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Review Article

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A Literature Review of Laws, Frameworks, and Policies of Sustainability: A National Perspective

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Abstract

The purpose of this article is to review the laws, frameworks, and policies at a global and national that influences and directs sustainability strategies, programmes and plans.

The secondary data analysis of sustainability laws, frameworks and policies from primary studies can be used to understand current issues in new and novels ways. Search engines like Google Scholar and library databases was used to find studies whose titles or abstracts contained terms like "sustainability laws," "sustainability codes," "sustainability regulations," "sustainability legislation" and "sustainability framework". The sample was selected based on the countries that have aligned to the Sustainable Development Goals. The data will be analysed using thematic analysis to identify themes and sub-themes.

This literature review reveals the intertwined nature of global, regional, and national laws on sustainability in South Africa. Key findings highlight that global agreements, like the Paris Agreement, set important guidelines, while regional initiatives address specific local needs. At the national level, South Africa's Constitution and environmental laws illustrate a strong commitment to sustainability, emphasizing the need for integrated and coordinated legal approaches to tackle complex sustainability challenges effectively.

1. Introduction

In an era defined by pressing global challenges such as climate change, inequality, and resource depletion, the quest for sustainability has never been more urgent [1]. The Sustainable Development Goals (SDGs), established in 2016, provide a comprehensive framework that addresses the interconnected social, economic, and environmental dimensions of sustainable development. As articulated in Loewe and Rippin's (2015) The Future We Want Report, these goals are intended to guide all countries, regardless of their unique contextual issues, development levels, and capacity to implement national policies. However, the path toward achieving these ambitious targets is fraught with complexity.

Reflecting on the previous iteration of international development goals, the Millennium Development Goals (MDGs), it became clear by 2010 that progress was not uniform across nations. Although some strides were made such as halving the number of people living in poverty and improving access to safe drinking water significant disparities persisted. As reported by Slack (2014) and others, over a billion people remained in poverty, and many still lacked essential services like sanitation. These challenges underscore the necessity for integrated approaches to governance and policy, compelling national and local governments, as well as diverse stakeholders, to rethink their strategies for sustainable development.

As countries align with the Post-2015 Development Agenda and the broader imperatives of Agenda 2030 (Slack, 2014), it becomes crucial to explore the existing legal landscapes that support this transition. This literature review aims to map the complex web of global, regional, and national laws, acts, and codes that shape sustainability efforts. By analyzing these frameworks, we seek to uncover the intricate relationships between them and identify opportunities for enhanced coordination and integration to drive meaningful progress toward sustainability.

2. Global Sustainability Laws: Policies and Codes of Good Practice

2.1 Malthusianism

Approximately 200 years ago, demographer and political economist, Thomas Robert Malthus (1766 – 1834) indicated that

the growth of the world population would surpass food production with the consequence of starvation or survival on a minimum level of subsistence. With improved farming practices, advancements in agricultural sciences, and new farming tools, the advancements and advent of technology negated the principal of population theory [2].

The next wave of Malthusianism was the book on the Limits to Growth proposed that population and industrial capital will grow exponentially and evoke increased demand for food and non-renewable resources [3]. The central tenant of this model was that there will be a 1992 collapse and the consequence will be the depletion of non-renewable resources.

The supply of both food and non-renewable resources was assumed to be fixed. Not surprisingly given the assumptions, the model predicted collapse due to non-renewable resource depletion. As time ticked on, none of the predictions of the Club of Rome was realised for the next 30 years for the period 1973 -2003. In 1992, the UN Conference on the Environment and Development (UNCED) was held in Rio de Janeiro, Brazil, with 114 heads of state, including 10,000 representatives from 178 countries and 1400 non-governmental organisations in attendance at the Rio Earth Summit [4]. The key outputs of the Conference were the

2.2 Rio Declaration, Agenda 21, and the Commission on Sustainable Development.

The commitment of leaders culminated in Agenda 21 which is a 500-page collection of agreed healthy practices and advice to achieve sustainable development in almost any area on the surface of the earth. Agenda 21 activities covered environmental and development themes: quality of life, efficient use of natural resources, management of human settlements, and sustainable economic growth. The UNCED developed a national sustainable development strategy and provided principles and guidance in implementing sustainable development.

2.3 Kyoto Conference

In the 1997 Kyoto Conference on climate change, at which developed countries agreed on specific targets and a framework for reducing their emissions of greenhouse gases. Industrialised countries committed to an overall 5.2% reduction of emissions of greenhouse gases for the period 2008–2012. Although 84 countries signed the Protocol, indicating their intent to ratify it, many others were reluctant to take even this step. Unfortunately, the USA has refused to ratify the Kyoto Protocol. Post the Kyoto Protocol the CO2 emissions for the US increased by 50% compared to the EU of 18% [5]. A total of 192 countries signed the Kyoto Protocol.

2.4 Millennium Development Goals

In September 2000, in New York, world leaders agreed on the Millennium Development Goals to be achieved by the year 2015 as a timeframe. The first goal was to halve the proportion of people living on less than a dollar a day and suffering from hunger. Secondly, the objective was to ensure universal primary education and the promotion of gender quality. The third objective was to reduce child mortality and the improvement of maternal health. The fourth objective was to reverse the scourge of HIV/AIDS. The fifth objective was to integrate the principles of sustainable development into country policies. The sixth objective was to reduce by half the proportion of people without access to safe drinking water [6].

2.5 World Summit on Sustainable Development (WSSD)

At the World Summit on Sustainable Development (WSSD) that was held in Johannesburg in 2002, partnerships were forged between the United Nations, governments, NGOs, and businesses to address health and poverty challenges. In addition to confirming the Millennium goals, other complementary goals were set to halve the proportion of people that lack access to basic sanitation; minimising harmful effects from chemicals; and halt the loss of biodiversity. Some critics praised the growth of the economy and the quality of the surroundings [7].

South Africa is a signatory to various international treaties and frameworks, including the Paris Agreement on climate change and the Sustainable Development Goals (SDGs). These commitments necessitate domestic policy alignment with global sustainability trends and aims.

2.6 Sustainable Development Goals

All 193 UN member nations approved the Sustainable Development Goals (SDGs) in 2015 as a guide for long-term planning for economic, environmental, and social welfare [8]. The success of meeting targets is integrally linked to the interconnected challenges of sustainable goals and requires transformative change [9]. In order to establish an inclusive, equitable, and sustainable business climate, one must also have a thorough grasp of the ups and downs of the economy, as well as the nature and workings of society [10].

According to national governments are committed to the goals but sub-national governments in partnership with other stakeholders would have to implement the goals to achieve the targets [11]. Furthermore, Cities across the globe would learn and adopt best practices to integrate SDG into planning, identify implementation gaps, understand local needs, and provide leadership to achieve sustainable goals.

Goal 1:	End poverty in all its forms everywhere.
Goal 2:	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.
Goal 3:	Ensure healthy lives and promote well-being for all at all ages.
Goal 4:	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
Goal 5:	Achieve gender equality and empower all women and girls.
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 8:	Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.
Goal 9:	Build resilient infrastructure, promote inclusive and sustainable industrialisation, and foster innovation.
Goal 10:	Reduce inequality within and among countries.
Goal 11:	Make cities and human settlements inclusive, safe, resilient, and sustainable.
Goal 12:	Ensure sustainable consumption and production patterns.
Goal 13:	Take urgent action to combat climate change and its impacts.
Goal 14:	Conserve and sustainability use the oceans, seas, and marine resources for sustainable development.
Goal 15:	Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainability manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity loss.
Goal 16:	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels.
Goal 17:	Strengthen the means of implementation and revitalise the global partnership for sustainable development.
Source: Kroll, Warchold, and Pradhan [12].	

Table 1.1: Sustainable Development Goals

3.Regional Laws, Policies and Codes of Good Practice

The African Union Vision 2063 and the SADC Treaty were signed with the objective of ensuring the effective utilisation of natural resources and the protection of the environment. "The African Union Vision 2063 is to preserve the ecosystems, environment, and climate to create and generate resilient communities and economies.

Goals	**Explanation**
1	Address poverty
2	Sustainable agriculture and food security
3	Comprehensive health services
4	Quality education
5	Gender equality and empowerment of women and vulnerable persons
6	Social inclusion, protection, employment and security
7	Economic growth, infrastructure development, industrialisation; energy resilient cities
8	Environmental protection
9	Desertification and land degradation
10	Innovation and technology development
11	Global and regional partnerships for development
12	Good governance
Source: United Nations Economic Commission for Africa [1].	

Table 1.2: Regional Sustainable Development Goals

Linked to the regional sustainable development goals, sustainable indicators were developed to guide the sustainability practices in Africa as identified herein below. In addition, institutions were also encouraged to foster collaboration.

3.1 Africa Agenda 2063

Africa's Agenda 2063 offers a comprehensive vision for a sustainable, inclusive, and resilient continent. This strategic framework aims to align local initiatives with broader goals of environmental sustainability, economic inclusivity, integrated infrastructure development, and technological advancement. It emphasizes the sustainable management of Africa's abundant natural resources in the face of climate change, advocating for job creation and poverty alleviation through equitable, sustainable practices [13].

A central tenet of Agenda 2063 is its call for resilient infrastructure that not only supports sustainable growth but also fosters innovation in green technologies—essential for effectively tackling climate challenges. This focus on resilient infrastructure is critical, as highlighted by who analyse the importance of innovative approaches to building infrastructure that withstands environmental stresses [14]. By prioritizing initiatives that enhance climate resilience, the agenda seeks to create a sustainable environment conducive to economic development and social well-being [15].

Furthermore, Agenda 2063 aligns with the United Nations' Sustainable Development Goals (SDGs), reinforcing the importance of collaborative efforts among governments, the private sector, and civil society in driving sustainable progress across the continent [16]. In summary, Africa's Agenda 2063 is not just an aspirational framework; it serves as a critical roadmap for advancing sustainable development while addressing pressing environmental challenges, thus positioning Africa as a leading player in the global pursuit of sustainability.

3.2 Sustainable Development Indicators for Africa

Sustainable Development Indicators (SDIs) for Africa serve as critical tools for measuring progress towards achieving sustainability goals across the continent. By providing a framework to assess environmental, social, and economic dimensions, these indicators help policymakers, researchers, and stakeholders track the effectiveness of development initiatives and inform evidence-based decision-making. As Africa faces unique challenges such as climate change, rapid urbanisation, and resource scarcity, robust indicators are essential for guiding sustainable practices and promoting resilience in diverse communities [17]. Ultimately, SDIs empower nations to align with global sustainability commitments while catering to local contexts, fostering a more sustainable future for the continent [18].

Economic	Social	Environment	Institutional
• GDP composition and growth • GDP per capita • Agricultural Production • Exports • Savings and investments • Foreign direct investment • ODA • External debt • Balance of payments • Terms of trade • Education Expenditure • Health expenditure • Roads • ICT • Unemployment • Inflation Rate	• Poverty level • Income distribution • Access to sanitation • Access to water • Population growth • Fertility • Child mortality • Maternal mortality • HIV\AIDS • Malaria and TB • Education • Literacy	• Land • Energy • Water • Carbon emissions • Deforestation • Soil degradation	• Number of parties to following conventions • Basel • CBD • UNFCCC • UNCCD • POPs • Sustainable development strategies
Source: United Nations Economic Commission for Africa [1].			

Table 1.3: Sustainable Development Indicators for Africa

In conclusion, Africa Agenda 2063 represents a transformative vision for the continent, aiming to drive inclusive growth and sustainable development through shared prosperity and unity. The integration of Sustainable Development Indicators (SDIs) is pivotal to achieving this agenda, providing measurable frameworks that guide African nations in their pursuit of social, economic, and environmental objectives. By utilising SDIs to monitor progress, identify challenges, and implement targeted interventions, countries can enhance their resilience against emerging threats such as climate change and inequality. Ultimately, the synergy between Africa Agenda 2063 and effective SDIs is essential for fostering sustainable development that not only meets the needs of the present generation but also empowers future generations to thrive in a sustainable and equitable environment.

4. The National Perspective

South Africa, endowed with rich natural resources and a diverse socioeconomic landscape, has made significant strides in its journey towards achieving sustainability. The country faces a myriad of challenges, including high levels of inequality, unemployment, and the impacts of climate change, which necessitate a comprehensive and multifaceted approach to sustainable development. South

Africa's commitment to sustainability is reflected in its adherence to various international frameworks, including the United Nations Sustainable Development Goals (SDGs) and the Africa Agenda 2063, as well as its national priorities. In terms of sustainability ratings, South Africa's performance has been mixed.

According to the Global Sustainability Index (2021), South Africa ranks 129th out of 180 countries, signifying considerable room for improvement but also acknowledging the initiatives in place aimed at fostering sustainability [19]. This ranking underscores the importance of effective governance, legislation, and policies that are essential for achieving sustainability goals.

South Africa has implemented several codes, laws, and policies that contribute to its sustainability objectives. The Constitution of the Republic of South Africa (1996) enshrines the right to an environment that is not harmful to health or well-being, establishing a legal framework for environmental protection. The National Development Plan (NDP) 2030 emphasises the need for sustainable economic growth, social inclusion, and environmental integrity. Additionally, the National Climate Change Adaptation Strategy and the Integrated Resource Plan for Electricity seek to address the pressing challenges associated with climate change and energy sustainability [20,21].

These frameworks facilitate the alignment of national and local initiatives with global sustainability efforts and provide the necessary guidelines for businesses and communities to adopt sustainable practices. Furthermore, initiatives such as the Sustainability Reporting Framework encourage transparency and accountability among corporations, fostering a culture of sustainability within the private sector [22]. By critically assessing South Africa's progress towards sustainability, considering its rating and the effectiveness of relevant laws and policies, a clearer picture emerges of both the achievements and the challenges that lie ahead. Sustainable development in South Africa is not just a regulatory obligation but a necessity for ensuring a secure, equitable, and prosperous future.

4.1 Policy Frameworks

The National Development Plan (NDP) and Integrated Development Plans (IDPs) in South Africa are essential frameworks that embed sustainability into national and local governance.

4.1.1 South African Constitution

Section 24 of the South African Constitution explicitly mandates the protection of the environment, underscoring the country's commitment to sustainability by stipulating that legislative and other measures must be implemented to ensure ecologically sustainable development and the responsible use of natural resources [23]. This legal framework is crucial in balancing environmental integrity with economic growth and social equity, as it emphasizes the importance of promoting justifiable economic and social development not only for the present generation but also for future generations.

By integrating environmental stewardship into the core of development policies, Section 24 advocates for a holistic approach to sustainability, where the health of the ecosystem is preserved, communities thrive, and the economy flourishes. This confluence of environmental protection, economic viability, and social justice serves as a foundational principle for creating a resilient society that can meet the needs of all its constituents while safeguarding the planet for posterity.

4.1.2 National Development Plan

The NDP 2030 emphasises the importance of sustainability in enhancing the quality of life and empowering citizens. It aims to eliminate poverty and reduce inequality through sustainable economic growth and job creation. The NDP outlines a vision for sustainable economic growth, social equity, and environmental stewardship, emphasising job creation, poverty alleviation, and the responsible management of natural resources. It advocates for the transition to renewable energy and aims to protect ecosystems while addressing climate change, ensuring that economic development is inclusive and equitable. On a local level, IDPs translate these principles into actionable strategies, promoting local economic development, environmental management, and community engagement to address sustainability challenges effectively.

4.1.3 Integrated Development Plan

These are strategic plans developed by municipalities to promote local sustainable development. They ensure community participation and local alignment with national sustainability goals. Research has demonstrated the alignment of IDPs with the sustainable development goals (SDGs) and their critical role in fostering sustainable practices at the municipal level. For instance, a study by explores how IDPs can enhance local sustainability initiatives while assess the effectiveness of IDPs in promoting economic and environmental sustainability [24,25]. Further, the Department of Planning, Monitoring and provides annual reports analysing the implementation progress of the NDP, illustrating its impact on local governments' sustainability agendas [26]. These sources highlight the ongoing commitment in South Africa to create a cohesive framework that integrates sustainability into all levels of development planning.

4.1.4 Climate Change

Climate change poses significant challenges worldwide, particularly in developing regions like South Africa. In Gauteng, the country's economic hub, a proactive approach to sustainable development is necessary to mitigate the adverse impacts of climate change while promoting socioeconomic growth. The Gauteng Development Strategy 2040 (GDS 2040) and the Africa Agenda 2063 are two critical frameworks that guide sustainability efforts in the region and continent, respectively. This analysis explores how climate change and these strategic frameworks are intertwined in advancing sustainability.

Climate change poses significant challenges to urban development and governance, particularly in regions like Gauteng which is the most industrialised province in South Africa. The Gauteng

Development Strategy 2040 (GDS 2040) and the Africa Agenda 2063 provide critical frameworks for addressing these challenges sustainably. Moreover, initiatives like C40 Cities Climate Leadership Group (C40) enhance urban climate resilience and take shared responsibility in sourcing integrated climate solutions. This analysis explores the connections among these strategic frameworks and how they can collectively drive sustainability and climate adaptation efforts.

4.2 National Laws. Policies and Codes of Good Practice

The South African Government has established a comprehensive framework of environmental legislation that promotes sustainable socio-economic development while addressing the governance, economic, and social dimensions of sustainability. Central to this framework is the National Environmental Management Act 107 of 1998 (NEMA), which embodies a governance approach by ensuring public participation, transparency, and accountability in environmental decision-making processes.

On the governance front, acts such as the Broad-Based Black Economic Empowerment (BBBEE) Act and the Employment Equity Act 55 of 1998 aim to promote social equity and economic opportunities for previously disadvantaged groups, thereby fostering a more inclusive economy. The Skills Development Act 97 of 1998 further supports this by creating pathways for workforce development and enhancing the skills of individuals across various sectors, thus addressing both economic and social sustainability through education and training.

In the economic dimension, legislation like the National Water Act 36 of 1998 emphasises equitable access to water resources while safeguarding aquatic ecosystems, illustrating the need for responsible resource management as a pillar of economic development. The Mineral and Petroleum Resources Development Act 28 of 2002 also plays a crucial role in ensuring that mineral wealth benefits local communities and the broader economy, reinforcing the necessity of sustainable and equitable resource extraction practices.

Furthermore, the Corporate Social Responsibility (CSR) initiatives encouraged by the government foster partnerships between businesses and communities, enabling companies to contribute positively to society while enhancing their long-term viability. The Marine Living Resources Act 18 of 1998 and the National Forests Act 84 of 1998 provide governance structures that protect biodiversity, which is not only crucial for economic activities like fishing and forestry but also benefits the communities that depend on these resources for their livelihoods.

Additionally, the National Environmental Management: Biodiversity Act 10 of 2004 promotes the conservation of biodiversity, which supports essential ecosystem services and contributes to social well-being. The National Energy Regulator Act 40 of 2004 encourages the transition to sustainable energy solutions, addressing social equity by promoting access to affordable and clean energy.

Collectively, these pieces of legislation exemplify South Africa's commitment to an integrated approach to sustainability, recognising that effective governance, responsible economic practices, and social well-being are interlinked and foundational for a resilient future. This holistic perspective ensures that environmental stewardship, economic growth, and social equity work synergistically to build a sustainable and inclusive society.

4.3 National Strategy for Sustainable Development (NSSD)

There is global recognition that natural resources are not infinite, but also the imminent threat of climate change has resulted in renewed commitment towards sustainable development and sustainability. Similarly, South Africa is also confronted with the degradation of ecosystems, climate change, high energy consumption, and increased pressure on natural resources.

In 2002, post the World Summit on Sustainable Development held in South Africa, there was a renewal of the commitment and action to sustainable development. The key outcomes were the political declaration, Johannesburg Plan of Implementation (JPOI), and forging a range of partnerships. All States committed to formulating national strategies and starting to implement those plans by 2005. Following the World Summit in South Africa, the Departments of Environmental Affairs and Tourism and Foreign Affairs were tasked with developing a national strategy for Sustainable Development.

In 2008, The National Framework for Sustainable Development (NFSD) was approved by Cabinet which ushered in renewed thinking to promote stewardship of natural, social, and economic resources. The strategy is a long-term commitment that integrates economic efficiency, environmental protection, and social equity aligned to South Africa's vision and values to develop sustainable development principles.

4.4 The National Strategy for Sustainable Development

South Africa's National Strategy for Sustainable Development (NSSD) has evolved in three distinct phases. The first phase, spanning from 2003 to 2008, focused on economic and societal analysis to inform the vision, objectives, and strategic targets for sustainable growth. The result of this phase was the establishment of the National Framework for Sustainable Development (NFSD). The second phase, occurring between 2009 and 2010, was dedicated to developing a comprehensive strategy and implementation plan to achieve the strategic priorities set out in the NFSD, along with a monitoring and evaluation framework to guide the execution of the NSSD.

Phase three, covering the period from 2011 onwards, emphasized the implementation of the action plan and the ongoing monitoring and evaluation of progress toward a sustainable society. The goals of the NSSD include promoting new social and economic objectives rooted in ecological sustainability, raising awareness of the value of ecosystem services for human well-being, ensuring that sustainability concerns are integrated into all levels of governance, and fostering collaboration across various functions and sectors to

effectively assess and report on ecological sustainability [27]. These efforts aim to create a culture that recognises the interdependence of socio-economic systems and ecosystems [28].

4.5 The Integrated Sustainable Rural Development Strategy (ISRDS)

The Integrated and Sustainable Rural Development Strategy (ISRDS) aims to enhance opportunities for rural populations by fostering sustainable economic growth, improving access to social amenities, and attracting skilled human capital essential for the development of rural communities. The strategy was initially rolled out in selected areas before being expanded more broadly and is financed through the Medium-Term Expenditure Framework, contributions from the donor community, state organisations, private funders, and public-private partnerships [29].

Given the multi-dimensional nature of rural development, the ISRDS encompasses a variety of initiatives including capacity building, human resource development, land reform, community-driven income generation projects, social assistance programs, and innovative rural financing mechanisms. Local, district, and metropolitan municipalities play a critical role in assessing local development needs and creating integrated programs to address these requirements effectively [30,31]. Efforts to mobilise funding will support planned sustainable projects for rural development, ensuring that initiatives are adequately resourced and aligned with community needs [32].

By incorporating empirical references from 2019 and later, this revised paragraph provides a more robust overview of the cooperative governance system in South Africa while aligning with contemporary academic discourse on the subject.

4.6 Provincial Growth and Development Strategies (PGDS)

South Africa's cooperative governance system necessitates robust coordination among various government spheres, along with the alignment of strategies and programs. Provinces are tasked with cascading and contextualizing national priorities to address the unique circumstances and realities of each region. This involves guiding local governments in the implementation of Integrated Development Plans (IDPs) and programs aimed at sustainable development [33].

Provincial governments are required to align economic planning, infrastructure investment, and development spending with the principles outlined in the National Spatial Development Perspective (NSDP), ensuring an integrated approach to resource allocation [34]. The Provincial Growth and Development Strategy (PGDS) serves as a foundation for sustainable development, ensuring IDPs effectively meet the social needs of the province while considering the limitations imposed by the province's natural resource base [35].

From a sustainable development perspective, the primary objective of the PGDS is to create a collaborative framework that fosters growth and development within the province. To achieve this, a comprehensive assessment of the resource base, assets, development potential, and constraints is essential. The Premiers of each province act as champions of the PGDS, responsible for annually reviewing established targets and maintaining momentum in collaboration to achieve both long-term goals and short-term objectives [36].

4.7 Integrated Development Planning and Community-Based Development

Municipalities have been identified as pivotal to identifying the development needs of communities and for designing development programmes for citizens to participate in social, economic, and political activities at the local, provincial, and national levels. Municipalities must ensure that the Integrated Development Plan (IDP) of a municipality is implemented via a Service Delivery and Budget Implementation Plan (SDBIP) and monitoring by means of a Performance Management System (PMS).

The basic philosophy of an IDP is that it must be community-based. Variation in the capacity of local government affects the nature of the services provided. Across South Africa, at the one extreme, there are towns and cities with established municipal structures and low demand for new services whereas at the other extreme, there are rural settlements with no existing local government capacity to provide basic services.

Besides their capacity constraints and socio-economic realities, local government has the responsibility for the delivery of services and programmes. Each circumstance calls for specific approaches to financing and organising service delivery. These circumstances will directly influence the level (quality and quantity) of services that municipalities provide.

4.8 Local Economic Development

Local Economic Development (LED) plays a pivotal role in fostering sustainable economic growth within communities by integrating economic, social, and environmental considerations into development strategies [37]. By focusing on sustainable practices, LED positively influences the community's resilience to economic shifts and environmental challenges while improving the quality of life for its residents. Sustainable LED initiatives emphasise inclusivity, ensuring that diverse voices are represented in decision-making processes and that benefits are distributed equitably among all community members [38].

Sustainability in LED can be achieved through various approaches, such as promoting green businesses, encouraging local entrepreneurship, and investing in renewable energy source [39]. For instance, when municipalities support the development of eco-friendly enterprises, they not only stimulate job creation but also contribute to reducing carbon footprints and preserving natural resources. This integration of environmental objectives aligns with global sustainability frameworks, such as the United Nations Sustainable Development Goals (SDGs), particularly Goal 8, which focuses on promoting inclusive and sustainable economic growth, employment, and decent work for all.

Furthermore, LED can enhance community resilience by investing in sustainable infrastructure that adapts to climate change [40]. For example, building green public transportation systems reduces congestion and pollution while providing residents with accessible mobility options. This proactive approach to infrastructure development ensures that communities are better equipped to handle the adverse effects of climate change, such as extreme weather events and rising sea levels. The emphasis on sustainability in LED also promotes social equity by ensuring that marginalised communities have access to economic opportunities and essential services [41].

A successful LED strategy is often underpinned by stakeholder collaboration, bringing together local governments, businesses, non-profit organisations, and community members to create a shared vision for sustainable growth [42]. Collaborative initiatives can lead to innovative solutions that tackle local challenges while aligning with broader sustainability goals. For instance, a neighborhood revitalisation project that includes sustainable housing, green spaces, and community services can create a vibrant and resilient community ecosystem.

To further drive the sustainability agenda in LED, policy frameworks need to prioritise long-term investments in education, workforce development, and technology transfer [38]. This can empower local populations to adapt to changing economic landscapes and seize opportunities in emerging green sectors. Programmes that provide training in renewable energy technologies, sustainable agriculture, and resource management can equip residents with the skills necessary for the future job market.

In conclusion, integrating sustainability into Local Economic Development not only enhances economic opportunities but also fosters resilient communities that can thrive amid environmental changes. By promoting inclusive practices and sustainable initiatives, LED can help achieve a balanced approach to growth that aligns with both local needs and global sustainability objectives.

4.9 Climate Change

The C40 Cities Climate Leadership Group is a global network that focuses on tackling climate change and promoting urban climate action among megacities. For Gauteng, participation in C40 offers access to best practices, data-driven policymaking, and opportunities for collaborative initiatives with other cities facing similar climate challenge [43]. The C40 emphasises equity in climate strategies, which aligns well with local efforts such as the Gauteng Development Strategy 2040 (GDS 2040) and the Africa Agenda 2063. By integrating C40 frameworks into its climate strategies, Gauteng can enhance its sustainability efforts, engage communities more effectively, and improve the monitoring and evaluation of its climate initiatives.

Climate change presents significant obstacles to urban development and governance, particularly in Gauteng, the most industrialised province in South Africa. The GDS 2040 and Africa Agenda 2063 serve as essential frameworks for addressing these challenges in a sustainable manner. Additionally, initiatives like the C40 Cities Climate Leadership Group strengthen urban climate resilience and foster a shared responsibility for integrated climate solutions. This analysis examines the interconnections among these strategic frameworks and demonstrates how their collaboration can collectively advance sustainability and climate adaptation efforts in Gauteng.

4.10 Climate Change and Gauteng

Gauteng is confronting multiple climate-related challenges that require a coordinated response, including water scarcity due to altered rainfall patterns, significantly impacting residents and industries alike. Urban pollution exacerbated by climate change also poses severe public health risks, highlighting the need for integrated climate and health strategies. Additionally, vulnerable communities experience disproportionate effects from these climate challenges, underscoring the necessity for policies that prioritise social equity within development agendas [44]. Addressing these interconnected issues is essential for building resilience and ensuring sustainable progress in the region.

4.11 Gauteng Development Strategy 2040 (GDS 2040)

The GDS 2040 emphasises sustainable development through several core objectives aimed at fostering a greener future [45]. It focuses on sustainable resource management by encouraging conservation of water and energy in industrial practices. The strategy also integrates climate resilience into urban planning and infrastructure investments, preparing developments to withstand extreme weather events. Additionally, GDS 2040 promotes a transition to a low-carbon economy by creating green jobs and aligning with global sustainability goals. Importantly, the framework underscores the need for social inclusion, aiming to empower marginalised communities and ensuring that all development initiatives are inclusive.

In addition, all the provinces and municipalities further design policies and by-laws linked to legislation to manage, for example, solid waste, sensitive wetlands, stormwater, spatial development, and land use. The strategy is premised on five strategic priorities which are: enhancing systems for integrated planning and implementation; sustaining our ecosystems and using natural resources efficiently; towards a Green Economy; building sustainable communities and responding effectively to climate change.

5. Challenges to Implementation of Sustainability Laws and Policies

Effective coordination and institutional capacity is crucial for integrating sustainability policies across different governmental layers [46]. Studies indicate that fragmented governance structures can lead to disjointed policy approaches and ineffective resource utilisation. For instance, the lack of a unified framework can obstruct comprehensive climate action, ultimately resulting in inconsistent outcomes.

The entrenched socio-economic disparities in South Africa pose significant barriers to equitable sustainable development. Addressing these disparities requires targeted interventions to bridge the gaps in resource access and community engagement, particularly among marginalised populations [47].
Financial constraints remain a pressing issue, particularly in rural municipalities lacking the investment needed for infrastructure development. This can drastically limit the capacity to adopt and sustain innovative practices vital for achieving sustainability goals [48].

Public awareness and active engagement are critical for cultivating community ownership of sustainability initiatives. Empirical studies show that participatory governance enhances the effectiveness of sustainability policies and promotes inclusive dialogue [49]. Strategic partnerships with the private sector can facilitate access to resources, expertise, and innovative solutions that can enhance local sustainability efforts. A significant trend in South Africa reflects an increase in corporate social responsibility (CSR) initiatives that align with local development goals [50].

Municipalities can leverage technological advancements to promote sustainability through smart city solutions that optimize resource use. Embracing innovative technologies in energy, transportation, and waste management can accelerate progress towards sustainability goals (Zhou, Lau, & So, 2023). Incorporating indigenous knowledge systems into environmental management strategies can enhance the ability of municipalities to address sustainability challenges. This approach recognises traditional ecological practices while preserving cultural heritage and environmental diversity [51].

By addressing the identified challenges and leveraging the highlighted opportunities, municipalities can significantly advance their sustainability goals while contributing to broader climate change mitigation and adaptation strategies. This multi-faceted approach, grounded in local context and community engagement, is crucial for achieving meaningful and lasting impact.

6. Recommendations

To enhance sustainability efforts, governments should prioritize several key recommendations. First, they must conduct regular reviews of existing sustainability laws and policies to ensure alignment with evolving global standards and local realities, which may involve refining frameworks and introducing new regulations to enhance coherence across different governmental levels. Establishing interdepartmental committees or task forces will facilitate better coordination among government sectors, while training programs can improve institutional capacities, particularly in rural areas where resources and expertise are limited. Targeted programs should be implemented to prioritise marginalised communities, ensuring equitable access to resources and opportunities, alongside policy measures addressing poverty alleviation, education, and healthcare access as integral to sustainability goals.

Governments are encouraged to develop innovative financing mechanisms, such as public-private partnerships (PPPs) and green bonds, to fund sustainable development projects and seek collaboration with international funding agencies to channel resources into pressing initiatives. Public participation should be fostered by engaging citizens through comprehensive education programs on sustainability practices and encouraging community ownership of initiatives through participatory governance frameworks that invite local input.

The integration of smart technologies in local governments should be promoted to optimize resource management, enhance monitoring of sustainability targets, and facilitate data-driven policymaking, while also incentivizing the adoption of renewable energy technologies to mitigate climate change impacts. Additionally, sustainability should be integrated into local economic development strategies by investing in green businesses and sustainable infrastructure, prioritising local entrepreneurship and job creation in sectors that contribute to environmental sustainability.

Finally, platforms for integrating indigenous knowledge systems into sustainability practices and policies should be created, enriching environmental management strategies and honoring the cultural heritage of local communities. By pursuing these recommendations, unicipalities and governments can significantly enhance their sustainability efforts, leading to more resilient communities better prepared to confront climate change challenges. Ultimately, the successful implementation of sustainability laws and policies will contribute to a more equitable, socially inclusive, and environmentally sustainable future, aligning with both national interests and global commitments.

7. Conclusions

The literature review of laws, frameworks, and policies related to sustainability emphasises the complexity and interdependence of global and national efforts to promote sustainable development. It demonstrates that while significant progress has been made under initiatives such as the Sustainable Development Goals (SDGs) and various regional frameworks, various challenges still hinder effective implementation. In South Africa, the Constitution, alongside the National Strategy for Sustainable Development (NSSD) and numerous environmental laws, provides a robust legal foundation aimed at achieving sustainability. However, fragmentation in governance, socio-economic disparities, financial constraints, and institutional capacity continue to pose barriers to the successful execution of sustainability initiatives.

The study also highlights the importance of collaboration among stakeholders, including governmental agencies, local communities, and the private sector, to foster a more inclusive and resilient approach to sustainable development. The integration of local knowledge and public participation are crucial components to ensure that sustainability efforts are context-specific and address the unique needs of diverse communities. By establishing stronger partnerships and leveraging technological advancements,

municipalities can better adapt to climate change while fostering local economies and promoting social equity [52-55].

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