in 2017. These figures indicate that South Africa's economy is struggling to meet SDG 8's growth targets and is impeding progress toward other SDGs.

Informal Employment and Decent Work: Transitioning from Informal to Formal Employment

A critical aspect of SDG 8 is the promotion of decent work, which includes transitioning workers from the informal to the formal sector. Table 5 reveals that South Africa faces the challenge of relatively stable levels of informal employment in non-agricultural sectors, particularly among males and females. Despite a marginal decrease in the proportion of informal employment in 2017 compared to the previous year, this data highlights the need to address the prevalence of informal employment, a crucial element of achieving decent work.

Persistent Gender Wage Gap: Gender-Based Income Disparities

The issue of gender-based income disparities persists in South Africa. Data from Table 6 highlights that, although there have been improvements in compensation for both genders in various occupational groups, a gender pay gap remains. Female employees consistently earn less than their male counterparts. This persistent gender wage gap underscores the challenges in achieving fair and decent work for all, making it difficult to meet the gender equality targets of SDG 8.

High Unemployment Rates: Challenges in Employment

South Africa continues to grapple with high unemployment rates, especially among its youth. Figure 26 depicts the rise in unemployment rates, with female unemployment increasing from 25.8% to 29.4%, male unemployment from 19.7% to 25.5%, and the overall unemployment rate from 22.4% to 27.25% between 2008 and 2017. Furthermore, Figure 27 illustrates a staggering increase in youth unemployment, particularly among those aged 15 to 24, rising from 35.7% in 2010 to 38.7% in 2017. These figures reflect a systemic problem that impedes the achievement of SDG 8's employment and decent work objectives.

Youth Disengagement: Barriers to Youth Engagement

South Africa faces the challenge of youth disengagement from education, employment, and training. Indicators 8.6.1 and 8.6.1A demonstrate that a substantial portion of the youth population is not actively participating in the workforce or educational system, with rates hovering around 31% for the 15 to 24 age group and approximately 38% for the 15 to 34 age group. This disengagement stifles the prospects of achieving SDG 8's goals, particularly related to youth employment and education.

Child Labor: Eradicating Child Labor

Eradicating child labor is a critical component of SDG 8. Figure 28 highlights child labor participation among children aged 7 to 17, categorized by gender and age. While there have been some improvements, challenges remain, emphasizing the need for effective measures to eliminate the worst forms of child labor, aligning with SDG 8's targets.

To corroborate analysis of the 2019 data above, 2023 NDP review data (Figure 33 below) spotlights South Africa’s slow economic growth and job creation.

NDP target	Baseline	2015		2017	2020	2030
	(2011)	Target	Actual	Actual	Target	Target
GDP growth	3.3%	4.6%[2]	2.2%[3]	0.9%[4]	4.6%[5]	5.0%
Investment (gross fixed capital formation) as a percentage of GDP	19.3% (2010)	25%	20.9%		30%	30%
Public sector (state and state-owned entities investment as a percentage of GDP	6.8%		7.8%		10%	10%
Exports growth (constant rand)	6.6% (2010–13)		1.6% (2014–16)	0.6%	6%	6%
Non-traditional exports growth (non-mining based)	7.6% (2010–13)		4.0% (2014–16)	-0.8%	10%	10%
Mining/metals exports	5.9%		-0.7%	1.9%		

Figure 33:NDP targets and outcomes (GDP, investment and exports)

Source: (NPC, 2023)

The report indicates that South Africa's economic growth rate between 2012 and 2019 averaged only 1.3% annually, far below the NDP target of 5.4% by 2030 (NPC, 2023). This slow growth rate can be linked to insufficient job creation, with the stasis of the employment rate signalling failure to meet NDP's ambitious targets.

What is also key from the report is the acute investment gap. The report indicates that the NDP aimed for investment to reach 30% of GDP by 2030, but actual investment averaged only 19.6% during the review period (2012-2019). Declining private business investment is cited as the major contributor to the investment lacuna.

On income inequality and concentration of wealth, the 2023 NDP review shows that South Africa is still battling with grim levels of income inequality (which are amongst the highest globally), with a Gini coefficient of 0.69 in 2010, and a target of reducing it to 0.60 by 2030.

“By global comparison, South African income inequality is most extreme in relation to income accruing to the top 10% (or top decile) and that going to the bottom 60%. In 2005, the share of about 37% going to deciles 7, 8 and 9 was in line with the global average. The global average income going to the top decile was 32% as compared to 45% in South Africa. The global average income accruing to decile 5 and 6 and to deciles 1 to 4 were 15.4% and 16.6% respectively, as compared to about 10% for the former and less than 10% for the latter in South Africa (Palma 2011)", (NPC, 2023).

The top decile of the population is estimated to own between 71% and 95% of the nation's wealth, creating significant wealth disparities. The report also cites structural issues, such as high income inequality, concentration of wealth, and spatial inequities, high unemployment (with youth unemployment around 50%, making it difficult to achieve the employment targets set by the NDP) as major obstacles to achieve SDG 8 by 2030.

On unemployment, the report states: "The current pattern of economic growth will not generate jobs at the required scale to address unemployment and poverty" (NPC, 2023).
Lack of diversification, infrastructure challenges, monopolies and barriers to entry, barriers to small business growth, limited export diversification and low public infrastructure investment are also cited in the report as what compounds the efforts to meet SDG 8 by 2030.

Challenges in Achieving SDG 8 by 2030

South Africa's journey towards achieving SDG 8 faces significant hurdles. Sluggish economic growth, persistent gender wage gaps, high unemployment rates, youth disengagement, and challenges related to transitioning from informal to formal employment all present formidable barriers. To meet the targets set for 2030, the country must implement robust policies and strategies that address these challenges and promote inclusive and sustainable economic growth and decent work for all segments of the population.

4.5. SDG 13: Climate Action

This section is focused on an analysis of South Africa's journey towards achieving the Sustainable Development Goal 13 (SDG 13) targets. This assessment is informed by the available data and trends related to climate change, greenhouse gas emissions, and extreme weather events.

Warming Trends

South Africa has experienced a significant warming trend in recent years, with data showing a concerning rate of 2°C per century. This rate is double the global average and indicates a growing influence of climate change on the country's climate system. The data represented in Figure 32 underscores the urgency of addressing this issue, especially as some regions, notably the arid western areas, exhibit substantial warming trends. Urgent climate action is needed to mitigate these warming effects and their associated impacts.

Extreme Weather Events

South Africa has been witnessing an escalation of extreme weather events, which is a significant concern. Data shows an increase in the number of annual hot days and a decrease in cold nights. These trends highlight the intensification of extreme weather conditions, including heatwaves. Extreme weather events have adverse effects on various sectors, including health, agriculture, and infrastructure. Figure 31 provides a visual representation of annual rainfall trends in different regions, illustrating shifting patterns of rainfall distribution. The increased frequency of extreme daily rainfall events has led to floods in some areas and droughts in others. These phenomena necessitate immediate climate action to address the associated challenges.

The recent floods in South Africa, particularly the catastrophic April 2022 Durban floods, provide compelling data to reinforce the argument of escalating extreme weather events and highlight the inadequacies of the country's approach to SDG 13 (Climate Action). The floods not only had severe consequences but are also indicative of a broader trend.

Historical Flooding Trends

The study by Grab et al. (2023) examined historical flood records in KwaZulu-Natal (KZN), including the greater Durban region. The analysis revealed a substantial increase in the frequency of flooding over time. In the 19th century, an average of approximately 1.1 significant flood events occurred annually, while in the 20th and 21st centuries, this number increased to around 1.7 per year. This data underscores the intensification of extreme weather events, particularly flooding, which aligns with the broader context of escalating extreme weather conditions in South Africa.

April 2022 Floods

The April 2022 Durban floods, as documented by Grab et al. (ibid), were identified as one of the most catastrophic natural disasters in KZN's history. These floods resulted in significant loss of life and extensive damage. The disaster was not only an isolated incident but rather a part of an emerging pattern of extreme weather events. The data from this event provides a clear illustration of the intensification of floods and their devastating impacts, which demand immediate climate action.

Attribution to Climate Change

It's noteworthy that climate change was cited as a contributing factor to the torrential rain and flooding in South Africa's Western Cape in September 2023. This acknowledgment by officials reinforces the connection between climate change and the increased frequency and severity of extreme weather events, such as floods. The recognition of climate change's role in intensifying rainfall and flooding strengthens the argument that addressing SDG 13 is of paramount importance.

Impact on Lives and Infrastructure

The data underlines the substantial impact of these extreme weather events. The April 2022 floods resulted in significant loss of life and a profound economic impact. Similarly, the September 2023 floods in the Western Cape were described as potentially the worst in a century. These events caused loss of life, the evacuation of homes, and significant damage to infrastructure, including roads and bridges. The data emphasizes that extreme weather events have severe consequences, affecting various sectors, including health, agriculture, and infrastructure, as mentioned in the initial context.

In summary, the historical flood data, coupled with recent catastrophic events and climate change attribution, provides compelling evidence of the escalation of extreme weather events in

South Africa. These events underscore the inadequacies in the country's approach to achieving SDG 13 (Climate Action). Immediate and effective climate action is imperative to address the challenges posed by these escalating extreme weather conditions.

Greenhouse Gas Emissions

South Africa's commitment to mitigating climate change is a critical aspect of SDG 13. The country's response includes commitments outlined in the Paris Agreement, intended to limit warming to well below 2 degrees Celsius. South Africa has implemented measures such as a carbon tax to reduce greenhouse gas (GHG) emissions. However, the available data, while extending only to 2015, shows a 23.1% increase in emissions since 2000, with the energy sector being the highest emitter. These statistics suggest that South Africa faces challenges in meeting its emission reduction targets, emphasizing the need for intensified climate action and emissions reduction measures.

Meeting SDG 13 by 2030

South Africa's progress toward SDG 13 is hindered by alarming warming trends, escalating extreme weather events, and increasing greenhouse gas emissions. Despite its commitment to addressing climate change, the available data and trends suggest that achieving the SDG 13 targets by 2030 is a formidable challenge. Urgent and comprehensive climate action is required to mitigate these issues and navigate towards a sustainable, climate-resilient future.

Reassessing South Africa's Climate Change Strategy: A Political-Economic Perspective

This subsection examines South Africa's climate change strategy, providing a political-economic lens to shed light on the nation's approach and underlying challenges. The objective is to highlight the inherent inefficiencies and ideological flaws that may compromise the country's efforts to address climate change, thus jeopardizing the achievement of the Sustainable Development Goal 13 (SDG 13) targets by 2030.

Evaluation of South Africa's Nationally Determined Contributions

South Africa's Nationally Determined Contributions (NDC) reveal a misalignment between the country's climate action and the urgency of the climate crisis. While the South African government asserts that the updated NDC reflects the highest level of ambition based on science and equity (RSA, 2021), it can be argued that the country understates and under-quantifies the severity of the climate change situation. A crucial point is the failure to address South Africa's historical climate debt to the African continent, given its status as the "worst polluter and most industrialized country" in Africa (CER, 2021). These observations underscore the inadequacies of the country's approach in addressing the climate crisis and working towards just transition.

Per Capita Emissions and Historic Climate Debt

Analyzing South Africa's per capita emissions, SAFTU underscores the significant carbon footprint of the country, particularly its elite population. South Africa ranks 14th globally in carbon emissions and is responsible for nearly half of Africa's greenhouse gas emissions, primarily due to its heavy reliance on coal as a primary energy source (SAFTU, 2021). Additionally, the historic climate debt owed by South Africa to the rest of Africa often goes unacknowledged, further complicating the country's climate change strategy. These factors collectively highlight the insufficiency of South Africa's approach to addressing the climate crisis.

A Paradigm Shift in Climate Change Discourse

A fundamental shift in climate change discourse is noted, with the adoption of the Anthropocene-centered narrative, which attributes the climate crisis primarily to human activities. However, scholars such as Satgar (2018) argue that this narrative may inadequately address the root causes of the crisis. Satgar (ibid) suggests a shift towards a "Capitalocene" approach, which emphasizes capitalism's role in driving global warming and climate change. This perspective, also corroborated by Hickel (2020), calls for a collective human-causality view, placing accountability on capitalism for its contributions to the crisis.

The Intersection of Political-Economic Factors

A political-economic analysis of South Africa's climate change approach offers valuable insights into the underlying factors contributing to the country's challenges in addressing climate change. The adoption of a neoclassical macroeconomic framework prioritized supply and demand dynamics while side-lining historical and socio-political factors. The resulting focus on global financial markets led to prioritizing global North capitalism over the interests of South Africa's population.(du Toit et al., 2014)

Rethinking Climate Action

South Africa's approach to climate change appears to misdiagnose the climate problem by subscribing to the Anthropocene-centered narrative, which attributes the crisis primarily to human activities. This misalignment with the realities of capitalism's role in climate change may hinder the country's progress toward SDG 13 targets. A critical re-evaluation of South Africa's climate change strategy is necessary to address the root causes of the crisis, ensure climate justice, and strive for a just transition.

Meeting the 2030 Targets and the Prospects of Just Transition

The Department of Forestry, Fisheries and the Environment has been criticized for underestimating the severity of the carbon emissions problem, leading to a failure to acknowledge the extent to which South Africa must reduce its national carbon emissions. According to the Intergovernmental Panel on Climate Change (IPCC) (n.d.), carbon emissions must be urgently reduced by approximately 45% within the period of 2010-2030, giving the world just over nine years to achieve this goal. The Paris Agreement aims to keep global temperature below 1.5 degrees Celsius, which the Climate Equity Reference Project (CER, 2021) confirms as the tipping point for our climate. Although the updated 2021 Nationally Determined Contributions (NDC) accepted the IPCC's overall target of carbon emission reduction, the NDC proposes that South Africa's fair share range, on a 1.5°C pathway, should be between 286-364 MtCO2, while the proposed target threshold is 398 and 440 Mt CO2e (CER, ibid).

It is evident that the NDC's proposed target is higher than what the IPCC has suggested, indicating a significant gap between the required carbon emission reductions and what is currently planned. As such, it is crucial for the government to take action to reduce the nation's carbon emissions in order to meet the IPCC's recommended target and contribute to the global effort to mitigate climate change.

Figure 34 below presents the analytical comparison of the NDCs range against the fair share of 1.5°C and 2°C global pathways.

	South Africa NDC (2030)	
	official NDC ($MtCO_2eq$)	**draft updated NDC ($MtCO_2eq$)**
	including LULUCF	
NDC range (lower)	398	398
NDC range (upper)	614	440

	Fair Share (2030)	
	1.5°C ($MtCO_2eq$)	**2.0°C ($MtCO_2eq$)**
	excluding LULUCF	
CSO equity range (lower)	286	362
CSO equity range (upper)	364	413
	*including LULUCF **	
CSO equity range (lower)	274	350
CSO equity range (upper)	352	401

Figure 34: South Africa NDC range versus fair share of 1.5°C and 2°C global pathways

Source, (CER,2021)

As per Figure 34 above, (CER, ibid) has calculated the Nationally Determined Contributions (NDC) fair share based on the globally determined lower end fair share of 1.5°C and the upper end 2°C pathway. The analysis shows that the 1.5°C fair share would require about 1½ times as much mitigation effort globally in 2030, equivalent to 31GtCO2eq, while the 2°C fair share would require 21GtCO2eq, below a baseline of 57 GtCO2eq. However, these findings come against the backdrop of the South African government's bold claims that it has developed policies in key sectors on mitigation and adaptation focused on both reaching climate goals and ensuring a just transition in which no one is left behind (RSA, 2021).

Increase In Greenhouse Gas Emissions

On SDG 13, NPC review of the NDP indicates an increase in Greenhouse Gas Emissions Increase. The report reiterates that South Africa ratified the Paris Agreement in 2016, as a commitment to reducing greenhouse gas (GHG) emissions.

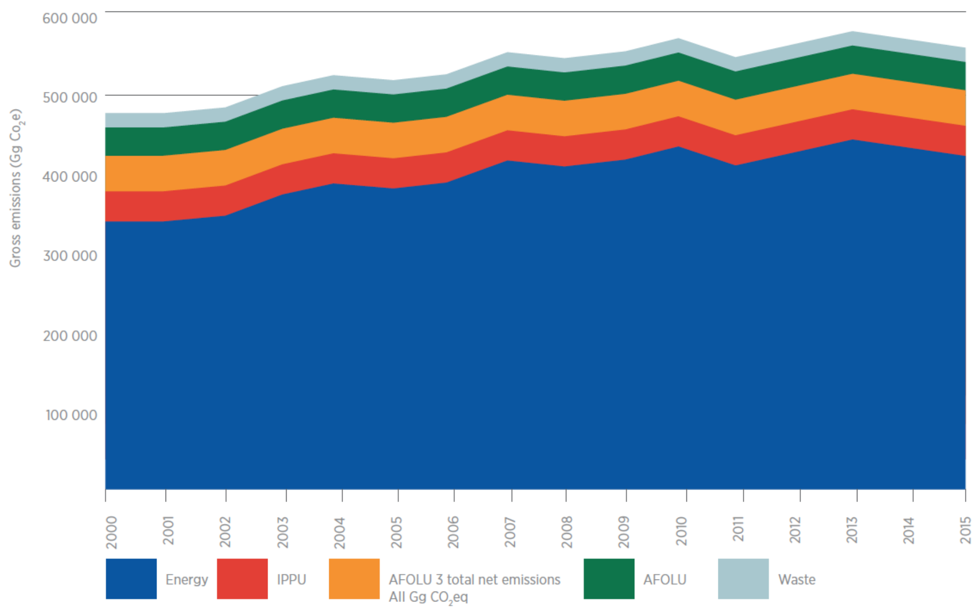

Figure 35: Sectoral Contributions to Gross Emissions Trends in South Africa (2000-2015)

Source, (NPC, 2023)

However, and ironically so, data from the report (Figure 35 above) indicates that GHG emissions have increased across most of the economic sectors since 2000, with a total increase of 23.1%. Data also shows that the energy sector (Eskom) remains the highest emitter of GHGs in South Africa.

Slow Implementation Of Climate Policies

The report also underscores the reality of slow implementation of climate policies. While South Africa implemented a carbon tax from June 2019 with the objective of incentivizing emission reductions, progress in reducing emissions has remained significantly slow.

Additional challenges cited related to land reform, land administration, as well as inadequate incentives for the private sector to sustain sustainable practices. All these collectively hinder progress in mitigating climate change.

Transition to a Low-Carbon Economy

With regards to the envisaged transition to a low carbon economy, the NDP committed to transitioning South Africa to a low-carbon, climate-resilient economy. This would involve diminished reliance on coal dependence, and increasing renewable energy use. The NDP review however indicates that coal continues to play a significant role in South Africa's energy mix while on the other end, progress in adopting renewable energy resources has not reached the desired targets. The report cites several challenges that are stifling the prospects to meet SDG 13 by 2030. These also include a lack of sustainable transportation, challenges in just transition, limited progress in climate adaptation and insufficient renewable energy adoption.

South Africa will not meet the SDGs by 2030

Overall, the NDP review highlights the challenges South Africa faces in achieving the SDG 2030 targets. Limited progress towards NDP goals, threats to social protection, weakening state capacity and unresolved challenges stand out as key hindrances to 2030 SDG targets.

The review indicates that progress made earlier in reducing poverty has not been maintained. According to the review, the effectiveness of social protection and the social wage, which aimed to safeguard numerous vulnerable individuals and communities against poverty, is now facing challenges. Furthermore, the government's capacity to guide and mobilize various stakeholders and society for effective implementation has also diminished (NPC, 2023).

Ultimately, the 2023 NDP review captures an important concession by the South African government. "The country is therefore not on course to achieve the NDP's 2030 targets, given the performance thus far", (NPC, 2023).

Based on the findings presented in this chapter, the next chapter presents a set of recommendations that should be considered in addressing the challenges raised in the context of South Africa's efforts to yield Just Transitions.

CHAPTER 5: RECOMMENDATIONS

Based on insights drawn from the Data Collation and Analysis chapter, in this chapter; the study proceeds to proffer some recommendations to tackle challenges illuminated in data collation and analysis. Recommendations are made with a view to bolster South Africa's quest to mid wife Just Transitions.

5.1. SDG 1: End Poverty

An Environmentally Friendly Increase of GDP Annual Growth Rate

- Recent simulations conducted by Fafona et al (ibid). emphasize the imperative of revisiting South Africa's GDP growth rates. The current GDP growth of 2.0 percent is insufficient for achieving the SDGs related to poverty and hunger. To meet these ambitious goals, it is essential to boost GDP growth from its 2018 level of 2.0 percent to a robust 4.5 percent between 2015 and 2030. This is a significant undertaking, especially in light of South Africa's GDP growth of 1.9 percent in the first quarter of 2022, marking the second consecutive quarter of upward growth (StatsSA, 2022).
- While the recovery of the South African economy to its pre-pandemic levels is a positive development, sustaining this upward trajectory is paramount. To reach the lofty SDG objectives related to hunger and poverty, South Africa must consistently accelerate its GDP growth rate to the 4.5 percent threshold outlined by Fafona et al., (ibid). Achieving this rate of growth entails a concerted effort and is inextricably linked to the pursuit of economic development that addresses these SDGs effectively.

Tackling Inherent Contradictions between SDGs 6,13 and SDG 8

- South Africa must address the inherent contradiction in the SDGs related to SDG 8 where the 3% annual economic growth benchmark leads to the consumption of more resources and carbon emissions as expressed in SDGs 6 and 13. In line with this Hickel (2020) emphasizes that achieving ecological sustainability in a manner that surmounts the contradictions of SGDs emphasis on economic growth and environmental and reducing resource use and CO_2 emissions requires a shift away from the emphasis on aggregate growth and toward strategies that reduce inequality and resource consumption within and between nations. To deal with this it is recommended that South Africa should rethink SDG targets by emphasizing per capita resource use and advocating substantial reductions in high-income nations. Reducing resource use is a practical way to meet climate goals and promote ecological sustainability. Alternative strategies that focus on reducing inequality, both nationally and globally should be considered rather than a parochial pursuit to economic growth. Alternative strategies could be:

- Progressive Taxation
- Social Safety Nets
- Education and Skills Development
- Universal Basic Income (UBI)
- Promote Sustainable Consumption and Production

This approach will curtail the neoliberal assumption that continuous growth is the only path to human development and suggests a more balanced and sustainable approach to achieving the SDGs.

Inequality and Income Distribution

- Simultaneously, addressing acute inequality through income distribution is vital. Fafona et al. (ibid) recommend targeted interventions in specific rural areas to reduce income inequality. These areas include rural Eastern Cape, rural Limpopo, rural Mpumalanga, rural KwaZulu-Natal, and rural Northern Cape. Furthermore, the analysis underscores the importance of skill development programs, particularly in skilled and high-skilled labor markets within these areas. Such programs are well-positioned to contribute significantly to the attainment of SDGs related to poverty and hunger by 2030.

In summary, South Africa's journey to achieving SDG Goal 1 necessitates a substantial and environmentally sustainable increase in GDP growth, demanding a concerted effort and greater investments in key areas, while simultaneously addressing income inequality through policy interventions that ensure that everyone have access to the deliverables and benefits of SDG 1.

5.2. SDG 6: Clean Water and Sanitation

Equity-Centric Policies

- South Africa must revisit and revise its water and sanitation policies with the objective of addressing historical injustices and imbalances. Water and sanitation policies must be undergirded by an equity-centered approach that prioritizes marginalized communities in service delivery (Zindi et al., 2022).

Targeted Investments

- To ensure equitable access to water and sanitation services, the government should allocate resources in the form of targeted investments to historically marginalized and underserved areas to alleviate water and sanitation service delivery imbalances. Access to clean water and sanitation must be the overarching fundamental right to guide equitable water and sanitation policies and strategies.

Community Empowerment and Engagement

- A robust approach to solving water and sanitation service disparities requires concerted efforts from all stakeholders, including the substantive voice of communities, particularly those in marginalized locations. Active citizenry as well as empowered communities will generally be predisposed to demand their rights and to hold authorities accountable (Zindi et al., 2022). This will likely lead to improved water and sanitation services and yield accountability from positions of authority.

Education and Awareness

- Government, civil society, and all voices of society must organize awareness campaigns aimed at educating the masses with regards to clean water and sanitation rights. An informed and enlightened citizenry will keep the government in check and ensure that any policies for water and sanitation service delivery are buttressed in the quest to redress historical imbalances and equity.

Implementing Affirmative Action for Equitable Water Access in South Africa:

- South Africa should consider incorporating affirmative action measures in water and sanitation policy implementations and interventions. This includes amending water laws to provide explicit affirmative water and sanitation services principles and mechanisms (Jegede et al., 2021).

Fiscal Reforms and Equitable Resource Allocation:

- Fiscal reforms are required to ensure proportional distribution of water services. Government should incentivize industries for implementing water-saving mechanisms, practices, and technologies (Zindi et al., 2022).

Policy Coherence and Integration

- Policy coherence and integration is required across all government spheres as well as across all relevant stakeholders. Government must promote intersectoral coordination across various water and sanitation policies in the context of broader developmental agendas, including poverty reduction and environmental sustainability.

Dealing with Water Stress Challenges

- Formulate and implement sustainable water management practices, including water conservation, water recycling, and efficient irrigation techniques. This must be complemented by significant investment in water infrastructure.

Embrace Public-Private Partnerships

- Expeditiously leverage Public-Private Partnerships (PPPs) to accelerate the transformation of South Africa's water and sanitation sector. This entails innovative partnerships with the private sector, research and development bodies, and entrepreneurs to leverage expertise and resources needed to address water challenges.

PPPs must be structured in a fashion that benefits the states and broader society at large, as opposed to the typical approach to PPPs that entrenches and benefits private interest.

Expedite the Establishment of the Independent Water Regulator (IWR)

- The government must expedite the establishment of the Independent Water Regulator (IWR) to facilitate expansive community participation, enhance regulatory oversight, and foster synergistic collaborations among relevant stakeholders. Coupled with this is the need for the government to collaborate strategically across stakeholders to channel funding toward water resources and supply infrastructure, especially for informal settlements, to alleviate water stress challenges.

Policy Framework on Water and Sanitation

- Ensure alignment with HRBA principles and the Constitution, and address historical imbalances and disparities in water and sanitation services. These recommendations encompass a holistic and inclusive approach to advancing SDG 6 in South Africa, aiming to redress disparities, improve water and sanitation services, empower communities, and ensure equitable access to clean water while promoting sustainability and equity.

5.3. SDG 7: Affordable and Clean Energy

Diversify Stakeholder Engagement

- South Africa must adopt a more inclusive approach by diversifying stakeholder engagement in energy policy formulation and implementation. This approach should involve civil society, renewable energy industries, environmental groups, and broader society. Inclusivity will help balance the influence of dominant interests (Mugambiwa, 2023).

Move Towards A Decentralized Energy Mix

- To make significant progress in SDG 7, South Africa should transition from a predominantly coal-based national grid to decentralized energy production through renewable energy-based microgrids. While considering this shift, it's crucial to safeguard against undue privatization of a public good (Mugambiwa, 2023).

Policy Transparency

- Enhancing transparency in energy policymaking is essential to meet SDG 7. This includes full disclosure of any connections between policymakers and fossil fuel industries to address conflicts of interest and enhance accountability.

Accountability and Participation

- Embracing the principles of Human Rights-Based Approach (HRBA), accountability, and participation should be integrated into South Africa's energy policies. To achieve this, the government needs to establish standardized rules and regulations for small-scale renewables and expedite government initiatives, ensuring that marginalized communities participate substantively in energy policy discussions, formulation, and implementation.

Targeted Rural Electrification

- Prioritizing and accelerating targeted electrification efforts in rural and marginalized areas is essential to bridge the rural-urban energy divide. This approach ensures that the energy rights of the population, especially vulnerable communities, are upheld (Mugambiwa, 2023).

These streamlined recommendations encompass a comprehensive and balanced strategy for achieving SDG 7, focusing on diversifying stakeholder engagement, transitioning to renewable energy, ensuring policy transparency, fostering accountability and participation, and prioritizing rural electrification.

5.4. SDG 8: Decent Work And Economic Growth

South Africa requires a comprehensive and rights-based approach to tackle the multifaceted challenges that hinder South Africa's progress toward meeting SDG 8 by 2030.

Supporting SMEs

- South Africa must prioritize supporting small and medium-sized enterprises (SMEs) as a key strategy to advance economic growth and create decent work opportunities. These businesses form a crucial part of the economy, but many face challenges in scaling up. Appropriate tailored support networks are needed to guide them through operational hurdles, provide insights on strategic decision-making, and offer advice on legal and financial matters (Judge, 2020).

Fostering People-centred Private-Public Partnerships

- To address the issues hampering progress towards SDG 8, South Africa should actively encourage private-public partnerships that focus on boosting SME growth. Collaborations between the government and private sector can play a significant role in expanding these businesses. Such partnerships are essential in creating more employment opportunities that align with the SDG's goal of decent work and economic growth (Judge, 2020).

Youth Employment Programs

- South Africa must consider the implementation of youth employment programs, similar to the Youth Employment Services (YES) initiative. These programs connect skilled young workers with businesses that require their expertise. By facilitating the employment of young individuals, South Africa can address both youth unemployment and the overarching aim of creating decent work opportunities for all (Judge, 2020).

Research and Data Sharing

- To encourage businesses to actively participate in promoting SDG 8, South Africa should undertake research initiatives that provide companies with concrete statistics. These statistics should illustrate how contributing to SDG 8 can benefit businesses, emphasizing the monetary impact, increased productivity, and the overall output of workers. This data-driven approach can inspire businesses to align themselves with the SDG's objectives (Judge, 2020).

Reorient Economic Policies and Foster Job Creation

- South Africa must critically assess economic policies with a view to ensure that the interests of the local working class are prioritized over global capital. It would be helpful for the country to center all its policy frameworks in fundamental human rights and the provisions of the constitution that bind the government to meet the social and economic rights of all citizens. The government must be intentional and forceful in meeting the citizen’s right to work, social security as well as adequate standard of living.

Promote Inclusive Growth

- South Africa must consider diversifying the economy with the objective of reducing over dependence on a few sectors and opening up the accumulation regime for broader-based economic growth and job creation. A big part of this can be achieved through investing in sectors that have an exponential potential to generate sustainable jobs. More focus could be put in green industries and technology-driven sectors.

Enhance Education and Skills Development

- To address structural inequalities in education the government can provide quality education and vocational training opportunities to the economically active proportion of the population - and particularly the youths. The government can also tailor education and training programs such that these align with the demands of emerging industries and the Fourth Industrial Revolution (4iR).

Combating Gender Equality and Wage Equity

- To combat the perpetual gender wage gap South Africa can implement policies and initiatives that bridge gender wage divide and ensure equal pay for equal work. This can be achieved through fostering women's participation in leadership roles and key decision-making functions within both the public and private sectors of the economy. South Africa must prioritize not only productive employment and decent work but also recognize the importance of valuing and reducing the burden of unpaid care and domestic work, particularly focusing on women. Rai et al. (2019) concur that achieving gender equality in the realm of social reproductive work is essential for fulfilling the goals of SDG 8. This can be achieved by implementing policies and initiatives that redistribute and recognize the value of such work, ultimately contributing to inclusive, sustainable, and decent work for all.

Enforce Anti-Discrimination Measures

- The government can also take a more decisive approach and enforce anti-discrimination measures in the workplace. These should be aimed at combating workplace discrimination, harassment, and unequal treatment which is based on gender, race, or other factors. It would be also crucial to run campaigns that raise awareness about workers' rights and educate people about the avenues for reporting discrimination and recourse.

Empower Labor Movements

- For South Africa to achieve success on the SDG 8. It will be helpful for South Africa to consolidate the efforts of all key stakeholders. Government should affirm the important role of labor movements and workers' rights in shaping labor market dynamics and in asserting the social and economic rights of workers. Government can put measures to bolster the leverage labour movements have in collective bargaining to protect workers' rights and negotiate fair working conditions and wages.

Formalization of Informal Employment

- To bolster efforts towards protecting the right to decent work for all, South Africa must develop policies to protect the rights of informal workers. This should include access to social protection and safe working conditions for this category of workers. South Africa should prioritize the informal sector as a crucial element of any comprehensive plan to combat unemployment and poverty. The informal economy, which includes traders like spaza shops, sidewalk hawkers, and street vendors, significantly contributes to job creation and economic opportunities, particularly for marginalized and vulnerable groups. Statistics from StatsSA (2020) demonstrate the importance of the informal sector in reducing poverty and generating income.

To harness its full potential, policymakers should focus on empowering and supporting the informal sector, acknowledging its role in providing sustainable livelihoods and enhancing the economic capacity of the country. By doing so, South Africa can work toward achieving the goals of reducing unemployment and poverty, especially for those who rely on the informal sector for their livelihoods. A policy approach that recognizes and supports the informal sector will be instrumental in strengthening the economy and improving the delivery of social services to vulnerable populations (Thwala, 2022).

Most importantly, the government must be proactive in facilitating the all critical transition from informal to formal employment. This can be accelerated and enabled by incentivising the transition through training and financial support, and various forms of incentives.

Addressing the challenges in achieving SDG 8, which encompasses the promotion of decent work and economic growth, requires a multi-faceted approach. South Africa should actively engage in supporting SMEs, promoting private-public partnerships, launching youth employment programs, and providing research-backed data to businesses. The involvement of various stakeholders, including the government, businesses, and workers, is essential in advancing these efforts toward achieving decent work and fostering economic growth (Judge, 2020).

5.5. SDG 13: Climate Action

Ideological Shift

- To address these challenges related to Capitalism's inherent drive to accumulate wealth in a manner that contributes to resource depletion, pollution, and human suffering effectively, it is vital for South Africa to shift towards socialist solutions. However, such a shift must not attempt to reform capitalism from within, as the system inherently opposes such transformation. Instead, the focus should be on understanding how capitalism operates and how it can be replaced by more sustainable systems (Empson, 2021).

  An alternative approach involves adopting a decolonial stance, breaking free from the hegemonic narrative of the Anthropocene from the global north. This approach should integrate concepts such as the Universal Basic Income Award (UBIG) and indigenous knowledge systems like Ubuntu. The UBIG, based on the principle of providing everyone with a decent life outside of work, has the potential to challenge core tenets of capitalist ideology, as noted by Marais (ed. Satgar, 2018). This aligns with eco-socialist and democratic socialist principles, as advocated by organizations like the South African Federation of Trade Unions (SAFTU). SAFTU emphasizes worker-controlled, democratic social ownership of essential production and subsistence means, representing a critical step towards a low-carbon economy (SAFTU, 2021).

The Role of Law and Political Economy

- Addressing the conflict between human rights and neoliberal economic theory is essential. While South Africa boasts a progressive constitution and a vibrant human rights community, it has neglected to incorporate rights in economic policymaking (Corkery et al., 2022). To bridge this gap, an interdisciplinary approach, particularly in law and political economy, can be instrumental in advancing economic justice within the human rights framework. Such collaboration can help challenge the dominance of neoliberal economic assumptions and integrate human rights more effectively into economic policies (Corkery et al., 2022).

Focus on Local Sustainability

- Local-level progress towards SDGs is indispensable in understanding the overall national achievement. Local assessments shed light on issues often overlooked in national assessments, providing insights that demand immediate attention. South Africa must adopt a more localized approach to measuring and monitoring SDG progress, emphasizing strategy, implementation, and evaluation at the grassroots level where development occurs. Such a higher-resolution assessment at the local level can help highlight areas requiring intervention and facilitate the sharing of best practices and experiences (Wernecke et al., 2018).

Tracking Progress at Multiple Levels

- The stark disparities in SDG progress between national and local levels, as evident in the case of Giyani villages, necessitate tracking data at both macro and micro levels. Monitoring progress at both scales enables the identification of specific areas requiring interventions at the local level to ensure the SDGs are achieved comprehensively (Wernecke et al., 2021).

Priorities for Effective SDG Implementation

- To effectively implement the Sustainable Development Goals, South Africa must address several priorities:

1. Devise Metrics: Scientists, social scientists, and economists should create indices to monitor progress toward each SDG. These indices should cover various aspects, including energy efficiency, carbon savings, income inequality, carbon emissions, and population health.

2. Establish Monitoring Mechanisms: Governments and researchers must develop methods for collecting data and determining the parameters to be tracked. This includes gathering data on energy and water usage, emissions, health effects, and social factors.

3. Evaluate Progress: Social scientists and scientists should contribute to the selection of criteria for measuring progress against the SDGs. This evaluation should consider principles like social equality and cost-effectiveness.

4. Enhance Infrastructure: Improving data collection and processing capabilities, including earth observation and ground-based monitoring, is essential for better global coverage and data sharing.

5. Standardize and Verify Data: Developing uniform techniques and instrumentation for data collection is necessary to prevent the gathering of inaccurate or unreliable information (Lu et al., 2015).

By addressing these interconnected priorities, South Africa can make significant strides in achieving the SDGs and ensuring sustainable development for all its citizens. The following chapter presents concluding remarks for the study.

CONCLUSIONS

Coupled with the critical findings and insights outlined in the 4th Chapter on data collation and analysis, recommendations outlined in Chapter 5 pave the way for concluding remarks on the prospects and challenges South Africa faces in its approach to Just Transitions. The section below presents concluding remarks categorised per each SDG deployed in the study.

South Africa's Elusive Goal to End Poverty by 2030

Under a Business as Usual (BaU) scenario, poverty headcount percentages are projected to rise, and hunger will persist. Against such a backdrop, to achieve SDG targets, South Africa must address income inequality, expand social assistance, and foster sustained development. These efforts must be guided by the awareness that income growth alone, without equitable wealth distribution, cannot eliminate poverty.

Re-evaluating Poverty and Inequality

As South Africa's high poverty levels contrast with its per capita GDP, income growth alone will not suffice in alleviating poverty and inequality. Given the country's extreme inequality, special measures are essential, including policy reforms, to create a more equitable society.

The Imperative of Granular Data

For South Africa to expedite the just transition toward sustainability, accurate, granular data at both national and local levels is essential and of critical importance. National aggregates can obscure the reality experienced by local communities. Informed initiatives and interventions require data-driven precision.

South Africa's Challenge to Meet SDG 6

South Africa's existing policies and interventions may fall short of delivering equitable clean water and sanitation to all citizens by 2030. The country needs to re-evaluate its policy framework, emphasizing human rights-based approaches (HRBA) that treat water and sanitation as fundamental rights. HRBA principles, such as participation, accountability, transparency, and non-discrimination, can drive a transformative agenda to overcome historical inequalities.

Affordable and Clean Energy

While South Africa has made progress in its energy landscape, ensuring universal electrification remains a significant challenge. Meeting SDG 7 by 2030 demands a radical approach, concerted efforts, and stakeholder engagement. Access to energy is a fundamental human right, and only by centering policies on sustainability, accountability, and equity can South Africa hope to realize this goal.

Decent Work and Economic Growth

South Africa's journey toward SDG 8 by 2030 is fraught with complexities tied to power dynamics, historical inequalities, and global pressures. Inclusive economic growth, empowerment of labor movements, gender equality, and combating child labor are critical. Prioritizing human rights protection and fulfillment grounded in justice, equity, and inclusivity is essential for a just transition or Just Transitions.

Rethinking the Foundations of Climate Action

South Africa's ability to meet SDG 13 by 2030, focused on climate action, faces substantial challenges. The country's emphasis on economic growth, particularly in carbon-intensive industries, conflicts with the imperative to reduce carbon emissions. Transitioning to cleaner energy sources is hindered by the dominance of coal, and pervasive social and economic inequality complicates climate action. Inadequate policy implementation, fiscal constraints, and global factors further impede progress. Climate adaptation and resilience-building efforts fall behind, and the likelihood of achieving SDG 13's objectives within the given timeframe is increasingly uncertain.

South Africa's pursuit of SDG 13 requires a fundamental shift in policy, industry, and societal commitment to a more sustainable, climate-resilient future, given the complex and interrelated challenges it currently faces.

Overall, for South Africa to effectively address socio-economic challenges, it must interrogate the market-oriented capitalist paradigms that perpetuate these ills. Sustainable development requires a deeper examination of the root causes of poverty, inequality, and unemployment. To confront capitalism's pervasive influence and achieve climate action goals, South Africa must acknowledge these underlying drivers of the multifaceted challenges that hinder sustainability. Embracing holistic, human-rights-based approaches is crucial for charting possible pathways for transformative change.

To realize the ambitious aspirations of the SDGs and make progress towards a just and equitable future, South Africa stands at a crossroads in the realm of policy: the choice between resolving the crisis of unsustainability decisively or merely addressing the symptoms of the crisis with stop-gap measures that at best, circumvent the root hindrances to sustainability, and at worst, entrench and perpetuate unsustainability.

Limitations of Study

Methodological Limitations: The study relied on secondary data and literature review, which are limited methods for capturing the complexity of the issues in relation to the research objectives.

Measurement Limitations: The study deployed a framework of selected SDGs to measure South Africa's progress towards achieving Just Transition. This may not fully capture comprehensively the nuances and intricacies of social and environmental justice, inter alia.

Scoping Limitations: The study relied largely on national-level data, policies, frameworks, and reports. This may dim the light on important subnational realities and dynamics.

Temporal Limitations: The timeframe of the study may not account for recent developments or possible future changes in South Africa's trajectory towards Just Transition.

Suggested Areas of Further Study

Ideology and Discourse: It would be useful to explore how neoliberal ideology has elaborately framed public discourse and sentiments in sustainability discourse and debates on environment, sustainability, and development in South Africa. Such a study may help unlock counter-narratives that foster transformative change.

Environmental Governance: A study on the impact of neoliberalism on environmental governance and policy-making will be useful in anatomizing how such an approach commodifies nature and prioritizes economic growth over ecological well-being and sustainability.

Role of Institutions and Financialization: A study that calibrates the role of financial institutions will be useful in spotlighting the role that such players play in perpetuating neoliberalism and unsustainability in South Africa through various trade instruments and agreements.

Assessing Just Transition Progress: A study that develops a robust and context-specific analysis of progress towards the goals and objectives of Just Transition, beyond the scope of SDGs, would unlock critical and granular, content-bound insights.

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DECLARATION

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