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POLICY-DRIVEN REVITALISATION OF SOUTH AFRICAN MINING TOWNS: FROM EXTRACTION TO SUSTAINABLE COMMUNITIES

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Abstract: Mining has been central to South Africa's economic development for over a century, contributing significantly to national income, employment, exports and industrialisation. However, despite their substantial economic contribution, many mining towns continue to experience persistent socio-economic challenges, including unemployment, poverty, deteriorating infrastructure, environmental degradation, weak municipal governance and limited economic diversification. This study examines the effectiveness of South Africa's policy and governance framework in revitalising mining towns into sustainable, resilient and inclusive communities. It seeks to develop a comprehensive policy-driven framework that promotes long-term socio-economic development, environmental sustainability and post-mining community resilience. The development of South African mining towns has largely been driven by extractive economic activities rather than sustainable territorial development. Although the country has established an extensive legislative and policy framework—including the Mineral and Petroleum Resources Development Act, the Mining Charter, Social and Labour Plans, the National Development Plan 2030, the District Development Model and the Spatial Planning and Land Use Management Act—implementation remains fragmented, poorly coordinated and inconsistently monitored. Consequently, many mining communities continue to experience governance failures, inadequate service delivery, declining municipal capacity and economic vulnerability, particularly in the context of mine closures and the Just Energy Transition. The absence of an integrated policy framework for sustainable mining-town revitalisation represents a significant gap in both policy and scholarly literature. The study adopts a qualitative research approach based on an extensive review and critical analysis of secondary data. Data were obtained from peer-reviewed journal articles, government legislation, policy documents, official reports, municipal governance reports, international development publications and industry reports relating to mining-town development in South Africa. A thematic content analysis was employed to identify recurring governance, policy, socio-economic and environmental issues affecting mining communities. The analysis further examined the alignment and effectiveness of existing legislative and institutional frameworks in promoting sustainable local development and identified international best practices relevant to the South African context. The study finds that South Africa possesses a comprehensive legislative and policy framework to support sustainable mining-community development; however, implementation is constrained by fragmented governance, weak intergovernmental coordination, limited municipal capacity, inadequate monitoring of Social and Labour Plans and insufficient community participation. The findings further reveal that many mining towns remain economically dependent on mineral extraction, making them vulnerable to mine closures, commodity market fluctuations and the transition towards a low-carbon economy. Environmental degradation, deteriorating infrastructure and limited economic diversification continue to undermine long-term community resilience. The study concludes that sustainable revitalisation requires integrated governance, stronger institutional collaboration, effective policy implementation, economic diversification, environmental rehabilitation, inclusive stakeholder participation and improved municipal planning. The study concludes that the future sustainability of South Africa's mining towns depends on a deliberate transition from extraction-driven development towards integrated, policy-driven community revitalisation. Sustainable mining communities cannot be achieved through isolated corporate social investment initiatives or fragmented government interventions alone. Instead, coordinated governance.

Keywords: *Mining towns; Sustainable communities; Policy-driven revitalisation; Sustainable development; Mineral and Petroleum Resources Development Act (MPRDA); Local economic development; Municipal governance; Economic diversification; Social and Labour Plans (SLPs); Environmental rehabilitation; Mining policy; Community resilience; Public policy; Integrated development planning; Just Energy Transition; Infrastructure development; Resource governance; Post-mining development; South Africa; Sustainable Development Goals (SDGs).*

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Introduction

Mining has been the cornerstone of South Africa's economic development for more than 150 years, shaping the country's industrialisation, urbanisation, labour markets and spatial development. Since the discovery of diamonds in Kimberley in 1867 and gold on the Witwatersrand in 1886, mining has driven the establishment and expansion of numerous towns, including Rustenburg, Emalahleni, Welkom, Kathu, Postmasburg, Lephalale, Carletonville and Kuruman. These mining towns have played a pivotal role in national economic growth by generating employment, foreign exchange earnings, infrastructure development and regional economic activity. However, while mining has created significant economic wealth, many mining communities continue to experience persistent socio-economic challenges, including poverty, unemployment, inadequate housing, environmental degradation, poor municipal governance, deteriorating infrastructure and limited economic diversification. These challenges have intensified calls for a transition from extractive economies towards sustainable and resilient communities.

The South African mining industry remains one of the country's most important economic sectors. According to the Minerals Council South Africa (2025), the mining sector contributed approximately 6.1% of South Africa's Gross Domestic Product (GDP) in 2024, generated R800.9 billion in primary mineral sales, produced R776.1 billion in mineral exports, and directly employed 474,876 people. Although these figures demonstrate the continued strategic importance of mining to the national economy, they also highlight the growing need to ensure that the benefits generated by mineral extraction translate into sustainable socio-economic development within host communities rather than remaining concentrated within the mining value chain.

Despite their economic significance, many South African mining towns continue to experience severe developmental challenges. Rapid urbanisation associated with mining activities has outpaced municipal planning capacity, resulting in expanding informal settlements, inadequate water and sanitation services, deteriorating roads, housing shortages and increasing service delivery protests. These challenges are compounded by fluctuating commodity prices, mine closures, mechanisation and declining employment opportunities, which expose mining-dependent municipalities to significant economic vulnerability. Research increasingly demonstrates that mono-industrial mining towns are particularly susceptible to economic decline because of their dependence on a single economic activity, making economic diversification and long-term planning essential components of sustainable development.

South Africa's broader socio-economic context further reinforces the urgency of revitalising mining communities. The country continues to face one of the highest unemployment rates globally, with the official unemployment rate remaining above 32%, while youth unemployment exceeds 45%. These conditions place enormous pressure on mining municipalities, particularly where mine retrenchments, declining mineral production and limited alternative industries reduce employment opportunities and municipal revenue. Simultaneously, numerous municipalities responsible for mining communities continue to receive adverse audit outcomes due to governance failures, weak financial management, infrastructure backlogs and poor service delivery, undermining their capacity to support sustainable local economic development.

Recognising these challenges, South Africa has adopted a comprehensive legislative and policy framework aimed at ensuring that mineral resources contribute to inclusive and sustainable development. The Mineral and Petroleum Resources Development Act (Act 28 of 2002) establishes that the country's mineral resources are the common heritage of all South Africans and requires mining companies to contribute towards socio-economic development through Social and Labour Plans (SLPs). Complementing this legislation are the National Development Plan 2030, which promotes inclusive economic growth and spatial transformation; the Spatial Planning and Land Use Management Act (Act 16 of 2013), which seeks integrated spatial development; the Integrated Urban Development Framework (2016), which advances sustainable and resilient cities; the Breaking New Ground Housing Policy (2004), which promotes sustainable human settlements; the District Development Model (2020), which encourages integrated planning across all spheres of government; and the National Infrastructure Plan 2050, which prioritises infrastructure investment as a catalyst for regional economic development. Together, these policy instruments provide a coherent framework for transforming mining towns into diversified, inclusive and sustainable communities capable of supporting long-term economic resilience.

The transition from extraction-driven development towards sustainable mining communities has become increasingly important within the context of global sustainable development agendas. Sustainable Development Goals (SDGs), particularly SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action) and SDG 16 (Peace, Justice and Strong Institutions) collectively emphasise the need for responsible resource governance, inclusive economic development and environmentally sustainable urbanisation. Furthermore, South Africa's Just Energy Transition and climate commitments require coal-dependent mining regions to diversify their local economies while simultaneously ensuring that workers and communities are not left behind during the transition to a low-carbon economy.

Against this background, the revitalisation of South Africa's mining towns requires a policy-driven approach that extends beyond mineral extraction towards integrated spatial planning, economic diversification, environmental rehabilitation, institutional strengthening and community-centred development. Sustainable revitalisation depends on coordinated governance involving national and provincial government, municipalities, mining companies, civil society, local communities and private investors. Such an approach seeks to transform mining towns from vulnerable extractive settlements into resilient, diversified and inclusive communities capable of sustaining economic prosperity long after mineral resources have been depleted.

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Background to the Study

South Africa's mining industry has historically been the backbone of the country's economic development and remains one of the world's leading producers of minerals, including platinum group metals, manganese, chrome, coal, gold, iron ore and diamonds. The discovery of diamonds in Kimberley in 1867 and gold on the Witwatersrand in 1886 fundamentally transformed South Africa's economic landscape, leading to rapid industrialisation, urbanisation and the establishment of numerous mining towns across provinces such as Gauteng, North West, Limpopo, Mpumalanga, the Northern Cape and the Free State. These settlements—including Rustenburg, Emalahleni, Welkom, Kathu, Postmasburg, Lephalale and Carletonville—were established primarily to support mineral extraction and have remained economically dependent on mining activities for decades.

The mining sector continues to play a strategic role in South Africa's economy despite increasing structural challenges. According to the Department of Mineral and Petroleum Resources (DMPR), the mining industry generated more than R800 billion in mineral sales during 2024, while remaining one of the country's largest export earners and employers. The sector directly employs approximately 475,000 workers and continues to make a significant contribution to gross domestic product, export earnings and government revenue. Nevertheless, declining ore grades, rising operational costs, electricity supply constraints, logistics bottlenecks, fluctuating commodity prices and increasing environmental compliance requirements have reduced the long-term sustainability of many mining operations. These structural pressures have resulted in mine closures, retrenchments and declining municipal revenues in several mining-dependent communities.

Although mining has generated substantial economic wealth, many mining towns have not experienced commensurate social and economic development. Instead, numerous communities continue to face persistent poverty, unemployment, inadequate housing, deteriorating infrastructure, environmental degradation, weak municipal governance and increasing service delivery protests. Rapid inward migration associated with mining has frequently outpaced municipal planning capacity, resulting in the expansion of informal settlements, pressure on water and sanitation infrastructure, increased waste generation and growing demand for health, education and public safety services. Consequently, many mining municipalities continue to struggle with maintaining basic services despite being located within economically productive regions.

The sustainability of mining towns has become an increasingly important public policy issue as South Africa confronts mine depletion, economic restructuring and the transition towards a low-carbon economy. Mining communities dependent on coal production, particularly in Mpumalanga and Limpopo, face additional uncertainty arising from the country's Just Energy Transition, which seeks to reduce greenhouse gas emissions while ensuring that workers and local economies are not disproportionately affected. These developments require comprehensive strategies that promote economic diversification, investment in alternative industries, workforce reskilling, infrastructure renewal and environmental rehabilitation to ensure that communities remain economically viable after mining activities decline.

Recognising these challenges, the South African government has progressively strengthened its legislative and policy framework governing mining and community development. The Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) fundamentally transformed mineral governance by declaring mineral resources the common heritage of all South Africans and requiring mining companies to contribute to socio-economic development through Social and Labour Plans (SLPs). These plans are intended to promote local economic development, employment creation, skills development, housing improvement and community infrastructure in mining-affected areas. The Mining Charter (2018) further advances transformation, inclusive ownership, procurement, employment equity and sustainable community development within the mining sector.

Mining-town revitalisation is further supported by broader national development policies. The National Development Plan (NDP) 2030 identifies inclusive economic growth, spatial transformation, infrastructure investment and capable local government as essential prerequisites for sustainable development. Similarly, the Spatial Planning and Land Use Management Act (SPLUMA), 2013 (Act No. 16 of 2013) promotes integrated spatial planning and coordinated land-use management, while the Integrated Urban Development Framework (IUDF) encourages compact, resilient and inclusive urban settlements. The District Development Model (DDM) reinforces cooperative governance by aligning planning and service delivery across national, provincial and local spheres of government. More recently, the National Infrastructure Plan 2050 has prioritised strategic infrastructure investment to improve economic competitiveness, logistics, water security and regional development, all of which are fundamental to the future sustainability of mining towns.

The environmental legacy of mining further complicates sustainable development efforts. South Africa continues to face challenges associated with abandoned and ownerless mines, acid mine drainage, land degradation, biodiversity loss and illegal mining activities. These environmental risks threaten public health, water resources, agricultural production and future economic opportunities while imposing substantial rehabilitation costs on government and local municipalities. Effective mine closure planning, environmental restoration and post-mining land-use planning have therefore become integral components of sustainable mining governance and long-term community resilience.

Internationally, there has been a growing shift from extractive development models towards sustainable resource governance that balances economic growth with environmental protection, social inclusion and institutional accountability. This approach aligns with the United Nations Sustainable Development Goals (SDGs), particularly SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action) and SDG 16 (Peace, Justice and Strong Institutions). These global commitments encourage governments and mining companies to ensure that mineral wealth contributes to inclusive and resilient local development rather than temporary economic gains.

Against this backdrop, the revitalisation of South Africa's mining towns requires a coordinated, policy-driven approach that extends beyond mineral extraction towards diversified local economies, strengthened municipal governance, sustainable infrastructure, environmental rehabilitation and inclusive community participation. Such an approach recognises that the long-term success of mining regions depends not only on the extraction of mineral resources but also on the capacity of institutions, communities and the private sector to collaboratively build resilient and sustainable settlements capable of thriving beyond the life of the mine.

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Research Problem

Towards a low-carbon economy and the implementation of South Africa's Just Energy Transition have intensified concerns regarding the long-term sustainability of mining-dependent communities. Many mining towns remain economically dependent on a single extractive industry, making them vulnerable to mine closures, job losses and declining municipal revenues. Existing studies have generally examined mining governance, environmental management, local economic development or corporate social responsibility separately, with limited integration of these dimensions into a comprehensive policy framework for sustainable mining-town revitalisation. Consequently, there is insufficient empirical evidence regarding the effectiveness of existing policies in promoting resilient, diversified and sustainable mining communities.

This study therefore seeks to address this gap by critically evaluating South Africa's policy and governance framework for mining-town development and by developing an integrated policy-driven revitalisation framework that promotes economic diversification, environmental rehabilitation, institutional strengthening, collaborative governance and sustainable community development beyond the life of mining operations.

Central Problem Statement

Despite South Africa's comprehensive legislative and policy framework for mining-community development, many mining towns continue to experience persistent socio-economic decline, environmental degradation, weak governance, inadequate infrastructure and economic dependence on extractive industries. The absence of an integrated and effectively implemented policy-driven revitalisation framework has limited the transformation of mining towns into sustainable, resilient and diversified communities. Consequently, there is a need to develop an evidence-based policy framework that strengthens governance, promotes economic diversification, enhances environmental sustainability and sup[ports long-term community resilience in South Africa mining towns.

Aim of the Study

The aim of this study is to critically examine the effectiveness of South Africa's policy and governance framework in revitalising mining towns into sustainable, resilient and economically diversified communities. The study seeks to evaluate the extent to which existing legislation, institutional arrangements and development policies promote sustainable socio-economic development, environmental stewardship and post-mining community resilience, and to propose a comprehensive policy-driven framework for the sustainable revitalisation of South African mining towns.

Research Objectives

The study seeks to:

1. Examine the historical development and socio-economic characteristics of mining towns in South Africa.
2. Analyse the legislative, policy and institutional framework governing the sustainable development and revitalisation of mining communities in South Africa.
3. Evaluate the socio-economic, environmental and governance challenges affecting the sustainability of South African mining towns.
4. Assess the effectiveness of existing government policies, Social and Labour Plans (SLPs), municipal development strategies and public-private partnerships in promoting sustainable community development within mining towns.
5. Identify national and international best practices for the sustainable revitalisation of mining communities and assess their applicability within the South African context.
6. Develop a policy-driven framework to strengthen governance, economic diversification, environmental rehabilitation and sustainable community development in South African mining towns.

Research Questions

The study seeks to answer the following research questions:

1. What historical, socio-economic and institutional factors have influenced the development of mining towns in South Africa?
2. What legislative, policy and governance frameworks regulate the sustainable development and revitalisation of mining communities in South Africa?
3. What are the major socio-economic, environmental and governance challenges affecting the sustainability of South African mining towns?
4. To what extent have existing government policies, Social and Labour Plans, municipal development initiatives and stakeholder partnerships contributed to the sustainable revitalisation of mining communities?
5. What national and international best practices can be adapted to improve the long-term sustainability and resilience of South African mining towns?
6. What policy-driven framework can be developed to support integrated governance, economic diversification, environmental sustainability and resilient community development in South African mining towns?

Aim	Research Objective	Research Question
To examine the effectiveness of policy-driven revitalisation of mining towns into sustainable communities.	Objective 1: Examine the historical development and socio-economic characteristics of mining towns.	Research Question 1: What historical and socio-economic factors have influenced the development of mining towns?
	Objective 2: Analyse the legislative and policy framework.	Research Question 2: What legislative and policy frameworks regulate mining-town revitalisation?
	Objective 3: Evaluate socio-economic, environmental and governance challenges.	Research Question 3: What are the principal challenges affecting sustainable mining communities?
	Objective 4: Assess the effectiveness of current policies and development initiatives.	Research Question 4: To what extent have existing policies and programmes contributed to sustainable revitalisation?
	Objective 5: Identify national and international best practices.	Research Question 5: Which best practices can strengthen sustainable mining-town development in South Africa?
	Objective 6: Develop a policy-driven revitalisation framework.	Research Question 6: What policy framework can be developed to promote sustainable, resilient and diversified mining communities?

Significance of the Study

The revitalisation of mining towns has become an increasingly important policy priority in South Africa as the country seeks to balance economic growth, environmental sustainability and social development. Although mining remains a significant contributor to national economic development, many mining communities continue to experience persistent socio-economic inequalities, deteriorating infrastructure, environmental degradation, high unemployment, weak municipal governance and limited economic diversification. These challenges underscore the need for evidence-based policy interventions that promote resilient and sustainable communities capable of thriving beyond the life cycle of mining operations. Consequently, this study makes important theoretical, policy and practical contributions.

Contribution to Knowledge

This study contributes to the growing body of knowledge on sustainable mining-town development by integrating concepts from public policy, sustainable development, local governance, regional planning and resource governance. While existing studies have largely focused on the economic contribution of mining or the environmental impacts of extraction, comparatively few have examined mining-town revitalisation through a comprehensive policy and governance perspective. This research therefore advances interdisciplinary understanding of how legislative frameworks, institutional capacity, governance systems and stakeholder collaboration collectively influence sustainable community development in mining regions.

Contribution to Public Policy

The findings will provide valuable evidence for strengthening South Africa's policy framework governing mining communities. Specifically, the study will evaluate the effectiveness of the Mineral and Petroleum Resources Development Act (Act 28 of 2002), the Mining Charter (2018), Social and Labour Plans (SLPs), the National Development Plan (NDP) 2030, the District Development Model (DDM), the Spatial Planning and Land Use Management Act (SPLUMA) and the National Infrastructure Plan 2050 in promoting sustainable development within mining towns. The study will identify policy implementation gaps and recommend integrated policy reforms that enhance accountability, coordination and long-term community resilience.

Contribution to Government and Municipalities

The research will provide practical recommendations for national, provincial and local government institutions responsible for mining-town governance. Municipalities often experience significant fiscal and administrative pressures associated with rapid urbanisation, mine closures and declining local revenues. The proposed policy-driven revitalisation framework will support municipalities in improving integrated development planning, infrastructure investment, economic diversification, environmental management and service delivery, thereby strengthening institutional resilience and local governance.

Contribution to the Mining Industry

The study will assist mining companies in improving the implementation of Social and Labour Plans, environmental rehabilitation programmes and corporate social investment initiatives. By identifying factors that promote sustainable local economic development and meaningful stakeholder engagement, the research will support responsible mining practices that create shared value for mining companies and host communities. This aligns with Environmental, Social and Governance (ESG) principles and international expectations for responsible resource governance.

Contribution to Communities

Mining communities are among the primary beneficiaries of this research. The study promotes approaches that enhance employment creation, skills development, entrepreneurship, infrastructure improvement, environmental restoration and inclusive community participation. The proposed framework seeks to improve the quality of life of residents by supporting diversified local economies that remain viable beyond mine closure, thereby reducing long-term dependence on mineral extraction.

Contribution to Sustainable Development

The study directly supports the achievement of the United Nations Sustainable Development Goals (SDGs), particularly SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action) and SDG 16 (Peace, Justice and Strong Institutions). By proposing an integrated policy framework for sustainable mining-town revitalisation, the research contributes to national and international efforts aimed at building inclusive, resilient and environmentally sustainable communities.

Research Gap

Despite the extensive literature on South Africa's mining industry, significant knowledge gaps remain regarding the long-term sustainability and revitalisation of mining towns. Much of the existing research has concentrated on the economic contribution of mining, labour relations, environmental degradation, occupational health and safety, mineral governance or corporate social responsibility. Although these studies provide valuable insights, they often examine these issues in isolation and do not sufficiently address the interconnected governance, policy, socio-economic and environmental dimensions necessary for sustainable mining-community development.

A notable gap exists in evaluating the effectiveness of South Africa's policy framework in transforming mining-dependent settlements into diversified and resilient communities. While legislation such as the Mineral and Petroleum Resources Development Act, the Mining Charter, and the Social and Labour Plan Guidelines requires mining companies to contribute to local development, there remains limited empirical evidence regarding the extent to which these policy instruments have achieved sustainable socio-economic outcomes in mining towns. Furthermore, comparatively little research has examined the alignment and coordination of these mining-specific policies with broader national development frameworks, including the National Development Plan 2030, the District Development Model, SPLUMA, the Integrated Urban Development Framework, and the National Infrastructure Plan 2050.

Another important gap relates to governance and institutional capacity. Existing studies frequently identify poor municipal performance, infrastructure deterioration and weak intergovernmental coordination as major obstacles to sustainable development. However, there is limited research proposing integrated governance models that strengthen collaboration between government departments, municipalities, mining companies, civil society organisations and local communities. This lack of coordinated governance frameworks has contributed to fragmented planning and inconsistent implementation of development initiatives across mining regions.

The transition towards a low-carbon economy has introduced additional challenges that remain underexplored in the South African context. While the Just Energy Transition has received increasing policy attention, limited research has examined its implications for mining towns, particularly regarding economic diversification, workforce reskilling, post-mining land use, environmental rehabilitation and community resilience. As South Africa gradually transitions away from carbon-intensive industries, there is an urgent need for evidence-based policy frameworks that support inclusive and sustainable local economic transformation.

Finally, existing studies have generally focused on individual mining towns or specific provinces, limiting the development of nationally applicable policy recommendations. There remains a need for comprehensive research that synthesises legislative, institutional, socio-economic, environmental and governance perspectives into an integrated policy-driven revitalisation framework capable of guiding sustainable development across South Africa's diverse mining communities.

This study addresses these gaps by undertaking a comprehensive analysis of South Africa's mining policy and governance framework, evaluating the effectiveness of existing legislation and development programmes, examining institutional and socio-economic challenges, identifying international best practices, and developing an integrated policy-driven framework for the sustainable revitalisation of mining towns. The proposed framework aims to support long-term economic diversification, effective governance, environmental sustainability and resilient community development in South Africa's mining regions.

Theoretical Framework

Introduction

The study is anchored in resource curse theory and sustainable livelihoods theory. Resource curse theory explains how resource-rich regions may experience underdevelopment, institutional weakness and economic volatility when mineral wealth is not transformed into broad-based local development. Sustainable livelihoods theory, by contrast, emphasises the importance of diversified assets, resilient institutions and community capabilities in securing long-term well-being. Together, these perspectives provide a useful lens for understanding why many mining towns remain dependent on a single extractive industry and why policy interventions must move beyond revenue generation to include governance reform, economic diversification, social protection and environmental rehabilitation.

A theoretical framework provides the conceptual foundation upon which a study is built. It explains the relationships between concepts, guides the interpretation of findings, and provides a lens through which the research problem is analysed (Creswell & Creswell, 2023; Saunders, Lewis, & Thornhill, 2023). In studies focusing on mining communities, theories should explain both the causes of persistent underdevelopment in resource-rich areas and the mechanisms through which sustainable development can be achieved. Accordingly, this study is underpinned by Resource Curse Theory and the Sustainable Livelihoods Framework (SLF). Together, these theories provide complementary perspectives for understanding why many South African mining towns continue to experience socio-economic and governance challenges despite their mineral wealth and how integrated policy interventions can support sustainable community revitalisation.

Resource Curse Theory

Definition

Resource Curse Theory, also known as the Paradox of Plenty, was first articulated by Auty (1993) and further developed by Sachs and Warner (1995; 2001). The theory argues that countries and regions endowed with abundant natural resources frequently experience slower economic growth, weak institutional development, governance failures, social inequality and environmental degradation compared with less resource-endowed regions. Rather than serving as a catalyst for sustainable development, resource wealth may foster overdependence on extractive industries, reduce economic diversification, weaken accountability and create institutional inefficiencies.

Recent scholars argue that the resource curse is not inevitable but is largely determined by the quality of governance, institutional effectiveness, public policy, transparency and the equitable distribution of resource revenues (Ross, 2015; Cust & Mihalyi, 2023). Where institutions are strong, mineral wealth can stimulate inclusive development; where governance is weak, resource abundance often reinforces poverty, inequality and economic vulnerability.

Relevance to the Study

Resource Curse Theory provides an appropriate lens for understanding why many South African mining towns continue to experience underdevelopment despite generating substantial mineral wealth. Communities such as Rustenburg, Emalahleni, Matjhabeng, Carletonville and parts of the Northern Cape illustrate how economic dependence on mining has often been accompanied by inadequate infrastructure, poor municipal performance, unemployment, environmental degradation and limited economic diversification. The theory enables the study to critically assess whether existing policies including the Mineral and Petroleum Resources Development Act (2002), the Mining Charter (2018), Social and Labour Plans (SLPs) and the National Development Plan (2030) have effectively transformed mineral wealth into sustainable local development.

Evolutionary Governance Framework

The issues facing South Africa's mining towns necessitate governance structures that are flexible, adaptive, and responsive to evolving socio-economic conditions (Scott, 2015; Evers & de Vries, 2019). This study, informed by Evolutionary Governance Theory, contends that mining towns ought to be managed through dynamic systems rather than fixed policy frameworks, allowing for continual adaptation to demographic changes, housing demands, economic transformations, and institutional obstacles (Van Assche, Beunen & Duineveld, 2014). Evolutionary Governance Theory acknowledges that governance systems are influenced by historical legacies, institutional interactions, power dynamics, and continuous policy adaptation (Van Assche et al., 2020). Thus, the sustainable revitalisation of mining towns relies on governance strategies that foster institutional learning, policy integration, and collaborative development (Kemp, Parto & Gibson, 2005).

Enhancing Adaptive Governance Frameworks

Adaptive governance denotes the capacity of institutions and governance entities to respond adeptly to evolving circumstances via flexibility, collaboration, and ongoing modification (Boonstra & de Roo, 2017). In South African mining communities, governance structures frequently exhibit fragmentation and reactivity, leading to postponed service delivery, housing shortages, and infrastructure deterioration (HSRC, 2022). Municipalities sometimes lack the institutional capacity to address rapid population increase induced by mining activities, while mining corporations and government departments function under disjointed planning frameworks (Marais, Nel & Donaldson, 2019).

An evolutionary governance approach necessitates governance systems that are dynamic and responsive, as opposed to bureaucratic and inflexible (Scott, 2015). Adaptive governance systems must incorporate integrated planning platforms that engage municipalities, mining corporations, provincial administrations, communities, and civil society organisations. Collaborative systems can enhance coordinated decision-making in housing, infrastructure, environmental management, and social development (Kemp, Parto & Gibson, 2005).

Data from South Africa underscore the necessity of adaptable governance. The Human Sciences Research Council indicated that numerous mining communities persist in facing significant service delivery deficits, notwithstanding the considerable mining earnings produced within their areas (HSRC, 2022). In municipalities like Rustenburg and Emalahleni, fast urbanisation has strained local government, leading to a rise in informal settlements, water scarcity, failing infrastructure, and social unrest (Donaldson, Marais & Mbonane, 2018). These governance problems illustrate the incapacity of current institutions to adapt to mining-induced urban expansion.

Adaptive governance necessitates that towns implement long-term planning frameworks that foresee future settlement expansion instead of solely responding to emergencies (Boonstra & de Roo, 2017). Evolutionary Governance Theory posits that governance systems develop through interaction and learning; thus, institutions must perpetually evaluate policy outcomes and modify governance tactics in response to evolving circumstances (Evers & de Vries, 2019).

Advancing Learning-Centric Governance Frameworks

Evolutionary governing Theory highlights that governing systems develop through learning, experimentation, and institutional adaptation (Van Assche, Beunen & Duineveld, 2014). Learning-oriented governance systems promote policy innovation, collaborative problem-solving, and ongoing evaluation of governance outcomes (Evers & de Vries, 2019).

In South African mining towns, governance institutions frequently replicate failed strategies due to bureaucratic inflexibility and inadequate knowledge integration (HSRC, 2022). Learning-oriented governance necessitates the collaboration of municipalities, mining enterprises, researchers, and communities to exchange knowledge and jointly determine sustainable solutions (Kemp, Parto & Gibson, 2005).

- Policy learning may transpire via.
- Comparative analyses of mining municipalities.
- Community feedback systems.
- Perpetual assessment of housing and enhancement initiatives.
- Incorporation of scholarly research into urban planning.

Collaborations among academic institutions, governmental bodies, and mining. industry stakeholders. Governance focused on learning also fosters resilience. Mining communities are particularly susceptible to economic disruptions, mine shutdowns, environmental deterioration, and social upheaval (Aigbedion & Iyayi, 2007; Baker & Newell, 2014). Governance systems that can learn and adapt are more likely to respond effectively to these problems (World Bank, 2021).

Ultimately, the sustainable revitalisation of South Africa's mining towns necessitates governance structures that adapt continuously to economic, social, and spatial developments. Evolutionary governance offers a crucial framework for comprehending the co-evolution of institutions, policies, and communities towards more inclusive, adaptive, and sustainable mining settlements (Scott, 2015; Van Assche et al., 2020).

Sustainable Livelihoods Framework (SLF)

Definition

The Sustainable Livelihoods Framework was developed by the Department for International Development (DFID, 1999) and has become one of the most influential frameworks for analysing poverty reduction and community development. The framework defines a sustainable livelihood as one that enables individuals and communities to cope with and recover from economic, environmental and social shocks while maintaining or enhancing their capabilities and assets without undermining the natural resource base upon which future generations depend (Scoones, 1998; Serrat, 2017).

The framework identifies five forms of livelihood capital that determine community resilience:

- Human capital (education, skills and health)
- Social capital (networks, trust and participation)
- Natural capital (land, water and environmental resources)
- Physical capital (infrastructure and public services)
- Financial capital (income, employment and investment)

Sustainable livelihoods are achieved when these capitals are strengthened through supportive institutions, effective governance and inclusive development policies.

Integration of the Theoretical Framework

The integration of Resource Curse Theory and the Sustainable Livelihoods Framework provides a comprehensive conceptual foundation for this study. Resource Curse Theory explains the structural and institutional factors responsible for the persistent socio-economic challenges experienced by mining towns, whereas the Sustainable Livelihoods Framework provides practical guidance for designing policies that promote resilient, diversified and sustainable communities.

The combined application of these theories enables the study to evaluate the effectiveness of South Africa's mining policies, governance systems and institutional arrangements while simultaneously proposing an integrated policy-driven framework for mining-town revitalisation. Together, they demonstrate that sustainable development requires more than mineral extraction; it depends on effective governance, accountable institutions, economic diversification, environmental stewardship, community participation and long-term investment in human and physical development.

Relevance to the study

The Sustainable Livelihoods Framework is directly relevant because the revitalisation of mining towns extends beyond economic growth to include the improvement of community well-being, institutional resilience and environmental sustainability. The framework enables the study to examine how mining policies and governance systems influence the availability and utilisation of livelihood assets within mining communities.

The framework is particularly useful for assessing whether existing government programmes, Social and Labour Plans, municipal development strategies and corporate social investment initiatives contribute to long-term community resilience through employment creation, skills development, infrastructure improvement, environmental rehabilitation and economic diversification.

Methodological Approach

The study adopts a qualitative research approach based on an extensive review and critical analysis of secondary data. Data were obtained from peer-reviewed journal articles, government legislation, policy documents, official reports, municipal governance reports, international development publications and industry reports relating to mining-town development in South Africa. A thematic content analysis was employed to identify recurring governance, policy, socio-economic and environmental issues affecting mining communities. The analysis further examined the alignment and effectiveness of existing legislative and institutional frameworks in promoting sustainable local development and identified international best practices relevant to the South African context.

Discussion and Key Fiundings

The Sustainable Livelihoods Framework complements Resource Curse Theory by providing a practical pathway towards sustainable mining-town development. While Resource Curse Theory explains why many mining communities experience underdevelopment despite abundant natural resources, the Sustainable Livelihoods Framework identifies the assets and institutional conditions necessary for sustainable transformation.

Within South Africa, sustainable mining-town revitalisation requires strengthening all five livelihood capitals simultaneously. Investment in education and skills development enhances human capital; improved governance and stakeholder collaboration strengthen social capital; environmental rehabilitation protects natural capital; infrastructure development improves physical capital; and economic diversification enhances financial capital. Together, these interventions increase community resilience, reduce dependence on mining and improve preparedness for mine closure and economic transition.

The framework also supports South Africa's policy commitments under the National Development Plan 2030, the District Development Model, the National Infrastructure Plan 2050, the Integrated Urban Development Framework and the United Nations Sustainable Development Goals, particularly SDGs 8, 9, 11, 13 and 16.

Key Findings

The study finds that South Africa possesses a comprehensive legislative and policy framework to support sustainable mining-community development; however, implementation is constrained by fragmented governance, weak intergovernmental coordination, limited municipal capacity, inadequate monitoring of Social and Labour Plans and insufficient community participation. The findings further reveal that many mining towns remain economically dependent on mineral extraction, making them vulnerable to mine closures, commodity market fluctuations and the transition towards a low-carbon economy. Environmental degradation, deteriorating infrastructure and limited economic diversification continue to undermine long-term community resilience. Cases such as the decline of gold-mining settlements in the Free State, pollution and water stress in Emalahleni, and persistent service delivery pressures in Rustenburg demonstrate the practical consequences of weak policy implementation and overdependence on mining. The study concludes that sustainable revitalisation requires integrated governance, stronger institutional collaboration, effective policy implementation, economic diversification, environmental rehabilitation, inclusive stakeholder participation and improved municipal planning.

The analysis demonstrates that the revitalisation of mining towns in South Africa cannot be achieved through isolated interventions or short-term social investment initiatives. Rather, it requires a coordinated policy and governance approach that addresses the structural legacies of extractive development, including spatial inequality, weak municipal capacity, environmental degradation, unemployment and overdependence on mining activity. The study confirms that many mining towns remain trapped in a cycle of extraction without transformation, where the economic benefits of mining are not sufficiently translated into durable local development outcomes.

A central finding is that South Africa possesses an extensive policy and legislative framework for mining-community development, but implementation remains fragmented and uneven. Instruments such as the Mineral and Petroleum Resources Development Act, the Mining Charter, Social and Labour Plans, the National Development Plan 2030, the District Development Model, SPLUMA and the National Infrastructure Plan 2050 provide a strong normative basis for sustainable development. However, the study finds that these frameworks are often poorly aligned in practice, with weak coordination between national departments, provincial authorities, municipalities and mining companies. As a result, development interventions are frequently duplicated, delayed or disconnected from local priorities.

The study further finds that municipal governance is one of the most significant constraints to mining-town revitalisation. Many municipalities hosting mining operations face declining revenue bases, inadequate technical capacity, poor infrastructure maintenance and limited planning capability. These weaknesses undermine the effective delivery of basic services, the enforcement of land-use planning, and the implementation of integrated development strategies. In several mining towns, local government institutions are unable to manage the rapid social and spatial changes associated with mining expansion or mine closure, leaving communities vulnerable to economic decline and service deterioration.

Another key finding is that Social and Labour Plans have not consistently delivered the intended developmental outcomes. Although SLPs are designed to promote local economic development, skills development and community upliftment, their implementation is often characterised by weak monitoring, limited community participation and insufficient alignment with municipal development plans. In many cases, SLP projects are short-term, fragmented and poorly integrated into broader local economic diversification strategies. This limits their sustainability and reduces their long-term developmental impact.

The study also finds that mining companies continue to play a central but underutilised role in local development. While some firms have made meaningful contributions through infrastructure investment, community programmes and rehabilitation initiatives, these efforts are often not embedded within a broader territorial development framework. Corporate social investment and environmental rehabilitation programmes are most effective when they are coordinated with public planning systems and local economic strategies. Without such coordination, company-led interventions risk remaining isolated and temporary.

Environmental degradation emerges as another major finding. Mining towns frequently experience land disturbance, water contamination, air pollution and abandoned infrastructure, all of which constrain future land use and community wellbeing. The study finds that environmental rehabilitation is often delayed or inadequately funded, particularly in areas affected by mine closure or declining production. This creates long-term ecological liabilities and limits the potential for post-mining land redevelopment, agricultural use or alternative economic activity.

The research further shows that economic diversification remains one of the most urgent but least realised priorities in mining towns. Many local economies remain heavily dependent on a single mine or a narrow cluster of mining-related activities. This dependence exposes communities to severe shocks when commodity prices fall, operations are scaled down or mines close. The absence of strong support for small business development, agro-processing, tourism, manufacturing and service-sector growth means that many mining towns struggle to transition into resilient post-extraction economies.

A further finding is that community participation in planning and decision-making remains limited. Although policy frameworks emphasise consultation and stakeholder engagement, local communities often have little influence over the design, implementation and monitoring of development initiatives. This weakens accountability and reduces the legitimacy of interventions. The study finds that more inclusive participatory mechanisms are needed to ensure that development priorities reflect local needs, especially those of women, youth, informal workers and historically marginalised groups.

The study also highlights the importance of the just transition agenda for mining towns. As South Africa moves toward a lower-carbon economy, mining-dependent communities face new risks related to job losses, reduced investment and changing industrial demand. However, the transition also presents opportunities for reskilling, renewable energy development, land rehabilitation and new forms of local enterprise. The key finding is that these opportunities will only be realised if transition planning is explicitly linked to local economic diversification and community resilience strategies.

Practical Recommendations

Based on the findings of the study, several practical recommendations are proposed to support the sustainable revitalisation of mining towns in South Africa.

Strengthen policy coordination and institutional alignment

National government should establish a formal interdepartmental coordination mechanism dedicated to mining-town revitalisation. This mechanism should align the work of the Department of Mineral Resources and Energy, the Department of Cooperative Governance, the Department of Human Settlements, the Department of Public Works and Infrastructure, the Department of Trade, Industry and Competition, and provincial and local authorities. Such coordination should ensure that mining-related development initiatives are integrated into municipal integrated development plans, spatial development frameworks and infrastructure investment programmes.

Improve municipal capacity and governance

Municipalities hosting mining operations should receive targeted technical and financial support to strengthen planning, infrastructure management, land-use regulation and service delivery. Capacity-building programmes should focus on project management, spatial planning, environmental governance, revenue enhancement and stakeholder engagement. Where municipalities are severely constrained, provincial and national support interventions should be activated to prevent governance collapse and service deterioration.

Reform the implementation of Social and Labour Plans

Social and Labour Plans should be redesigned and monitored as strategic local development instruments rather than compliance documents. Mining companies should be required to align SLP projects with municipal development priorities and measurable socio-economic outcomes. Independent monitoring systems should be introduced to assess project quality, community impact and long-term sustainability. Community participation should be mandatory throughout the planning, implementation and evaluation phases.

Promote economic diversification in mining towns

Government and mining companies should jointly invest in local economic diversification strategies that reduce dependence on extraction. Priority sectors may include agro-processing, logistics, renewable energy, construction, tourism, manufacturing, waste recycling and small enterprise development. Local procurement policies, supplier development programmes and enterprise incubation initiatives should be expanded to support the growth of non-mining businesses and create sustainable employment opportunities.

Integrate environmental rehabilitation with post-mining development

Environmental rehabilitation should be treated as a development opportunity rather than a compliance burden. Mine closure plans should include clear post-mining land-use strategies that support agriculture, housing, conservation, renewable energy or industrial redevelopment where appropriate. Rehabilitation funding should be ring-fenced and monitored to ensure that degraded land is restored in a timely and effective manner. Environmental restoration should be linked to local job creation and skills development.

Expand community participation and social accountability

Mining-town revitalisation strategies should be developed through inclusive participatory processes involving communities, traditional leaders, civil society organisations, youth groups, women's organisations and local businesses. Community forums, participatory planning workshops and grievance mechanisms should be institutionalised to improve transparency and accountability. Special attention should be given to the inclusion of vulnerable and historically marginalised groups in decision-making processes.

Align just transition planning with local development needs

The just transition agenda should be operationalised at the local level through targeted reskilling, labour market transition support and investment in alternative livelihoods. Workers affected by mine restructuring or closure should have access to training in emerging sectors such as renewable energy, environmental management, construction, digital services and small enterprise development. Transition planning should be place-based and responsive to the specific economic conditions of each mining town.

Establish a mining-town revitalisation framework

A dedicated national framework for mining-town revitalisation should be developed to guide policy implementation across all mining regions. This framework should define roles and responsibilities, set measurable development indicators, establish funding mechanisms and provide guidance on coordination between public institutions, mining companies and communities. The framework should also include monitoring and evaluation tools to track progress over time and support evidence-based decision-making.

Support research, data collection and knowledge sharing

Government and academic institutions should invest in longitudinal research and data systems that track the socio-economic, environmental and governance conditions of mining towns. Reliable data is essential for planning, monitoring and policy adjustment. Comparative studies across different mining towns should be encouraged to identify best practices and context-specific solutions. Knowledge-sharing platforms should be created to disseminate lessons learned and successful revitalisation models.

Encourage responsible mining and ESG compliance

Mining companies should embed Environmental, Social and Governance principles into their operational and closure strategies. Responsible mining should include transparent reporting, community engagement, environmental stewardship and long-term social investment. Companies should move beyond philanthropic interventions and adopt shared-value approaches that contribute to durable local development and post-mining resilience.

In summary, the revitalisation of mining towns requires a deliberate shift from fragmented intervention to integrated development planning. The recommendations advanced in this study are intended to support policymakers, municipalities, mining companies and communities in building inclusive, resilient and sustainable mining towns that can thrive beyond extraction.

Literature Review

Overview of mining towns and their economic importance

Mining towns are crucial to the South African economy due to their substantial contributions to employment generation, export revenues, infrastructural advancement, and industrialisation (Blaauw & Pretorius, 2023). Following the discovery of diamonds in Kimberley in 1867 and gold on the Witwatersrand in 1886, mining has significantly influenced the nation's metropolitan topography, labour arrangements, and economic development. Towns like Rustenburg, Emalahleni, Welkom, and Postmasburg developed mainly due to mineral extraction operations, including platinum, coal, gold, iron ore, and manganese.

The mining industry remains a crucial component of South Africa's economy. The Minerals Council South Africa states that the sector contributes roughly 7–8% directly to national GDP and sustains hundreds of thousands of employment in mining regions. Mining towns serve as both production centers and locales where economic survival, migration, housing, and governance converge (Department of Human Settlements South Africa, 2015). Nonetheless, despite their economic significance, numerous mining towns continue to be marked by poverty, declining infrastructure, unemployment, environmental degradation, and social inequality (Marais, Nel & Donaldson, 2019).

Research further indicates that numerous mining communities are economically precarious due to their reliance on a singular commodity. When commodity prices diminish or mines cease operations, these towns undergo economic collapse, rising unemployment, and urban deterioration. Meggersee and Guvuriro (2023) contend that tiny mining towns in South Africa are particularly vulnerable to economic shocks due to a lack of diversification in local economies. This trend exemplifies what Evolutionary Governance Theory refers to as "path dependency," wherein historical economic frameworks persist in influencing contemporary governance results. In South Africa, mining towns frequently encounter difficulties in evolving into diverse and sustainable economies following declines in mining activities.

International scholarship similarly underscores the volatile developmental characteristics of extractive economies. Provenzano and Bull (2021) contend that mining operations initially catalyse swift urban expansion; nevertheless, the long-term viability is questionable when governance structures do not diversify local economies. Bettencourt and Marchio (2023) illustrate that resource-dependent towns in Sub-Saharan Africa frequently encounter uneven development, informality, and infrastructure strain due to governance institutions lagging behind fast urbanisation.

The Spatial Legacy of Apartheid and the Migrant Labour System

The physical configuration of South African mining communities necessitates an analysis of apartheid and the migrant labour system. During apartheid, mining towns were intentionally constructed to perpetuate racial segregation and economic exploitation. White labourers resided in affluent areas characterised by superior housing and amenities, whilst Black mine workers were relegated to congested hostels, compounds, and marginalised communities with inadequate living circumstances. This racially biased spatial design established the basis for modern inequality in mining areas (Marais, Nel & Donaldson, 2019).

The migrant worker system constituted the foundation of the South African mining sector. Black labourers were enlisted from rural South Africa and adjacent nations, including Lesotho, Mozambique, and Malawi, to supply inexpensive labour for mining operations. Labourers were estranged from their families and accommodated in gender-segregated dormitories governed by stringent control mechanisms. The government and mining corporations employed land expropriation and labour laws to compel Black South Africans into wage labour. These arrangements established persistent patterns of social instability, disjointed families, and economic reliance in both mining cities and labor-sending rural regions (Blaauw & Pretorius, 2023).

Post-1994, numerous apartheid spatial patterns continued to endure. Informal settlements persistently expanded on the outskirts of mining towns due to the inadequacy of democratic reforms in completely addressing historical injustices. Research conducted by Marais, Nel, and Donaldson (2019) indicates that post-apartheid urban sprawl and housing crises are intricately connected to past route dependencies established by apartheid planning systems and mining labour practices.

The continuation of "economic apartheid" in post-1994 South Africa has been emphasised in popular discourse and academic discourses. Elevated unemployment rates, poverty, and inequitable access to services persist in traditionally marginalised Black areas next to mining operations. This illustrates the gradual evolution of governance systems, which are significantly shaped by previous institutional arrangements, in accordance with Evolutionary Governance Theory.

Globally, research conducted by the World Bank (2021) and UN-Habitat (2020) reveals that resource-dependent communities in the Global South often suffer from enduring spatial exclusion and infrastructural disparity as a result of inadequate governance adaptation.

Expansion of Informal Settlements in Mining Areas

A prominent effect of mining-induced urbanisation in South Africa has been the swift proliferation of informal communities surrounding mining cities. The proliferation of mining operations draws significant numbers of job seekers, contract labourers, and migrants seeking employment possibilities. Nonetheless, governments and mining corporations have predominantly neglected to furnish sufficient housing and infrastructure to support this demographic expansion. Consequently, informal communities persist in developing around significant mining regions (Donaldson, Marais & Mbonane, 2018).

In platinum-producing areas like Marikana and Rustenburg, informal communities proliferated swiftly during mining booms. Research in Postmasburg revealed that mining businesses indirectly fostered the expansion of informal settlements by generating job expectations while increasingly depending on contract labour arrangements. The research revealed that local municipalities were deficient in efficient planning procedures, resulting in significant social disruption and insufficient service delivery for residents of informal settlements (Donaldson, Marais & Mbonane, 2018).

Data demonstrates the gravity of the issue. By 2020, an estimated 23% of South Africans, equating to between 1.3 and 1.4 million families, resided in informal settlements lacking sufficient infrastructure or services (UN-Habitat, 2020). Mining regions constitute some of the most rapidly expanding informal settlement areas due to ongoing worker mobility and housing deficiencies.

The proliferation of informal settlements is linked to overarching governance deficiencies, such as insufficient municipal capacity, corruption, inappropriate spatial planning, and ineffective implementation of housing mandates under mining legislation. Informal communities are often marked by congestion, unemployment, inadequate sanitation, precarious land tenure, and increased crime rates. In many desolate mining areas, economic deterioration has fostered illegal mining economies and organised criminal syndicates (World Bank, 2021).

The international scholarship corroborates these conclusions. According to UN-Habitat (2020), quickly urbanising mining towns in Africa often face significant infrastructural deficiencies and informal housing proliferation due to ineffective governance systems in addressing migration pressures. Bettencourt and Marchio (2023) contend that informal urbanisation in Sub-Saharan Africa exemplifies overarching structural inequities and disparate access to infrastructure and public services.

From the perspective of Evolutionary Governance Theory, informal settlements in mining towns should be regarded not solely as unlawful areas, but as adaptive reactions to changing economic and governance conditions. These communities arise because to the inability of governance structures to adapt concurrently with mining-induced urbanisation and labour migration. Thus, informal settlements serve as indicators of governance failure and as survival strategies for economically marginalised groups.

Harmonising MPRDA Responsibilities with Housing Policy Development

A significant governance issue in South Africa's mining areas is the disparity between mining legislation and the execution of housing policies. The Mineral and Petroleum Resources Development Act mandates mining companies to support social and economic development via Social and Labour Plans (SLPs), whereas the Breaking New Ground framework aims to foster sustainable human settlements (Republic of South Africa, 2002; Department of Human Settlements South Africa, 2004). Nonetheless, these policy frameworks frequently function autonomously, leading to disjointed developmental results.

Mining firms have often focused output and profitability over long-term settlement strategies (Minerals Council South Africa, 2023). Despite investments by certain mining companies in staff housing and infrastructure, numerous communities next to mining operations still face significant housing shortages and inadequate living circumstances (Donaldson, Marais & Mbonane, 2018). Investigations into mining towns like Marikana reveal that insufficient cooperation among mining corporations, local municipalities, and the national government has considerably exacerbated the proliferation of informal settlements and the inadequacy of service provision (HSRC, 2022).

An evolutionary governance framework posits that governing systems must co-evolve (Van Assche et al., 2020). Housing policy and mining regulation should be institutionally unified to guarantee that mining development directly facilitates sustainable settlement planning. This necessitates the alignment of Social and Labour Plans with municipal Integrated Development Plans (IDPs), spatial planning frameworks, and national housing policies (Department of Mineral Resources and Energy South Africa, 2023).

Moreover, mining corporations must to be mandated by law to engage in long-term urban sustainability planning instead of merely undertaking short-term corporate social responsibility initiatives. This alignment would foster cohesive government structures that can simultaneously tackle housing, infrastructure, and social development (Kemp, Parto & Gibson, 2005).

Institutionalising Incremental Upgrading of Informal Settlements

Informal settlements in mining towns are sometimes regarded as transient or unlawful areas rather than integral elements of developing metropolitan systems. Evolutionary Governance Theory contests this viewpoint by acknowledging informal settlements as adaptive solutions to governance deficiencies, labour migration, and housing shortages (Scott, 2015).

Institutionalising incremental informal settlement upgrading entails implementing gradual, phased enhancement measures instead than depending exclusively on displacement programs. Relocation plans in numerous South African mining communities have been unsuccessful due to their disruption of livelihoods, social networks, and access to economic possibilities (Yeboah & Appiah-Yeboah, 2009). Incremental upgrading facilitates the steady enhancement of settlements by the provision of essential services, infrastructure, land tenure security, and community engagement (Department of Human Settlements South Africa, 2004).

Statistics South Africa reports that over 25% of urban households reside in informal settlements or substandard housing conditions (Statistics South Africa, 2022). Mining locations continue to be significantly impacted by ongoing workforce movement and inadequate formal housing availability (World Bank, 2021). Incremental upgrading thus constitutes a pragmatic and sustainable governance approach.

An evolutionary governance framework underscores the significance of participatory governance. Communities residing in informal settlements ought to participate in the planning and decision-making processes related to upgrading programs. Community engagement bolsters institutional legitimacy, strengthens local accountability, and guarantees that development initiatives align with local realities and goals (Boonstra & de Roo, 2017).

Incremental upgrades must also encompass infrastructure resilience, environmental sustainability, and safety considerations. Incorporating ideas like Crime Prevention Through Environmental Design can enhance community safety, social cohesion, and public confidence in governance institutions (Kemp, Parto & Gibson, 2005).

Enhancing Oversight of Social and Labour Plans

Social and Labour Plans (SLPs) were established under the Mineral and Petroleum Resources Development Act to guarantee that mining operations significantly contribute to local socio-economic development (Republic of South Africa, 2002). Nonetheless, the execution and oversight of SLPs have persisted in being inadequate throughout numerous mining areas (Department of Mineral Resources and Energy South Africa, 2023). Many mining villages persist in facing substandard housing, unemployment, insufficient infrastructure, and social marginalisation, despite significant mining income (HSRC, 2022).

A significant governance deficiency has been the lack of transparent monitoring and accountability mechanisms. Municipalities frequently lack the requisite technical competence and financial resources for effective compliance monitoring, whilst mining firms can regard Social and Labour Plans (SLPs) as mere procedural obligations rather than genuine developmental commitments (Marais, Nel & Donaldson, 2019).

An evolutionary governance framework underscores ongoing institutional learning and accountability (Evers & de Vries, 2019). Consequently, monitoring systems must transition from compliance auditing to developmental evaluation frameworks that evaluate the genuine social impact of mining operations. Independent oversight entities, community monitoring forums, and transparent reporting mechanisms must be institutionalised to enhance accountability (Van Assche et al., 2020).

Enhanced monitoring methods would diminish corruption and foster confidence among mining communities, municipalities, and mining enterprises. Public access to SLP implementation updates, housing promises, and infrastructure delivery targets may enhance democratic participation and bolster governance legitimacy (Department of Mineral Resources and Energy South Africa, 2023).

Moreover, monitoring systems ought to be dynamic rather than fixed. Governance institutions must consistently update monitoring indicators in response to evolving settlement conditions, environmental pressures, and socio-economic realities (Scott, 2015).

Revitalisation of Mining Towns (Section II)

Integrated Revitalisation Strategies

The revitalisation of South Africa's mining towns necessitates cohesive governance solutions that can concurrently tackle housing deficiencies, spatial disparities, infrastructure deterioration, the proliferation of informal settlements, and socio-economic marginalisation (Marais, Nel & Donaldson, 2019). Informed by Evolutionary Governance Theory, comprehensive revitalisation strategies ought to enhance institutional coordination, adaptive governance, and collaborative development among government entities, mining corporations, communities, and private stakeholders (Scott, 2015; Van Assche, Beunen & Duineveld, 2014). Sustainable mining towns cannot develop through isolated measures; rather, they necessitate cohesive policy frameworks that adapt to evolving social, economic, and environmental conditions (Evers & de Vries, 2019).

Harmonising BNG, MPRDA, and UISP

A significant governance deficiency in South Africa's mining areas is the disjunction of housing policy, mining legislation, and informal settlement enhancement frameworks. The Breaking New Ground policy seeks to advance sustainable human settlements, whereas the Mineral and Petroleum Resources Development Act mandates mining companies to support socio-economic development via Social and Labour Plans (SLPs) (Republic of South Africa, 2002; Department of Human Settlements South Africa, 2004). The Upgrading of Informal Settlements Programme (UISP) aims to enhance living conditions in informal settlements using gradual upgrading strategies (Department of Human Settlements South Africa, 2004).

Nonetheless, these frameworks often function autonomously, leading to redundant duties, policy discrepancies, and suboptimal developmental results (COGTA, 2022). In numerous mining towns, governments face challenges in reconciling mining-driven economic growth with housing provision and infrastructure development, resulting in unregulated settlement proliferation and service delivery deficits (HSRC, 2022).

An integrated revitalisation strategy necessitates institutional alignment among BNG, MPRDA, and UISP implementation procedures. Social and Labour Plans must be incorporated into municipal Integrated Development Plans (IDPs), spatial development frameworks, and informal settlement upgrading initiatives (Department of Mineral Resources and Energy South Africa, 2023). This alignment would enhance cohesive settlement planning, synchronised infrastructure investment, and augmented accountability measures.

Evolutionary Governance Theory posits that governance systems should co-evolve through interaction and policy learning instead of functioning as isolated entities (Van Assche et al., 2020). Integrated governance frameworks are crucial for fostering long-term sustainability in mining communities.

Public-Private Partnerships (PPP)

Public-private partnerships (PPPs) continue to be crucial mechanisms for financing and executing infrastructure development, housing initiatives, and urban revitalisation projects in mining areas (Miraftab, 2004). Due to the financial and institutional constraints encountered by numerous localities, coordination between government entities and mining corporations has become essential for enhancing roadways, water systems, sanitation, electrical infrastructure, and housing provision (Turok, 2014).

Mining corporations bring substantial economic resources and technological skills that can enhance local development projects. Nonetheless, public-private partnerships in mining towns have frequently faced criticism for favouring corporate interests at the expense of community need (Miraftab, 2004). In several instances, mining corporations have prioritised short-term corporate social responsibility initiatives over sustainable community development (Donaldson, Marais & Mbonane, 2018).

An evolutionary governance approach posits that public-private partnerships (PPPs) ought to transcend transactional frameworks in favour of collaborative governance partnerships founded on accountability, transparency, and long-term planning (Kemp, Parto & Gibson, 2005). Municipalities, mining corporations, communities, and civil society organisations must collaboratively engage in planning procedures to ensure that revitalisation programs reflect local socio-economic conditions.

Effective public-private partnerships (PPPs) can substantially enhance economic diversification, infrastructure resilience, job creation, and social cohesion in mining communities (World Bank, 2021). Such collaborations are especially crucial in economically precarious mining municipalities undergoing swift urbanisation and financial limitations.

Community Engagement and Collaborative Safety Production

Community engagement serves as a fundamental component of sustainable revitalisation in mining towns. Historically, mining communities have frequently been marginalised in decision-making processes related to housing, infrastructure development, and local economic planning (Bénit-Gbaffou, 2018). This marginalisation has fostered distrust among communities, governments, and mining firms, especially in regions marked by informal settlements, inadequate service delivery, and unemployment (HSRC, 2022).

Consequently, integrated revitalisation initiatives should emphasise democratic governance and the collaborative creation of safety. Community engagement boosts the legitimacy of governance, fortifies responsibility, and increases the efficacy of developmental initiatives (Boonstra & de Roo, 2017). Residents hold critical local insights concerning settlement requirements, infrastructure priorities, safety hazards, and social issues.

The co-production of safety entails collaborative collaborations among communities, local government, law enforcement agencies, and mining stakeholders to tackle crime, violence, and social instability in mining settlements. Informal settlements in mining towns are often linked to illegal mining, organised crime, substance misuse, and social unrest, stemming from socio-economic marginalisation and ineffective governance (Donaldson, Marais & Mbonane, 2018).

Participatory governance tools, including ward committees, community forums, public consultations, and participatory budgeting, can enhance democratic accountability and foster social trust (Bénit-Gbaffou, 2018). From an evolutionary governance standpoint, inclusive participation facilitates the adaptability of governance institutions to evolving settlement dynamics and community priorities (Scott, 2015).

Investment in Infrastructure and Spatial Planning

Infrastructure deficiencies persist as one of the most critical developmental obstacles facing South Africa's mining towns. Accelerated urbanisation, ageing infrastructure, insufficient municipal capacity, and inadequate investment have led to water shortages, electricity instability, failing roads, poor sanitation, and environmental deterioration (COGTA, 2022).

Consequently, integrated revitalisation schemes necessitate significant investment in both physical and social infrastructure. Infrastructure planning must prioritise not only economic productivity but also the enhancement of living circumstances, the reduction of inequality, and the strengthening of urban resilience (World Bank, 2021). Efficient spatial planning is crucial for confronting the enduring legacy of apartheid that persistently influence settlement patterns in mining areas (Turok, 2014).

Spatial planning improvements ought to encourage cohesive human settlements instead of disjointed urban sprawl. This entails situating housing constructions nearer to economic possibilities, enhancing public transport connectivity, and curtailing the expansion of peripheral informal settlements (Department of Human Settlements South Africa, 2004).

An evolutionary governance framework underscores the necessity for adaptive spatial planning systems that can effectively respond to population changes, labour mobility, and economic transitions (Van Assche et al., 2020). Municipal planning institutions should embrace adaptable planning models that reflect evolving urban conditions instead of depending exclusively on inflexible master plans (Boonstra & de Roo, 2017).

Investment in infrastructure is crucial for the economic diversification of mining communities. Excessive reliance on mining operations renders localities susceptible to commodity volatility and mine shutdowns (Marais, Nel & Donaldson, 2019). Diverse infrastructure systems can facilitate alternative sectors, local entrepreneurship, and sustainable urban growth.

Implementation of CPTED for Enhanced Settlement Safety

The implementation of Crime Prevention Through Environmental Design principles can substantially enhance safety and social harmony in mining communities. Mining towns and informal settlements often encounter elevated crime rates, violence, illicit mining operations, and social disarray, attributable to unemployment, overcrowding, poverty, and insufficient urban planning (HSRC, 2022).

CPTED advocates for crime prevention by enhanced environmental and spatial design. Strategies encompass enhanced street illumination, delineated pedestrian routes, increased visibility, access regulation, public space administration, and the establishment of vibrant community areas. These initiatives can diminish chances for criminal conduct while enhancing people' sense of ownership and territorial authority.

Poor spatial layouts, insufficient illumination, congestion, and inadequate public infrastructure in informal settlements can exacerbate insecurity and diminish policing efficacy (Yeboah & Appiah-Yeboah, 2009). Incorporating CPTED ideas into informal settlement enhancement and housing development initiatives can therefore enhance community safety results.

Evolutionary government Theory advocates for adaptive urban safety strategies that amalgamate environmental planning with social development and democratic government (Scott, 2015). Secure communities necessitate governance frameworks that can perpetually adapt to evolving crime trends, urban development dynamics, and community experiences (Evers & de Vries, 2019).

Integrated revitalisation initiatives must ultimately acknowledge mining towns as dynamic governance environments influenced by economic shifts, spatial changes, institutional adjustments, and community involvement. Sustainable revitalisation relies on cohesive policy integration, collaborative governance, infrastructure investment, and adaptive planning systems that can address the intricate reality of mining settlements in South Africa.

Informal Settlement Upgrading (Section III)

Causes of Informal Settlement Growth in Mining Towns

The rapid proliferation of informal settlements in South African mining towns is closely linked to historical inequalities, labour migration, insufficient spatial planning, and the ineffectiveness of governmental institutions in tackling urbanisation issues (Donaldson, Marais & Mbonane, 2018; World Bank, 2021). Mining operations attract many job candidates from rural South Africa and neighbouring countries, as these regions are perceived as centers of economic opportunity (Marais, Nel & Donaldson, 2019). Nonetheless, governments and mining corporations have mostly failed to provide adequate housing and infrastructure to accommodate this population growth (Adebayo, 2014). Consequently, informal settlements have become notable features of various mining towns, particularly in areas such as Rustenburg, Marikana, Emalahleni, and Welkom.

Mining towns were deliberately constructed during apartheid to promote temporary migrant labour rather than permanent settlement (Huchzermeyer, 2011). Black mine labourers inhabited in hostels and complexes, whilst their families remained in rural labor-sending areas. Following 1994, the decline of the dormitory system and increased worker mobility enabled rapid settlement expansion in proximity to mining operations (Tissington, 2011). However, democratic housing delivery systems did not keep pace with urban migration and population growth, leading to the proliferation of informal settlements (Department of Human Settlements South Africa, 2004).

From the perspective of Evolutionary Governance Theory, informal settlements represent adaptive responses to evolving governance and economic conditions (Scott, 2015; Van Assche, Beunen & Duineveld, 2014). Governance institutions often lag behind mining-induced urbanisation, resulting in institutional shortcomings in housing delivery, infrastructure provision, and spatial planning (Evers & de Vries, 2019). Informal settlements emerge not just from poverty but also from fragmented governance, policy delays, and insufficient coordination among municipalities, mining corporations, and national government agencies (HSRC, 2022).

Mining enterprises have indirectly contributed to the proliferation of informal settlements by increasingly relying on contract work arrangements rather than providing formal employee housing (Minerals Council South Africa, 2023). A significant number of contract workers receive housing allowances insufficient for participation in traditional housing markets, forcing them to live in informal settlements next to mining operations (Donaldson, Marais & Mbonane, 2018). This has intensified overcrowding and increased strain on already burdened municipal services.

Residential Conditions and Socio-Economic Vulnerabilities

Living conditions in informal settlements next to mining towns are often characterised by considerable deprivation, overcrowding, and social instability (UN-Habitat, 2020). Residents frequently inhabit temporary structures made of corrugated iron, wood, plastic, and other transient materials that provide inadequate protection from extreme weather, fire hazards, and environmental risks (Yeboah & Appiah-Yeboah, 2009).

Many households lack secure land tenure and are vulnerable to eviction or displacement (Huchzermeyer, 2011). Overcrowding often transpires, particularly in regions populated by migrant labourers and unemployed individuals in search of work. Insufficient infrastructure results in detrimental health effects, environmental deterioration, and heightened civil unrest (World Bank, 2021).

The socio-economic vulnerabilities of informal mining communities are intensified by high unemployment rates, poverty, inequality, and limited access to education and healthcare services (Statistics South Africa, 2022). Notwithstanding the substantial wealth produced by mining operations, the economic benefits are inequitably distributed, resulting in the marginalisation of many surrounding communities (Marais, Nel & Donaldson, 2019). This duality has resulted in heightened discontent, labour unrest, and distrust towards governmental institutions and mining corporations (HSRC, 2022).

Statistics South Africa indicates that millions of urban residents continue to live in informal settlements with inadequate access to critical amenities (Statistics South Africa, 2022). Mining municipalities are profoundly affected by increasing urbanisation and housing limitations. Informal settlements in mining areas frequently face:

- Increased young unemployment Nutritional deficiency.
- Substance abuse.
- Gender-based violence.
- Limited healthcare access.
- Exclusion from educational opportunities.

Women and children are particularly vulnerable in these situations due to inadequate sanitation, perilous living conditions, and limited social support systems (UN-Habitat, 2020). Informal settlements expose populations to environmental hazards, such as contaminated water, dust emissions, mining waste pollution, and flood risks (World Bank, 2021).

Evolutionary Governance Theory asserts that these vulnerabilities persist when governance institutions fail to appropriately adapt to changing demographic and socio-economic situations (Van Assche et al., 2020). Institutional rigidity and fragmented planning thus sustain poverty and marginalisation in mining areas (Scott, 2015).

In-Situ Upgrading vs Relocation Strategies

A significant issue in the regulation of informal settlements is the contention regarding the relocation of communities against their renovation in situ (Misselhorn, 2008). Historically, several governments utilised relocation strategies to dismantle informal settlements and resettle residents into formal housing developments (Huchzermeyer, 2011). Relocation schemes in South Africa have frequently been condemned for jeopardising livelihoods, increasing transportation costs, dismantling social networks, and relocating communities away from economic opportunities (Tissington, 2011).

Conversely, in-situ upgrading focuses on improving informal communities while residents remain in their current places. This plan involves the gradual provision of water, sanitation, energy, infrastructure, drainage systems, waste management, and housing improvements without displacing communities (Department of Human Settlements South Africa, 2004). The improvement process often occurs incrementally and requires community participation in both planning and implementation (Bénit-Gbaffou, 2018).

The South African Informal Settlement Upgrading Programme (UISP) designates in-situ upgrading as the optimal developmental approach, as it promotes social inclusion, reduces displacement, and strengthens community stability (Republic of South Africa, 2004). From an evolutionary governance perspective, in-situ upgrading illustrates adaptive governance by acknowledging informal settlements as dynamic urban systems rather as ephemeral illegal zones (Boonstra & de Roo, 2017).

Relocation options may remain crucial in areas susceptible to substantial environmental threats, such as flooding, sinkholes, or hazardous mining sites. Coerced displacement often provokes resistance and social unrest when communities are excluded from decision-making processes (Misselhorn, 2008).

In-situ upgrading generally corresponds more closely with the principles of sustainable human habitation due to its capacity to:

- Preserve social networks and uphold livelihoods.
- Enhance tenure security.
- Augment institutional legitimacy.
- Promote participatory governance.
- Alleviate societal upheaval.

Evolutionary Governance Theory emphasises that successful progress depends on continuous engagement among communities, municipalities, mining companies, and governance institutions (Evers & de Vries, 2019). Governance systems must therefore remain flexible and responsive throughout the improvement process (Van Assche et al., 2020).

Challenges in Service Delivery (Water, Sanitation, Electricity)

Inadequacies in service delivery remain a major issue facing informal populations in mining towns (HSRC, 2022). The rapid increase in population and lack of planning have burdened municipal infrastructure, resulting in insufficient access to water, sanitation, energy, transportation, and waste management services (COGTA, 2022).

Water scarcity is widespread in various mining communities, where residents rely on communal faucets, water tankers, or polluted water sources (World Bank, 2021). Limited access to water intensifies poor hygiene and increases vulnerability to disease outbreaks. Sanitation challenges are considerable, as many households depend on pit latrines, communal toilets, or open defecation owing to inadequate infrastructure (UN-Habitat, 2020).

Electricity interruptions negatively affect daily living conditions and community safety. Unregulated electrical connections are common and often result in fires, electrocutions, and infrastructure damage (Statistics South Africa, 2022). A multitude of households relies on paraffin, candles, and wood for cooking and lighting, exacerbating environmental and health risks.

The gaps in service delivery reveal significant governance failures within mining municipalities. Municipalities frequently face:

- Fiscal constraints.
- Insufficient maintenance of infrastructure.
- Administrative inefficacy.
- Corruption and maladministration.
- Limited spatial planning proficiency.

The expansion of informal settlements, along with insufficient infrastructure investment, intensifies the pressure on already overtaxed municipal institutions (HSRC, 2022). In several mining towns, people have responded to inadequate service delivery with protests, demonstrations, and labour unrest (Bénit-Gbaffou, 2018).

The Breaking New Ground initiative emphasises the significance of integrated sustainable human settlements and improved access to essential services (Department of Human Settlements South Africa, 2004). However, implementation challenges and insufficient institutional coordination continue to impede advancement in mining areas.

Evolutionary Governance Theory asserts that crises in service delivery occur when governance institutions fail to adjust institutionally to rapid urban transformation (Scott, 2015). Sustainable development requires adaptive planning frameworks capable of anticipating demographic growth and infrastructure needs (Van Assche, Beunen & Duineveld, 2014).

Implications for Security and Law Enforcement

Informal settlements in mining towns present significant security and enforcement challenges due to high population density, unemployment, poverty, inadequate infrastructure, and little government presence (Donaldson, Marais & Mbonane, 2018). Poorly constructed settlement layouts, inadequate street lighting, overcrowding, and limited road access create an environment conducive to criminal activity and societal unrest (World Bank, 2021). Many informal mining settlements see increased levels of:

- Aggravated offence.
- Drug trafficking and substance abuse.
- Unlawful mineral extraction.
- Gender-based violence.
- Theft and breaking and entering.
- Organized criminal syndicates.

Illegal mining syndicates operating in both abandoned and active mining sites have become significant security concerns in certain mining areas (Marais, Nel & Donaldson, 2019). Illicit economies are often linked to unemployment, poverty, and inefficient governmental frameworks (HSRC, 2022).

The regulation of informal settlements is intensified by inadequate infrastructure and a deficit of trust between inhabitants and law enforcement agencies (Bénit-Gbaffou, 2018). Limited access routes, unregulated residential layouts, and insufficient visibility impede police entry and the efficacy of emergency responses. Lack of trust in law enforcement agencies within the community may impede criminal reporting and cooperation.

From an evolutionary governance perspective, security challenges in informal settlements cannot be addressed solely through traditional enforcement strategies (Scott, 2015). Crime and insecurity are closely associated with broader socio-economic and governance issues. Effective crime prevention requires comprehensive development strategies that simultaneously address housing, employment, infrastructure, social inclusion, and the legitimacy of governance (Van Assche et al., 2020).

Implementing Crime Prevention Through Environmental Design principles can significantly improve safety in regenerated communities. Effective lighting, accessible pathways, common spaces, recreational facilities, and thoughtfully planned urban layouts can reduce opportunities for criminal activity and boost community cohesion.

The sustainable enhancement of informal settlements in mining towns requires governance structures capable of jointly adapting to changing social, economic, and spatial conditions (Evers & de Vries, 2019). Without integrated upgrading programs, informal settlements would continue to perpetuate cycles of poverty, exclusion, insecurity, and governance instability.

Mining Housing Standards

Evolution from Hostels to Family Housing

The evolution of mining housing in South Africa exemplifies substantial political, economic, and social transformations within the country's mining sector. During the apartheid era, mining businesses extensively employed the migrant worker system to provide low-cost Black labour for mines while restricting permanent urban residency (Huchzermeyer, 2011; Marais, Nel & Donaldson, 2019). Mine workers inhabited overcrowded single-sex dorms and complexes characterised by inadequate living conditions, limited privacy, insufficient sanitation, and strict institutional supervision (Tissington, 2011).

Hostels were essential to the apartheid spatial planning system, which deliberately separated Black workers from their families and economically developed urban areas (Republic of South Africa, 2002). Labourers were recruited from rural South Africa and neighbouring countries, including Lesotho, Mozambique, and Malawi, while their families remained in the labor-sending areas. This method enabled mining businesses to diminish housing and social welfare expenditures while securing a stable worker supply (Baker & Newell, 2014).

Post-1994, there was escalating pressure on mining companies and the government to reform the hostel system and enhance living conditions (Department of Human Settlements South Africa, 2004). As a result, housing policies gradually shifted towards family housing and homeownership models. The transition from hostels to family dwelling aimed to improve dignity, stability, and cohesive human settlements (Turok, 2014).

Nevertheless, implementation has been inconsistent throughout mining regions, with numerous hostels continuing to be overcrowded and inadequately maintained, while housing allowances remain inadequate for access to formal housing (HSRC, 2022). This change, viewed through the lens of Evolutionary Governance Theory, signifies a partial institutional adaptation influenced by structural inequality and policy fragmentation (Scott, 2015; Van Assche, Beunen & Duineveld, 2014).

Existing Housing Standards in Mining Communities

Housing standards in South African mining colonies continue to be inconsistent despite post-apartheid improvements (Statistics South Africa, 2022). Although certain mining corporations have allocated resources towards formal housing, numerous communities continue to face overcrowding, substandard construction, and insufficient infrastructure (Marais, Nel & Donaldson, 2019).

Formal mining housing generally comprises brick structures, electricity, water supply, sewage facilities, and road infrastructure (Department of Human Settlements South Africa, 2004). Nonetheless, access to these standards varies markedly between permanent employees and contract workers, hence perpetuating inequality (Minerals Council South Africa, 2023).

The swift urbanisation in mining cities like Rustenburg, Marikana, and Emalahleni has exceeded housing availability, leading to the persistent expansion of informal settlements (Donaldson, Marais & Mbonane, 2018). A significant number of individuals continue to inhabit informal structures devoid of essential services (UN-Habitat, 2020).

This illustrates what Boonstra and de Roo (2017) characterise as governance systems grappling with the concept of “planning beyond the plan,” wherein fast socio-spatial transformations surpass institutional capabilities.

The Contribution of Mining Companies to Housing Development

Mining businesses are pivotal in housing provision as mining activities directly influence settlement patterns and labour migration (Marais, Nel & Donaldson, 2019). Historically, enterprises directly supplied housing via hostels; however, after

1994, their role transitioned to promoting homeownership, housing allowances, and community development projects (Republic of South Africa, 2002).

According to the Mineral and Petroleum Resources Development Act, mining corporations must contribute to socio-economic development via Social and Labour Plans (SLPs), which encompass housing obligations (Department of Mineral Resources and Energy South Africa, 2023).

Typical interventions encompass:

- Residential projects for families
- Transformations of hostels.
- Housing stipends.
- Investment in infrastructure.
- Collaborations with local governments.

Nonetheless, housing allowances frequently prove inadequate for entry into formal housing markets, resulting in persistent expansion of informal settlements (HSRC, 2022). The proliferation of contract work has exacerbated inequality in housing accessibility (Minerals Council South Africa, 2023).

From an evolutionary governance standpoint, mining firms operate as co-governance participants rather than solely economic entities, necessitating collaborative planning with municipalities and communities (Evers & de Vries, 2019).

Obligations of the Social and Labour Plan (SLP)

Social and Labour Plans (SLPs), mandated by the MPRDA, obligate mining corporations to invest in local socio-economic development, encompassing housing, infrastructure, skills enhancement, and local economic advancement (Republic of South Africa, 2002; DMRE, 2023).

Housing responsibilities encompass enhancing living conditions, renovating hostels, and promoting sustainable settlements (Department of Mineral Resources and Energy South Africa, 2023). Nonetheless, implementation significantly differs among mining locations, characterised by enduring housing backlogs and inadequate accountability mechanisms (HSRC, 2022).

The efficacy of SLPs relies on the alignment of municipal Integrated Development Plans (IDPs), mining strategies, and national housing policy frameworks, including Breaking New Ground (Department of Human Settlements South Africa, 2004).

Evolutionary Governance Theory posits that SLPs should operate as adaptive governance mechanisms instead than rigid compliance measures, necessitating ongoing institutional learning and coordination (Van Assche et al., 2020).

Challenges: Adherence, Corruption, and Insufficient Oversight

Notwithstanding legislative frameworks, the governance of mining housing encounters significant implementation issues, including inadequate compliance, corruption, and ineffective monitoring (HSRC, 2022). Municipalities frequently lack the capability to adequately oversee mining commitments (COGTA, 2022). This leads to inadequate enforcement of housing obligations and variable service delivery results (Minerals Council South Africa, 2023).

Corruption and maladministration exacerbate governance systems' fragility, resulting in the misallocation of housing funding and diminished public trust (Bénit-Gbaffou, 2018). In certain instances, SLP obligations are met only partially or symbolically, lacking measurable developmental benefit. Evolutionary Governance Theory posits that such failures arise when institutions do not change via learning, responsibility, and coordination (Scott, 2015). Effective governance necessitates:

- Transparent oversight mechanisms.
- Autonomous supervision.
- Community engagement.
- Coordinated planning between mining operations and municipal authorities.
- Perpetual organisational learning (Evers & de Vries, 2019).

In the absence of adaptive governance, mining housing systems will perpetuate inequality and the proliferation of informal settlements (Van Assche et al., 2014).

Mineral and Petroleum Resources Development Act (Mprda)

Social and Labour Plans (SLPs)

The Mineral and Petroleum Resources Development Act (MPRDA) was established to transform South Africa's mining sector by ensuring that mineral resources promote equitable socio-economic development rather than benefiting a limited elite (Republic of South Africa, 2002). The Social and Labour Plan (SLP), an essential framework instituted under the MPRDA, requires mining companies to alleviate the social and economic repercussions of their activities on impacted communities (Department of Mineral Resources and Energy South Africa, 2023).

SLPs were instituted to ensure that mining activities promote sustainable development, improve living standards, create employment opportunities, and strengthen local economic growth. Mining companies are required to submit Social and Labour Plans (SLPs) as a condition for obtaining mining rights. These plans specify responsibilities regarding:

- Residential and living conditions.
- Development of skills and training (Department of Mineral Resources and Energy South Africa, 2023).
- Regional economic development.
- Infrastructure provision.
- Community enhancement programs.
- Equity in employment and organisational transformation.

The housing and living conditions aspect became significant due to persistent critiques of inadequate accommodations for mine workers and the increase of informal settlements in mining regions (Marais, Nel, & Donaldson, 2019). The government sought to mandate mining companies to substitute obsolete dormitory systems with respectable family housing and sustainable human settlement development (Republic of South Africa, 2002).

Nonetheless, the execution of SLPs has been irregular throughout mining regions. Research in mining towns like Marikana and Rustenburg indicates persistent housing shortages, inadequate infrastructure, and socio-economic marginalisation, despite obligations outlined in the SLP (Donaldson, Marais, & Mbonane, 2018). Communities frequently contend that SLP programs inadequately correspond with local development aspirations.

From the standpoint of Evolutionary Governance Theory, SLPs serve as tools designed to facilitate co-evolution among mining activities, governance institutions, and local development systems (Evers & de Vries, 2019; Scott, 2015). Nonetheless, inadequate institutional coordination constrains their transformative effect.

Legal Responsibilities of Mining Corporations

According to the MPRDA, mining companies have substantial legal and developmental obligations to their employees, adjacent communities, and the environment (Republic of South Africa, 2002). These commitments are based on South Africa's constitutional dedication to equitable resource allocation.

Mining corporations are mandated by law to:

- Formulate and execute Social and Labour Plans Enhance housing and living circumstances for employees.
- Advocate for regional economic advancement.
- Facilitate skills enhancement and job opportunities.
- Minimise environmental deterioration.
- Engage impacted communities.

Facilitate infrastructure advancement (Department of Mineral Resources and Energy South Africa, 2023)

The Mining Charter reinforces these commitments by promoting change, Black economic empowerment, and inclusive involvement within the mining industry (Minerals Council South Africa, 2023).

Housing obligations are particularly vital because to the historical legacy of migrant labour systems and the ongoing proliferation of informal settlements next to mining regions (Marais, Nel, & Donaldson, 2019). Mining companies are anticipated to endorse family housing and comprehensive settlement development.

Notwithstanding these duties, compliance deficiencies endure. Mining firms are frequently condemned for emphasising production over sustainable community development (HSRC, 2022). Inadequate enforcement capability further constrains regulatory efficacy.

Evolutionary Governance Theory posits that failures arise when governance systems do not adapt via learning, coordination, and institutional development (Van Assche, Beunen, & Duineveld, 2014).

Informal Settlement Upgrading Program

The Informal Settlement Upgrading Programme (UISP) was established within South Africa's housing policy framework to enhance living conditions in informal settlements (Department of Human Settlements South Africa, 2004). In contrast to previous eradication-focused strategies, the UISP acknowledges informal settlements as enduring urban phenomena necessitating gradual enhancement (Huchzermeyer, 2011). The UISP advocates:

- Enhancement of existing settlements.
- Delivery of fundamental services (water, sanitation, electricity).
- Protection of tenure.
- Engagement of the community.
- Gradual housing development.

Integrated human settlement planning (Department of Human Settlements, South Africa, 2004). The initiative conforms to the Breaking New Ground (BNG) policy framework, which advocates for spatial transformation and inclusive urban development (Republic of South Africa, 2004).

In mining towns, the deployment of UISP is essential due to swift urbanisation resulting from labour migration and mining expansion (Donaldson, Marais, & Mbonane, 2018). Municipalities frequently encounter challenges related to funding and limitations in technical capacity (HSRC, 2022).

From the standpoint of Evolutionary government Theory, UISP exemplifies adaptive government by seeing informal settlements as dynamic systems rather as unlawful areas necessitating eradication (Scott, 2015; Evers & de Vries, 2019).

Inadequacies and Misalignment of Policies

Notwithstanding progressive initiatives, considerable government fragmentation persists in South Africa's mining towns. The MPRDA, SLP framework, UISP, and BNG policy frequently function independently rather than together (Republic of South Africa, 2002; Department of Human Settlements South Africa, 2004).

This discrepancy is attributable to:

- Inadequate municipal governance capacity (HSRC, 2022).
- Corruption and mismanagement.
- Inadequate intergovernmental coordination.
- Inadequate monitoring and enforcement mechanisms.
- Limited community engagement.
- Short-term planning methodologies (Boonstra & de Roo, 2017).

Mining corporations occasionally undertake housing projects that are not coordinated with local Integrated Development Plans (IDPs), leading to disjointed development results (Marais, Nel, & Donaldson, 2019). Evolutionary Governance Theory attributes these failures to inflexible governance structures that lack evolution through institutional learning and adaptation (Scott, 2015; Van Assche et al., 2020). Sustainable mining towns necessitate cohesive, flexible, and cooperative government frameworks.

Mineral and Petroleum Resources Development Act (Mprda)

Social and Labour Plans (SLPs)

The Mineral and Petroleum Resources Development Act (MPRDA) was established to transform South Africa's mining sector by ensuring that mineral resources promote equitable socio-economic development rather than benefiting a select few (Republic of South Africa, 2002). The Social and Labour Plan (SLP), a vital mechanism instituted under the MPRDA, requires mining companies to alleviate the social and economic repercussions of their activities on impacted communities (Department of Mineral Resources and Energy South Africa, 2023).

SLPs were instituted to ensure that mining activities promote sustainable development, improve living standards, create employment opportunities, and strengthen local economic growth. Mining companies are required to submit Social and Labour Plans (SLPs) as a condition for obtaining mining rights. These plans specify responsibilities regarding:

- Residential and living conditions

- Development of skills and training (Department of Mineral Resources and Energy South Africa, 2023).
- Regional economic development.
- Provision of infrastructure.
- Community enhancement initiatives.
- Equity in employment and organisational transformation.

The housing and living conditions aspect has acquired significance due to persistent criticism over inadequate lodging for mine workers and the increase of informal settlements in mining regions (Marais, Nel, & Donaldson, 2019). The government sought to mandate mining companies to substitute obsolete dormitory systems with respectable family housing and sustainable human settlement development (Republic of South Africa, 2002).

Nonetheless, the execution of SLPs has been irregular throughout mining regions. Research in mining towns like Marikana and Rustenburg indicates persistent housing shortages, inadequate infrastructure, and socio-economic marginalisation despite Social and Labour Plan commitments (Donaldson, Marais, & Mbonane, 2018). Communities frequently contend that SLP programs do not completely correspond with local development aspirations.

From the standpoint of Evolutionary Governance Theory, SLPs serve as tools designed to facilitate co-evolution among mining activities, governance institutions, and local development systems (Evers & de Vries, 2019; Scott, 2015). Nevertheless, inadequate institutional coordination constrains their transformative effect.

Legal Responsibilities of Mining Corporations

According to the MPRDA, mining companies hold substantial legal and developmental obligations to their employees, adjacent communities, and the environment (Republic of South Africa, 2002). These commitments are based on South Africa's constitutional dedication to equitable resource allocation.

Mining corporations are mandated by law to:

- Formulate and execute Social and Labour Plans Enhance housing and living circumstances for employees.
- Advocate for regional economic advancement.
- Facilitate skills enhancement and job opportunities.
- Mitigate environmental degradation.
- Involve impacted communities.
- Facilitate infrastructure advancement (Department of Mineral Resources and Energy South Africa, 2023).

The Mining Charter reinforces these commitments by promoting change, Black economic empowerment, and inclusive involvement within the mining industry (Minerals Council South Africa, 2023). Housing obligations are particularly vital because to the historical legacy of migrant labour systems and the ongoing proliferation of informal settlements next to mining regions (Marais, Nel, & Donaldson, 2019). Mining companies are anticipated to endorse family housing and comprehensive settlement development.

Notwithstanding these duties, compliance deficiencies endure. Mining corporations frequently face criticism for favouring output at the expense of sustainable community development (HSRC, 2022). Inadequate enforcement capabilities further constrain regulation efficacy. The Evolutionary Governance Theory posits that failures arise when governance systems do not adapt via learning, coordination, and institutional development (Van Assche, Beunen, & Duineveld, 2014).

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- Localized enhancement of communities.
- Delivery of essential services (water, sanitation, electricity.
- Protection of tenure.
- Community engagement.
- Gradual housing development.

Integrated human settlement planning (Department of Human Settlements, South Africa, 2004). The initiative is consistent with the Breaking New Ground (BNG) policy framework, which advocates for spatial transformation and inclusive urban development (Republic of South Africa, 2004). The deployment of UISP is essential in mining towns due to swift urbanisation caused by labour migration and mining expansion (Donaldson, Marais, & Mbonane, 2018). Municipalities frequently encounter challenges related to funding and limitations in technical capacity (HSRC, 2022).

From the standpoint of Evolutionary government Theory, UISP exemplifies adaptive government by seeing informal settlements as dynamic systems rather as unlawful areas necessitating eradication (Scott, 2015; Evers & de Vries, 2019).

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Notwithstanding progressive initiatives, substantial government fragmentation persists in South Africa's mining towns. The MPRDA, SLP framework, UISP, and BNG policy frequently function independently rather than in concert (Republic of South Africa, 2002; Department of Human Settlements South Africa, 2004). This discrepancy is attributable to:

- Inadequate municipal governance capacity (HSRC, 2022).
- Corruption and mismanagement.
- Poor intergovernmental collaboration.
- Restricted oversight and regulatory mechanisms.
- Limited community engagement.
- Short-term planning methodologies (Boonstra & de Roo, 2017).

Mining firms occasionally execute housing developments without coordinating with local Integrated Development Plans (IDPs), leading to disjointed development results (Marais, Nel, & Donaldson, 2019). Evolutionary Governance Theory attributes these failures to inflexible governance structures that lack evolution through institutional learning and adaptation (Scott, 2015; Van Assche et al., 2020). Sustainable mining towns necessitate integrated, flexible, and collaborative governance frameworks.

Integrated Revitalisation Strategies

Aligning BNG, MPRDA, and UISP

The thorough revitalisation of mining towns in South Africa requires strong policy alignment among housing, mining, and urban development frameworks. The Breaking New Ground (BNG), the Mineral and Petroleum Resources Development Act (MPRDA), and the Informal Settlement Upgrading Programme (UISP) operate within fragmented institutional frameworks, resulting in insufficient coordination and reduced developmental effectiveness in mining regions (Department of Human Settlements South Africa, 2004; Republic of South Africa, 2002).

BNG develops a complete framework for sustainable human settlements, emphasising spatial coherence, dignity, and access to basic services. The MPRDA requires mining companies, through Social and Labour Plans (SLPs), to meet legal obligations for local socio-economic development (Department of Mineral Resources and Energy South Africa, 2023). UISP underscores the progressive improvement of informal settlements by in-situ service delivery and the assurance of tenure security (Huchzermeyer, 2011).

Nevertheless, these frameworks are frequently executed in isolation, leading to redundant efforts, conflicting agendas, and ineffective resource allocation (HSRC, 2022). Integrated revitalisation necessitates the synchronisation of these policies within a cohesive governance framework that connects mining development, housing provision, and municipal spatial planning (Marais, Nel, & Donaldson, 2019).

From the standpoint of Evolutionary governing Theory, policy alignment signifies institutional co-evolution, necessitating that governing institutions collectively adjust to evolving socio-spatial contexts in mining towns (Scott, 2015; Evers & de Vries, 2019). In the absence of such integration, fragmentation exacerbates inequality and the proliferation of informal settlements.

Public-Private Partnerships (PPP)

Public-Private Partnerships (PPPs) are key instruments for rejuvenating mining communities, as they integrate the resources and experience of both governmental and private entities (Miraftab, 2004). In mining areas, public-private partnerships can provide extensive infrastructure development, housing supply, and service provision, particularly in towns with financial and technical limitations (World Bank, 2021). Mining corporations, as principal economic entities, are strategically positioned to co-finance infrastructure via public-private partnership agreements. These collaborations can enable:

- Residential development initiatives.
- Water and sanitation infrastructure.
- Electricity and energy infrastructure.
- Transportation and roadway infrastructure.
- Community amenities including educational institutions and healthcare clinics.

Nonetheless, the efficacy of PPPs is contingent upon robust governance, transparency, and accountability (HSRC, 2022). In numerous mining towns, PPP attempts have been hindered by inadequate coordination, distrust among stakeholders, and restricted municipal capacity (Bénit-Gbaffou, 2018).

When effectively organised, PPPs can expedite spatial transformation and alleviate strain on public resources. Nonetheless, they must conform to municipal Integrated Development Plans (IDPs) and long-term sustainability objectives to prevent disjointed development results (Boonstra & de Roo, 2017).

Community Involvement and Cooperative Safety Production

Community involvement is an essential element of effective revitalisation methods in mining communities. Historically, mining communities have been marginalised in decision-making processes concerning housing, infrastructure, and development planning, leading to mistrust and violence (Donaldson, Marais, & Mbonane, 2018).

The co-production of safety entails collaboration among communities, municipalities, mining enterprises, and law enforcement authorities to enhance living circumstances and fortify security. In informal settlements next to mining regions, community engagement is crucial for risk identification, crime reporting, and facilitating developmental initiatives (Bénit-Gbaffou, 2018).

Participatory governance enhances accountability and guarantees that development aligns with local demands (HSRC, 2022). Entities like ward committees and community forums facilitate communication between citizens and governmental entities. From the standpoint of Evolutionary Governance Theory, co-production signifies an adaptive governance process wherein institutions develop through ongoing interactions with communities (Scott, 2015; Van Assche et al., 2014). This enhances legitimacy, trust, and social cohesion within mining communities.

Infrastructure Investment and Spatial Planning

Investment in infrastructure and spatial planning are important for the revitalisation of mining communities. Numerous mining regions in South Africa experience declining infrastructure, characterised by insufficient water supply, sanitation systems, roads, and electricity networks (Statistics South Africa, 2022).

Accelerated mining-induced urbanisation has surpassed infrastructure development, resulting in the proliferation of informal settlements and delays in service delivery (Marais, Nel, & Donaldson, 2019). Successful revitalisation necessitates sustained infrastructure investment in accordance with spatial planning frameworks. Spatial planning must prioritise:

- Consolidated human habitats.
- Closeness to economic prospects.
- Efficient land use management.
- Environmental sustainability.
- Consolidation of residential and industrial areas.

Investment in infrastructure should prioritise the enhancement of existing informal communities over migration to peripheral areas (Huchzermeyer, 2011). This promotes inclusive urban development and mitigates geographical inequality.

Evolutionary Governance Theory underscores the necessity for infrastructure systems to adapt to shifting demographic and economic circumstances (Van Assche et al., 2020). Consequently, adaptive infrastructure planning is crucial for sustainable mining communities.

Implementation of CPTED for Improved Settlement Security

Crime Prevention Through Environmental Design (CPTED) is a tactical methodology that employs urban design to mitigate crime and enhance safety within communities (UN-Habitat, 2020). In mining towns, where informal settlements frequently encounter elevated crime rates, CPTED offers a pragmatic framework for enhancing safety.

- Fundamental principles of CPTED encompass:
- Enhanced street illumination
- Natural surveillance (unobstructed sightlines).
- Regulated access points.
- Organized roadway and pathway design.
- Upkeep of communal areas.
- Provision of leisure amenities.

Informal communities in mining regions frequently lack essential elements, fostering conditions conducive to criminal activities such as theft, violence, and illicit mining (Donaldson, Marais, & Mbonane, 2018). The implementation of CPTED can markedly enhance safety results and bolster community trust. CPTED corresponds with evolutionary governance principles by enhancing safety through spatial and environmental modifications instead of depending exclusively on enforcement strategies (Scott, 2015). It fosters social cohesiveness by establishing safer and more inclusive public areas.

Limitations of the Study

This study provides a comprehensive policy and governance analysis of the sustainable revitalisation of mining towns in South Africa. Nevertheless, several limitations should be acknowledged. First, the study adopts a qualitative approach based primarily on secondary data, including legislation, policy documents, government reports, peer-reviewed literature and industry publications. Consequently, the findings depend on the quality, reliability and availability of existing data and do not incorporate primary empirical evidence from interviews, surveys or field observations within mining communities.

Second, although the study reviews mining towns across South Africa, it does not undertake an in-depth comparative analysis of individual municipalities or provinces. Mining towns differ considerably in terms of their mineral resources, governance capacity, socio-economic conditions, demographic characteristics and environmental challenges. Accordingly, the findings should be interpreted as providing a national policy perspective rather than municipality-specific conclusions.

Third, mining legislation, economic conditions and environmental policies continue to evolve, particularly in response to South Africa's Just Energy Transition, climate change commitments and changing global commodity markets. As a result, future legislative reforms, institutional changes and economic developments may influence the applicability of some findings and recommendations.

Finally, while international best practices are considered to enrich the analysis, differences in governance systems, institutional capacity and socio-economic contexts may limit the direct transferability of international experiences to the South African environment. Future research incorporating longitudinal studies, comparative case studies and stakeholder perspectives would strengthen the evidence base for policy implementation and sustainable mining-town revitalisation.

Policy Impact of the Study

The study has significant implications for public policy, governance and sustainable development in South Africa. It provides evidence-based recommendations to strengthen the implementation of mining legislation and improve coordination between national, provincial and local government institutions responsible for mining-community development.

The proposed policy-driven revitalisation framework can assist the Department of Mineral and Petroleum Resources, the Department of Cooperative Governance and Traditional Affairs, municipalities, provincial governments and mining companies to better align Social and Labour Plans with Integrated Development Plans, Spatial Development Frameworks and Local Economic Development strategies. Such alignment will promote integrated planning, improved infrastructure investment and more sustainable socio-economic outcomes in mining regions.

The findings further support the development of policies that promote economic diversification, workforce reskilling, environmental rehabilitation and sustainable post-mining land use. These interventions are particularly relevant as South Africa advances its Just Energy Transition and seeks to reduce the socio-economic risks associated with mine closures and declining extractive industries.

Furthermore, the study contributes to strengthening governance through improved monitoring and evaluation systems, enhanced stakeholder participation, greater institutional accountability and collaborative partnerships between government, mining companies, civil society organisations and local communities. Collectively, these measures can improve service delivery, strengthen municipal resilience and enhance the long-term sustainability of mining towns.

Key Takeaways

The study highlights several important insights regarding the future of South African mining towns.

- ➢ Mining remains a strategic contributor to South Africa's economy, but extraction alone cannot guarantee sustainable community development.
- ➢ Many mining towns continue to experience socio-economic inequality, infrastructure deterioration, environmental degradation and weak municipal governance despite decades of mineral wealth.
- ➢ South Africa possesses a comprehensive legislative and policy framework; however, implementation remains fragmented, poorly coordinated and inadequately monitored.
- ➢ Sustainable revitalisation requires integrated governance, stronger institutional capacity and meaningful collaboration among government, municipalities, mining companies, civil society and local communities.
- ➢ Economic diversification is essential to reduce dependence on mining and to improve resilience against commodity price fluctuations, mechanisation, mine closures and the Just Energy Transition.
- ➢ Environmental rehabilitation, responsible mine closure planning and sustainable land-use management are fundamental to protecting communities and supporting long-term regional development.
- ➢ Social and Labour Plans should evolve beyond compliance requirements to become strategic instruments for sustainable local economic development.
- ➢ Effective revitalisation depends on evidence-based policymaking, accountable governance, continuous monitoring and active community participation.

- The proposed policy-driven framework offers a practical roadmap for transforming mining-dependent settlements into resilient, inclusive and sustainable communities.

Conclusion

Mining has played a defining role in shaping South Africa's economic, social and spatial development. While the sector continues to generate substantial economic value, many mining towns remain characterised by persistent poverty, unemployment, environmental degradation, infrastructure backlogs, weak municipal governance and limited economic diversification. These challenges demonstrate that the long-term sustainability of mining communities cannot depend solely on the extraction of mineral resources but requires comprehensive and integrated development strategies that extend beyond the operational life of mines. This study has demonstrated that South Africa has established an extensive legislative and policy framework aimed at promoting sustainable mining-community development. However, the effectiveness of these policies has been constrained by fragmented implementation, limited institutional capacity, inadequate monitoring, weak intergovernmental coordination and insufficient stakeholder participation. Addressing these shortcomings requires stronger governance systems, integrated planning, improved accountability and closer collaboration among all stakeholders involved in mining-town development.

The study further argues that sustainable revitalisation must be founded on economic diversification, environmental stewardship, infrastructure investment, community participation and institutional resilience. The transition towards a low-carbon economy and the implementation of the Just Energy Transition create both challenges and opportunities for mining communities. If managed effectively, these transitions can stimulate innovation, investment, workforce development and new economic opportunities that reduce dependence on extractive industries while improving long-term community well-being.

Ultimately, the proposed policy-driven revitalisation framework provides a strategic pathway for transforming South African mining towns from resource-dependent settlements into sustainable, resilient and inclusive communities. Its implementation can strengthen public policy, improve governance, enhance municipal performance and promote balanced socio-economic development. By advancing integrated governance, responsible resource management and sustainable local development, the study contributes to South Africa's long-term development agenda and supports the achievement of the National Development Plan 2030, the African Union Agenda 2063 and the United Nations Sustainable Development Goals. It also establishes a foundation for future research on mining governance, post-mining transitions and sustainable regional development within South Africa and other resource-dependent economies.

This chapter critically reviewed the body of literature relating to the sustainable revitalisation of mining towns, providing the conceptual, theoretical, empirical and policy foundation for the study. The review demonstrated that although mining has historically played a pivotal role in South Africa's economic growth, industrialisation and regional development, many mining towns continue to experience persistent socio-economic inequalities, deteriorating infrastructure, environmental degradation, weak municipal governance and limited economic diversification. These challenges highlight the inadequacy of development models that focus predominantly on mineral extraction without simultaneously investing in sustainable community development and institutional resilience.

The literature further revealed that South Africa has established a comprehensive legislative and policy framework to promote sustainable mining-community development. Key policy instruments, including the Mineral and Petroleum Resources Development Act (Act 28 of 2002), the Mining Charter (2018), Social and Labour Plans (SLPs), the National Development Plan 2030, the Spatial Planning and Land Use Management Act (Act 16 of 2013), the Integrated Urban Development Framework (IUDF), the District Development Model (DDM) and the National Infrastructure Plan 2050, collectively provide a robust foundation for promoting inclusive local economic development, environmental stewardship and institutional transformation. However, the literature consistently indicates that the effectiveness of these policy instruments is constrained by fragmented implementation, weak intergovernmental coordination, inadequate municipal capacity, limited stakeholder participation and insufficient monitoring and evaluation.

The theoretical review demonstrated that Resource Curse Theory and the Sustainable Livelihoods Framework provide complementary perspectives for understanding the complex challenges confronting mining communities. Resource Curse Theory explains why resource-rich regions may continue to experience poverty, institutional weakness and economic vulnerability despite substantial mineral wealth, while the Sustainable Livelihoods Framework emphasises the importance of strengthening human, social, natural, physical and financial capital to promote long-term community resilience. Together, these theoretical perspectives underscore the necessity of integrated governance, accountable institutions and diversified local economies in achieving sustainable post-mining development.

The empirical literature also revealed growing international recognition that mining-town revitalisation requires a shift from extraction-centred development towards integrated, place-based and community-driven planning. International experiences demonstrate that successful post-mining transitions depend upon economic diversification, infrastructure investment, environmental rehabilitation, collaborative governance, effective land-use planning and meaningful stakeholder participation. These lessons are particularly relevant to South Africa as the country navigates mine closures, climate change, the Just Energy Transition and increasing pressure to achieve the Sustainable Development Goals.

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