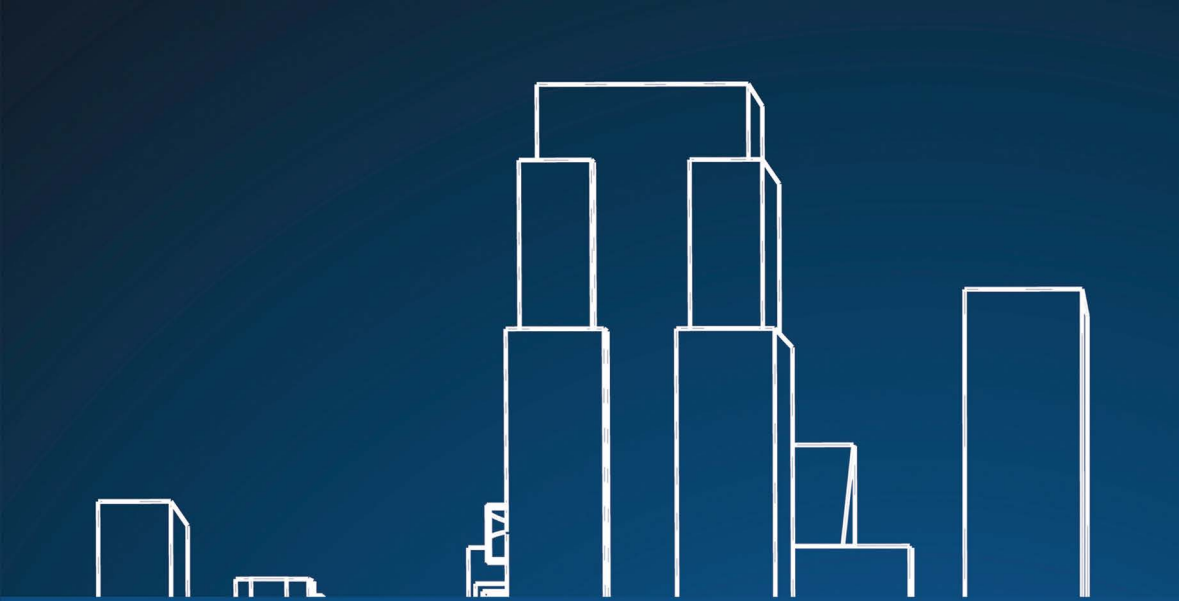




Routledge Studies of the Extractive Industries and Sustainable Development

LOCAL RESPONSES TO MINE CLOSURE IN SOUTH AFRICA

DEPENDENCIES AND SOCIAL DISRUPTION

Edited by

Sethulego Matebesi, Lochner Marais and Verna Nel



ROUTLEDGE



Local Responses to Mine Closure in South Africa

This book investigates mine closure and local responses in South Africa, linking dependencies and social disruption.

Mine closure presents a major challenge to the mining industry and government policymakers globally, but particularly in the Global South. South Africa is experiencing notable numbers of mine closures, and this book explores the notion of social disruption, a concept often applied to describe the effects of mine growth on communities but often neglecting the impact of mine closures. The book begins with three theoretical chapters that discuss theory, closure cost frameworks and policy development in South Africa. It uses evolutionary governance theory to show how mining creates dependencies and how mining growth often blinds communities and governments to the likelihood of closure. Too easily, mining goes ahead with no concern for the possibility, or indeed inevitability, of eventual closure and how mining communities will cope. These impacts are showcased through eight place-based case studies from across South Africa, one focusing on mine workers, to demonstrate that mine closure causes significant social disruption.

This book will be of interest to students and scholars researching the social impacts of mining and the extractive industries, social geography and sustainable development, as well as policymakers and practitioners working with mine closure and social impact assessments.

Sethulego Matebesi is Associate Professor and Academic Head of the Department of Sociology at the University of the Free State (UFS), South Africa. His previous publications include *Civil Strife Against Local Governance: Dynamics of Community Protests in South Africa* (2017) and *Social Licensing and Mining in South Africa* (Routledge, 2020).

Lochner Marais is Professor of Development Studies at the Centre for Development Support at the University of the Free State (UFS), South Africa, and an executive editor of the newly established journal *Research Directions: Mine Closure and Transitions*. He is also an honorary professor at the Sustainable Minerals Institute, University of Queensland, Australia. He has published *The Social Impacts of Mine Closure in South Africa: Housing Policy and Place Attachment* (Routledge, 2022).

Verna Nel is Professor of Urban and Regional Planning at the University of the Free State, South Africa. She is also qualified as a town and regional planner at Wits University, South Africa.

Routledge Studies of the Extractive Industries and Sustainable Development

The Impact of Mining Lifecycles in Mongolia and Kyrgyzstan

Political, Social, Environmental and Cultural Contexts

Edited by Troy Sternberg, Kemel Toktomushev and Byambabaatar Ichinkhorloo

Oil and National Identity in the Kurdistan Region of Iraq

Conflicts at the Frontier of Petro-Capitalism

Alessandro Tinti

The Anthropology of Resource Extraction

Edited by Lorenzo D'Angelo and Robert Jan Pijpers

Andean States and the Resource Curse

Institutional Change in Extractive Economies

Edited by Gerardo Damonte and Bettina Schorr

Stakeholders, Sustainable Development Policies and the Coal Mining Industry

Perspectives from Europe and the Commonwealth of Independent States

*Izabela Jonek-Kowalska, Radosław Wolniak, Oksana A. Marinina and
Tatyana V. Ponomarenko*

The Social Impacts of Mine Closure in South Africa

Housing Policy and Place Attachment

Lochner Marais

Local Responses to Mine Closure in South Africa

Dependencies and Social Disruption

Edited by Sethulego Matebesi, Lochner Marais and Verna Nel

Local Responses to Mine Closure in South Africa

Dependencies and Social Disruption

**Edited by Sethulego Matebesi,
Lochner Marais and Verna Nel**

 **Routledge**
Taylor & Francis Group
LONDON AND NEW YORK

earthscan
from Routledge

First published 2024
by Routledge
4 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

and by Routledge
605 Third Avenue, New York, NY 10158

Routledge is an imprint of the Taylor & Francis Group, an informa business

© 2024 selection and editorial matter, Sethulego Matebesi, Lochner Marais,
and Verna Nel; individual chapters, the contributors

The right of Sethulego Matebesi, Lochner Marais, and Verna Nel to be
identified as the authors of the editorial material, and of the authors for their
individual chapters, has been asserted in accordance with sections 77 and 78
of the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this book may be reprinted or reproduced or
utilised in any form or by any electronic, mechanical, or other means, now
known or hereafter invented, including photocopying and recording, or in
any information storage or retrieval system, without permission in writing
from the publishers.

Trademark notice: Product or corporate names may be trademarks or
registered trademarks, and are used only for identification and explanation
without intent to infringe.

British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library

ISBN: 978-1-032-51043-9 (hbk)

ISBN: 978-1-032-51658-5 (pbk)

ISBN: 978-1-003-40332-6 (ebk)

DOI: 10.324/9781003403326

Typeset in Times New Roman
by Apex CoVantage, LLC

Contents

<i>List of tables</i>	<i>vii</i>
<i>List of figures</i>	<i>viii</i>
<i>List of acronyms</i>	<i>ix</i>
<i>List of contributors</i>	<i>xi</i>
1 Understanding mine closure: global and national trends	1
LOCHNER MARAIS, SETHULEGO MATEBESI AND VERNA NEL	
2 A theoretical framework for understanding the social aspects of mine closure	16
LOCHNER MARAIS, SETHULEGO MATEBESI AND VERNA NEL	
3 Mine closure policies and strategies in South Africa: a critical review	24
SAMKELISIWE KHANYILE AND LOCHNER MARAIS	
4 A scoping review of the literature on mine closure	33
ANITA VENTER, JOB GBADEGESIN AND DAVID VAN WYK	
5 Miners' lives after retrenchment	44
MARTINA KOTZÉ, BOITUMLO JOY ALEC, MMBONENI MAGADZU AND JAN CLOETE	
6 West Rand: decline in South Africa's economic heartland	57
MARGARET KUSAMBIZA-KIINGI, VERNA NEL AND JOB GBADEGESIN	
7 Matjhabeng: decline in the urban periphery	67
KENTSE SESELE AND MARGARET KUSAMBIZA-KIINGI	
8 Kleinzee: looking for a new dawn amidst the diamond dust	80
ANMAR PRETORIUS AND DERICK BLAAUW	

9	Koffiefontein mine downscaling: socioeconomic and infrastructural consequences	93
	SETHULEGO MATEBESI, THOMAS STEWART, MALÉNE CAMPBELL AND OUPA KALE	
10	Alexkor and the Richtersveld community: unlikely partners to mine diamonds together	104
	PHIA VAN DER WATT	
11	Tshikondeni: mine closure in a deeply rural area	121
	VERNA NEL AND DOLPHIN MABALE	
12	Emalahleni's just transition: from closure to collaboration?	130
	LUCIUS BOTES, SAMKELISIWE KHANYILE AND ZOLILE MQOTYANA	
13	Rustenburg: the struggle to go beyond mining	141
	SETHULEGO MATEBESI AND JOHN NTEMA	
14	Rustenburg: coping despite mine decline	150
	NGAKA MOSIANE AND CATHY M DZEREFOS	
15	A framework for understanding the social aspects of mine closure in South Africa	163
	LOCHNER MARAIS, SETHULEGO MATEBESI AND VERNAL NEL	
	<i>Index</i>	<i>184</i>

Tables

1.1	Social aspects of mine closure	3
6.1	Aged creditors and irregular expenditures, average for 2017–2019	63
7.1	Employment per sector in the Free State Goldfields, 1980–2019	70
7.2	Summary framework of the new local economic development strategy for Matjhabeng Local Municipality, 2019	73
8.1	Namakwa District Municipality: sectoral contribution to gross GDP (in %)	83
8.2	Population trends in Nama Khoi Local Municipality	84
8.3	Population trends in Kleinsee, 2001–2011	84
8.4	Number of reported crimes per category	85
12.1	Contribution of economic sectors to Emalahleni’s GDP, 2011 and 2021	137
15.1	Social aspects of mine closure – an expanded framework	166

Figures

1.1	Inactive mines and mines under care and maintenance in South Africa	6
1.2	Location of case study areas	8
3.1	Mining-related legislation, 1956–2021	25
6.1	Mines and settlements in the West Rand	58
6.2	Murder rates on the West Rand compared with three other municipalities in Gauteng, 2009–2019	61
6.3	Property rates collected per local municipality compared to national inflation, 2012–2019 (2012 figures expressed as 100%)	63
7.1	Mines and settlements in Matjhabeng	68
7.2	Changing GVA for Matjhabeng, the Free State Province and South Africa	71
8.1	Mines and settlements in Kleinzee	81
9.1	Mines and settlements in Letsemeng	94
9.2	Residential land-use increase in Koffiefontein, 1990–2020	99
10.1	Mines and settlements in the Richtersveld	106
11.1	Mines and settlements in Thulamela	122
12.1	Mines and settlements in Emalahleni	131
13.1	Mines and settlements in Rustenburg	142
14.1	Freedom Park in Rustenburg Local Municipality	151
14.2	Freedom Park informal settlements, RDP housing areas and Platinum Village	152
14.3	A typical housing structure in Freedom Park in the late 1980s and the 1990s	153
14.4	An RDP house turned into a modern commodity	154

Acronyms

CEO	Chief Executive Officer
CO ₂	Carbon dioxide
CPA	Communal Property Association
CSR	Corporate Social Responsibility
DMRE	Department of Minerals, Resources and Energy
DPE	Department of Public Enterprises
FSGDC	Free State Goldfields Development Centre
GPN	Global Protection Network
GDP	Gross Domestic Product
GVA	Gross Value Add
HIV/AIDS	Human immunodeficiency virus/acquired immunodeficiency syndrome
ICT	Information and Communication Technology
IDP	Integrated Development Plan
IEEFA	Institute for Energy Economics and Financial Analysis
IRP	Integrated Resource Plan
TKLA	Traditional and Khoi-San Leadership
NEMA	National Environmental Management Act
MACUA	Mining Affected Communities United in Action
MMIC	Matjhabeng Marketing and Investment Company
MPRDA	Minerals, Petroleum and Resources Development Act
NGO	Non-Governmental Organisation (NGO)
OVC	Orphans and Vulnerable Children
PCC	Presidential Climate Commission
PSJV	Pooling and Sharing Joint Venture
R&D	Research and Development
RBNDT	Royal Bafokeng Nation Development Trust
RDP	Reconstruction and Development Programmes
RMC	Richtersveld Mining Company
SADC	Southern African Development Community
SASSA	South African Social Security Agency
SEDA	Small Enterprise Development Agency
SEZ	Special Economic Zone
SDF	Spatial Development Framework

x *Acronyms*

SIA	Social Impact Assessment
SLP	Social and Labour Plan
SMME	Small Medium and Micro Enterprise
UK	United Kingdom
US	United States

Contributors

Boitumlo Joy Alec is a post-graduate student at the Centre for Development Support, University of the Free State, Bloemfontein, South Africa.

Derick Blaauw is Professor of Economics, School of Economic Sciences, North-West University, Potchefstroom, South Africa.

Lucius Botes is Professor and Managing Director: PhDs, North West University, Vanderbijlpark, South Africa.

Maléne Campbell is Professor Emeritus, Department of Urban and Regional Planning, University of the Free State, Bloemfontein, South Africa.

Jan Cloete is Researcher, Centre for Development Support, University of the Free State, Bloemfontein, South Africa.

Cathy M Dzerefos, Lecturer, Tshwane University of Technology, Pretoria, South Africa.

Job Gbadegesin is Research Associate, Centre for Development Support, University of the Free State, Bloemfontein, South Africa.

Oupa Kale is a post-graduate student at the Centre for Development Support, University of the Free State, Bloemfontein, South Africa.

Samkelisiwe Khanyile is Researcher, Gauteng City-Region Observatory, Johannesburg, South Africa.

Martina Kotzé is Professor, Department of Industrial Psychology, University of the Free State, Bloemfontein, South Africa.

Margaret Kusambiza-Kiingi is a post-graduate student at the Centre for Development Support, University of the Free State, Bloemfontein, South Africa.

Dolphin Mabale is Lecturer, Department of Human Sciences, University of Venda, Thohoyandou, South Africa.

Mmboneni Magadzu is a post-graduate student at the Centre for Development Support, University of the Free State, Bloemfontein, South Africa.

Ngaka Mosiane is Researcher, Gauteng City-Region Observatory, Johannesburg, South Africa.

Zolile Mqotyana is a post-graduate student at the Centre for Development Support, University of the Free State, Bloemfontein, South Africa.

John Ntema is Associate Professor, Department of Development Studies, Unisa, South Africa.

Anmar Pretorius is Professor of Economics, School of Economic Sciences, North-West University, Potchefstroom, South Africa.

Kentse Sesele is a post-doctoral fellow, Centre for Development Support, University of the Free State, Bloemfontein, South Africa.

Thomas Stewart is Lecturer, Department of Urban and Regional Planning, University of the Free State, Bloemfontein, South Africa.

Phia van der Watt is Research Associate, Centre for Development Support, University of the Free State, Bloemfontein, South Africa.

David van Wyk, Bench Marks Foundation, Johannesburg, South Africa.

Anita Venter is Researcher, Centre for Development Support, University of the Free State, Bloemfontein, South Africa.

1 Understanding mine closure

Global and national trends

*Lochner Marais, Sethulego Matebesi
and Verna Nel*

1.1 A future beyond mining

In September 2021, the 40-year-old general manager of a mine in South Africa spoke to Lochner Marais about his personal plan for a post-mining future. He said the mine is going to close in 2026, and, although he is a qualified engineer, he had enrolled for an MBA degree. A business qualification could help him find a new livelihood. He was unlikely to resign before closure (we suspected bonuses were at stake), but he was sensibly preparing for life beyond mine closure. Apart from his concern for himself, he was also concerned about the mine's suppliers, many of whom have only one client, the mine. When the mine closes, their businesses will close as well. Even though he has repeatedly told them about the impending closure, they continue to supply only the mine as they do not want to believe the closure date is real.

This anecdote epitomises the syndrome that this book describes in chapter after chapter: an unwillingness to think about closure and its consequences. It illustrates a form of cognitive lock-in that is common in mining environments and extends well beyond suppliers. In town after town, people employed by the mines and those not directly involved in mining yet also at risk from its fickleness stubbornly ignore closure signals. It encapsulates other themes running through this book. Mining creates dependencies. It supports non-mining livelihoods, but these are vulnerable. Mining booms blind people to the inevitability of closure. Unlike the mines, most of which are fairly well prepared, communities and governance structures make little or no preparation for closure. The result of this failure to plan early in a mine's life cycle for a future beyond mining is social disruption and trauma, to which many of the case studies in this book vividly bear witness.

1.2 The book's contributions

Our book fills a specific research gap. We believe that research has overemphasised the social consequences when a mine opens and during its working life and failed to give sufficient attention to the consequences of closure.

Over the past 20 years, the mine closure literature has grown, but several concerns remain, particularly that it is fragmented and dominated by environmental

aspects (Bainton & Holcombe, 2018; Ndaguba & Marais, 2023). Not many books have been written on the social aspects of mine closure. To date, those we know of are Neil et al. (1992), Chaloping-March (2017), Marais (2023) and Van Assche et al. (2024, in press). Besides being fragmentary, the literature is dominated by single case studies. Indeed, we ourselves use case studies in this book, but we argue that this collection invites comparison and helps to develop a comprehensive view. We suggest more comparative work like this, both within and across countries, should be done. Another concern about the literature is that it is descriptive and atheoretical. In this book, we use theory to illuminate the material the descriptive case studies provide. We selected two theoretical frameworks to understand mine closure: the concept of social disruption (often used to explain the social impacts of large mining investments) and the theory of dependencies as outlined in evolutionary governance theory (see Chapter 2). Yet another concern is that research on environmental and social aspects of mine closure remains mainly in the hands of private firms (Bainton & Holcombe, 2018). This book is an attempt to broaden the knowledge base, extending the literature.

A further concern is that research on the social aspects of mining over the past 50 years has sought to find ways to ensure that mining will have local benefits. Some terms that are common in this approach are ‘social licence to operate’, ‘responsible mining’, ‘corporate social responsibility’ and ‘collaborative planning’. One of the main problems with this approach has been that it focuses on the value of mining when a mine opens. This focus needs to shift to how that value might be negated by closure and what value might be garnered from closure. Although maximising local benefit during the mine’s life cycle is important, it can create dependencies, as illustrated by the precarious position of the suppliers the general manager was worried about.

Historically, mining legislation did not pay much attention to closure. Authorities provided mining licences but did not regulate closure. Many mines terminated activities and abandoned their operations when they became unprofitable. South Africa’s 6,000 abandoned mines are a case in point (Watson & Olalde, 2019). Over the past 50 years, global and South African mine closure legislation has become more stringent (see Chapter 3). Historically, companies simply abandoned mines, and local communities were left to live with this reality. Vivoda et al. (2019) created a framework for distinguishing the social aspects of mine closure. The framework, shown in Table 1.1, has 13 social aspects and 27 indicators.

In the final chapter of the book, we revisit this conceptual framework. We find it a useful list of aspects to be considered during a mine’s decline and closure, but it has some shortcomings. For example, it does not list individual and community trauma as a specific aspect. We feel this needs emphasis. Van Assche et al. (2021) have shown how this trauma remains with communities and inhibits the development of alternative economic possibilities. Closure often has intergenerational consequences, which the framework does not include. As the framework does not include causes, it does not show that many of the social problems at closure spring from decisions taken during booms. And as the framework was designed for Australia, it does not consider aspects specific to Africa. Many African governments view mining as a step towards development and modernity. The mine closure

Table 1.1 Social aspects of mine closure

<i>Social aspect</i>	<i>Indicative elements</i>
Economic	Local economic activity (diversity and dependence) Household income Local living standards
Business	Local business development opportunities in the mining Business opportunities in other sections
Employment	Local employment opportunities in the mining Local employment opportunities in other sectors Local employment stability/volatility
Security, education and training infrastructure	Social order and safety (e.g. tensions, crime and violence) Local skills development in mining and other sectors Access to quality education and training Local transport (e.g. public buses, roads and airports) Critical infrastructure (food supply, power supply, water supply, telecommunications)
Amenity	Local aesthetic and recreational resources (e.g. heritage sites, parks, recreation areas, communal areas) Local culture, arts and sports (including facilities)
Livelihoods	Local livelihoods (e.g. access to land, food, water and shelter that affects livelihoods)
Land	Local land access, ownership and use Recognition of traditional, customary ownership
Housing and health	Local housing quality, availability and affordability Community health and wellbeing Access to quality health and social services
Environment	Environmental aspects that affect social conditions (e.g. quality of air, water, land, ecosystem)
Demography	Local population dynamics (e.g. growth/decline, migration, ageing, gender balance)
Participation	Stakeholder participation in closure planning and closure and post-closure processes (including decision-making)
Inclusion	Inclusive stakeholder engagement, including vulnerable and otherwise marginalised groups (e.g. Indigenous peoples, women, ethnic minorities, disabled, elderly, young) in closure planning and closure and post-closure processes (including decision-making)
Social (general)	General socio-economic considerations Social considerations in financial assurance mechanisms

Source: Vivoda et al. (2019, p. 8)

disrupts this view. In the final chapter, we offer our expanded version of Vivoda et al.'s framework, using findings from the case studies, taking into account aspects specific to mine closure in South Africa, and broadening the debate by linking the aspects to social disruption and dependency.

1.3 The mining town and closure

The mine closure takes place in specific spaces. Although many mines are in remote areas with nearby settlements, most of those in South Africa are near urban areas (often small towns or secondary cities). Remote mining operations typically need help attracting skilled people to their sites. In response, mining companies developed company towns to reduce living costs and provide a comfortable living environment (Marais et al., 2018). The companies managed these towns to ensure that they served as an attraction. In many cases, the employees living in the company town did not have to pay rent and received water and electricity services at a discount. However, mining companies that did this have been criticised for, among other things, usurping public functions and playing a dominant role in public affairs (Obeng-Odoom, 2009). ‘Normalisation’, in other words, changing company towns from private to public management, thus became popular. In Canada, it had become the norm by the 1930s, but in Australia and South Africa, it only became common in the 1970s. By 2002, the mining industry had accepted open towns or normalisation as the main way to house its workforce (IIED, 2002), and collaborative planning had become the main way to manage these towns. In Australia, this shift to open towns coincided with the rising popularity of fly-in-fly-out arrangements (Storey, 2001). Worker camps (instead of company towns or open towns) became common in Australia and Africa (though not in South Africa) (Rubbers, 2019). Mining economies in this context often bypass local communities.

The aforementioned shifts in policy for housing miners have implications for mine closure. The mining companies’ long-term liabilities have been reduced, and the responsibility for dealing with settlements at closure has shifted to democratically elected governments and households. Local governments have to manage both booms and busts, and householders have to cope as best they can. Policies promoting normalisation largely ignore these implications, as they ignore the long-term reality of mine closure.

Globally, today we see various types of settlements near mines: open towns, company towns and worker camps. South African policy promotes normalisation and the development of open towns (Van der Watt & Marais, 2019; Marais, 2023). This attempts to redress the historical exclusion of black people from mining towns through the migrant labour system. The aim is to bring democracy to company towns, ensure the long-term development of these towns, and link the mining and non-mining populations. Formal governance structures and mining communities become responsible for dealing with booms and busts and eventual closure. Normalising and developing open towns may be considered appropriate responses during a mining boom. However, managing decline and closure in open towns is far more difficult. Although mining companies commonly plan the life cycle of a mine, it is difficult for governance structures and mining communities to do the same.

1.4 Mine closure in Africa

Twenty years ago, the World Bank estimated that 25 large African mines would close (World Bank & IFC, 2002). Planning for closure would be essential to avoid the long-term negative consequences of mining. Although the South African

mining context is substantially different from elsewhere in Africa, we highlight some of the main attributes of mine closure across the continent. Our focus here is largely on the commercial mining sector, although artisanal mining also has closure concerns (Bryceson et al., 2020).

Since the 1990s, Africa has seen a substantial increase in mining. Many African governments opened their countries to international investors. While the continent still struggles to respond to these investments, governments overlook the reality of eventual mine closure. Consequently, only a small body of literature focuses on mine closures in Africa (outside of South Africa). In the following text, we draw on the following sources from African literature: Ferguson (1999), Obeng-Odoom (2009), Larmer (2010), Kotsadam and Tolonen (2016), Besa et al. (2020), Gough et al. (2019), Knierzinger and Sopelle (2019) and Mfune et al. (2020).

The economic implications of mine closure and decline are usually extensive, with many people losing their mining jobs. Job losses also extend to the large numbers of people employed in businesses indirectly dependent on mining economies, like restaurants and suppliers to the mine. The economic decline has social implications. It can disrupt the social order, threaten safety and security, and increase crime. Loss of household income can result in school dropouts (an intergenerational consequence), as family members find they cannot afford to keep their children in school. In some cases, schools have simply closed, with teachers also losing their jobs. Mine closures can cause an outflow of people. But this is not always the case, and mine closure can lead to the formation of more households, as can be seen, for example, in Ghana.

Although open towns have become the norm, there are often infrastructure dependencies between mines and towns. A common example is the services commonly provided by local government infrastructure installed and maintained by mining companies. In other examples, mines manage and maintain recreational facilities or support local schools by paying the teachers' salaries. Closure brings an end to this, to the detriment of young people.

Land rehabilitation is an economic necessity. Effective land rehabilitation lays the foundation for new economic opportunities. But many mining areas in Africa are stuck with unrehabilitated land because their governments cannot enforce rehabilitation. Unrehabilitated mines attract small-scale miners, and sometimes this contributes to organised crime.

The effects of the large mining investments of the past 30 years will soon become evident when closure sets in. The environmental and social consequences will be huge, and African governments will typically struggle to enforce legislation for land rehabilitation. Mining localities will have to deal with the social and economic implications with little support from the mining companies or their national governments.

1.5 Mine closure in South Africa

Mining has been the historical backbone of development in South Africa. But increasingly, mines are closing. Figure 1.1 shows mines that have closed or are in care and maintenance; these do not include the 6,000 abandoned mines or closures that the government does not fully recognise. Many towns and cities developed because of mining, with Johannesburg being a prime example. Johannesburg

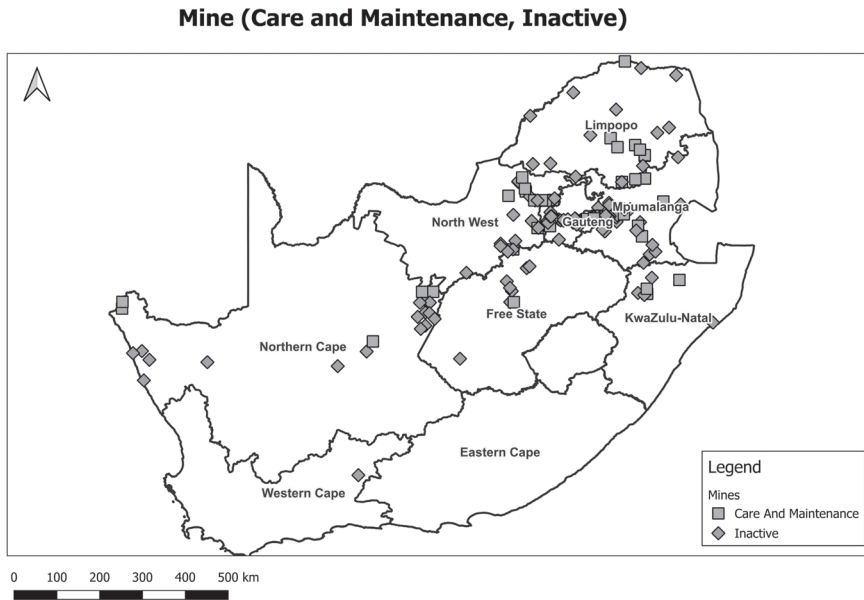


Figure 1.1 Inactive mines and mines under care and maintenance in South Africa

grew from gold, but today it has a diverse economic base, dominated by the service sector. But successful diversification of South African mining town economies is rare. Newcastle has had some success in this endeavour (Marais et al., 2021), but most have struggled. Sol Plaatje (formerly Kimberley, a diamond-mining town), Matjhabeng (Welkom, gold) and Matlosana (Klerksdorp, gold) are examples of towns whose economies have been damaged by mine closure. Other commodities besides diamonds and gold may follow this downward spiral. Towns dependent on coal and platinum are under threat. South Africa's global commitment to cleaner energy sources will affect coal mining areas. The government has already agreed to close most coal-fired stations by 2030 (although they are backtracking on this). Platinum prices are high, but the transition to electric vehicles could reduce demand.

But despite commodity volatility and the looming reality of mine closure, many mining communities are trapped in the expectation of wealth. The temporariness of mining as an economic activity is poorly understood, and the expectation of wealth often continues well after mine closure.

The closure of mine hostels since the early 1990s, when mine housing policy shifted from hostel to family accommodation, has resulted in many people coming to live with the miners near the mines. This policy shift transferred the risks from mining companies to local governments and households. A further policy shift, the drive to give miners homeownership, could be disastrous for the homeowners when decline sets in. Non-homeowning miners' families are free to migrate. They are not dependent on the town prospering. This laudable but perhaps misguided drive is an example of the government's goal dependency, the goal being reparation for apartheid (see Chapter 2).

1.6 The book's motivation, aims and methods

We see mine closure as a global problem that requires context-specific research and a holistic understanding. We had six specific motives for writing this book.

First, we believe the mine community research has focused too exclusively on the relationship between mines and communities during the operational stage of mining. It needs to pay more attention to this relationship at closure and recognise the dependencies that are set up during the operational stage.

Second, mine closure needs to be understood simply as an extension of mine development. Mining companies plan a mine's whole life cycle. But social impact assessments typically focus on mine development, ignoring mining decline. Extending the initial impact assessment to closure could help planners and policy-makers think about closure from the outset.

Third, and connected to the aforementioned point, planners and policymakers must consider mining booms and busts as one process. Treating them as unconnected events means that during a boom, no one considers the possibility of a bust or recognises the dependencies a boom creates. Those dependencies are difficult to deal with when closure sets in.

Fourth, the knowledge base about mine closure is often the property of mining companies and is sectoral and place-specific. The literature needs to be extended beyond the company doors, reflecting on various sectors, places and the responses of communities and governance structures.

Fifth, mine closure research tends to pay more attention to environmental than social aspects of closure. Although both are important and should be seen as interlinked, many policies and guidelines assume that the environmental aspects encompass the social aspects, but often they do not.

Finally, there is a need to collate urban experiences from the South African periphery. We need geographical evidence from remote areas in South Africa to support our research on the social consequences of mine closure in these areas.

The book has four overall aims:

- To describe the nature and scale of mine closure consequences for towns, cities and miners;
- To describe the responses of communities and their organisations to mine closure;
- To analyse existing policy frameworks and responses to mine closure by focusing on social aspects;
- To provide a theoretical framework against which to understand the social aspects of mine closure and decline.

Our methods were both theoretical and practical. The theoretical method is important, as to date the mine closure literature has tended to be atheoretical. We drew on two areas of theory: social disruption and evolutionary governance theory (see Chapter 2 for a detailed account). The concept of 'social disruption' is commonly used to describe the effects of mine growth on communities. We used this concept to investigate the effects of closure. Large mining investments contribute to crime, alcohol and drug abuse, and other social ills. O'Connor and Ruddell (2021), in a case study

from North America, found no evidence that closure results in social disruption. Our case studies found evidence that it does, and the concept of ‘social disruption’ helped us to show that such disruption is a common syndrome, not just isolated problems.

We argue that social problems caused by mine closure are a direct result of dependencies created during the life of a mine. The concept of dependencies is drawn from evolutionary governance theory. This theory helped us to identify common syndromes illustrated by the case studies: long, slow change and inability to change (path dependency), policies created for mining growth that are unsuitable for managing closure (goal dependency), and relationships set up during a boom that are disrupted during a bust (interdependency).

Our practical method was to conduct case studies in a wide spread of mining towns in South Africa, particularly in peripheral areas. Except for the West-Rand study, all are from remote areas across the country. This includes a few secondary cities, small towns, and the rural communities of Tshikondeni and the Richtersveld. Most of the chapters are based on a single case study. We simply required the researchers who contributed the chapters to relate the story of mine closure or decline (or expected decline) in their case study area, to record any social disruption it may have caused, and to consider how the various dependencies have shaped the response to decline. For the concluding chapter, we adopted a comparative approach to analyse the differences and similarities across the case studies.

The various chapters provide brief overviews of specific methods the researchers used. Not all the case studies are of actual mine closure or substantial decline; some are studies of areas with a high likelihood of decline. Figure 1.2 shows the

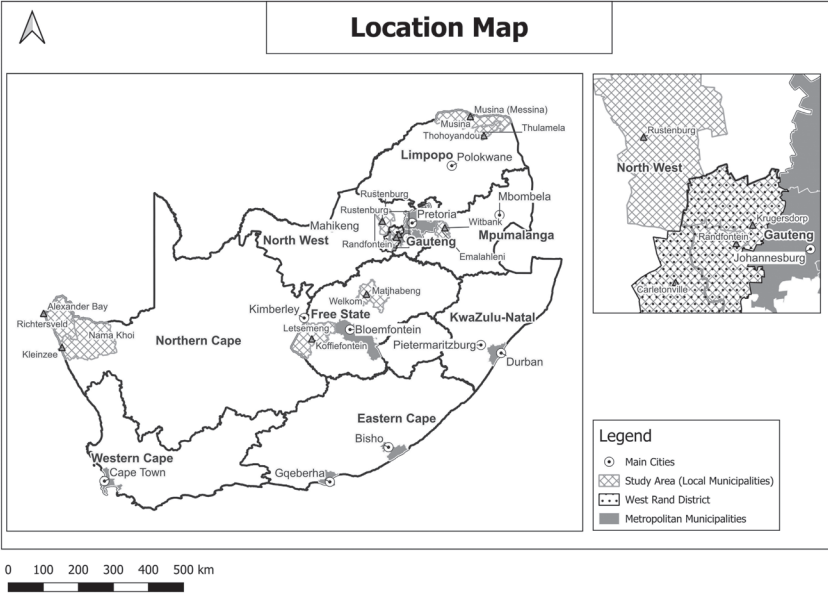


Figure 1.2 Location of case study areas

location of the case studies. In addition to the place-based case studies, we also commissioned a case study of miners' responses to retrenchment (Chapter 5).

1.7 Outline of the book

1.7.1 Section 1: Background and theory

Chapters 2 to 4 provide a theoretical framework, an account of historical and present mine closure legislation in South Africa, and a review of the literature. This general section is followed by the case studies. The first case study looks at the situation of miners retrenched because of closure. The rest are place-specific studies of decline and closure, looking at the consequences and the local responses (or lack of responses) and relating the findings to the book's theoretical framework. The final chapter combines the lessons learned and presents an expanded framework for understanding mine decline and closure.

Chapter 2: A theoretical framework for understanding the social aspects of mine closure

This chapter explains the theoretical framework and discusses its use for explaining the social aspects of mine closure. It assesses current understandings of the social consequences of mine closure against the concept of social disruption and the dependencies identified by evolutionary governance theory. Despite little evidence from research in the Global North to link mine closure and social disruption, we argue that social disruption does occur when mines close. We argue that social disruption occurs because mining creates dependencies that are difficult to overcome when mines close.

Chapter 3: Mine closure policies and strategies in South Africa: a critical review

As elsewhere in the world, mine closure policy in South Africa emphasises environmental aspects. Often, the social aspects are embedded in environmental policy and legislation. The original government policies regarding mining make scant reference to closure. Consequently, South Africa has over 6,000 abandoned mines with little likelihood of environmental restoration or repurposed land use. The chapter traces the development of mine closure legislation and evaluates the 2020 Draft Mine Closure Strategy. Historical legislation broadly referred to restoring land to its original state, but this was never enforced. The Minerals Act (1991) was the first to require an environmental management programme, a rehabilitation plan and financial provision for closure. Since democracy in 1994, several environmental and mining laws have followed, emphasising sustainability, appropriate closure management and post-mining requirements. The 2020 Draft Mine Closure Strategy provides guidelines for mine closure. Although this strategy has some valuable aspects, it still does not pay enough attention to the social aspects.

Chapter 4: A scoping review of the literature on mine closure

This chapter is a literature review that investigates the social implications of mine closure. Many mine closure frameworks have been developed only since the 1990s, but practical implementation and a thorough understanding of the social aspects are lacking. Debates about mine closure often prioritise economic and environmental rather than social concerns. Industry viewpoints dominate the literature, while socio-economic planning tends to be treated as a technical exercise. This chapter reviews some literature on the evolution of mine closure concepts and the emergence of social costs as a critical concern. There is reference to climate implications and their interconnectedness with social dimensions like health implications and cultural alienation.

1.7.2 Section 2: Case studies

Chapter 5: Miners' lives after retrenchment

When a mining company reduces its workforce through collective layoffs or decides to close an entire operation, it can bring hardship to many. The consequences may be worse in developing countries, where the mining sector is an important contributor to economic stability and employment is less secure than in developed countries. The chapter discusses the findings of two studies conducted in South African mining communities. It illustrates the effects of mine downscaling and closure on the lives of miners and their families. It describes the experiences and perceptions of those who lost their jobs and income. It shares their narratives about how they dealt with their loss and what helped them cope. The chapter suggests what could have been done differently in each case. The participants' harrowing accounts of social disruption at the household level indicate how dependent miners are on mine employment.

Chapter 6: West Rand: decline in South Africa's economic heartland

The scale of mine decline on the West Rand over the past three decades has been massive. Historically, the area's economy depended heavily on gold and uranium mining. The West Rand attracted large numbers of migrant labourers, mostly unskilled and low-skilled, from other parts of South Africa and the SADC countries. The mine closure caused large-scale job losses and outmigration to other areas of Gauteng. Many who remained were left with no alternative livelihood. The local economy has been severely affected, and the informal sector has grown rapidly. Informal settlements have burgeoned close to the mines. Mine decline has damaged the environment and human health and contributed to land invasions, social unrest and increased crime levels. Municipal finances have dwindled as the tax base has shrunk and investments in the local economy have declined, making it difficult for municipalities to deliver services. The West Rand struggles to respond adequately to mine decline and to devise appropriate strategies to mitigate its difficulties.

Chapter 7: Matjhabeng: decline in the urban periphery

In the mid-1980s, the Free State Goldfields, now known as Matjhabeng Local Municipality, produced 25% of the gold in the free world and employed 180,000 miners. The decline began in the early 1990s, and today the Goldfields employ only about 20,000 miners. Research has documented this decline's social and economic consequences and the various attempts to revitalise the local economy. In 2019, the municipality released yet another of its many plans to diversify the economy. The chapter assesses this latest plan against the international literature. The new plan prioritises plan-making over implementation, underplays the need for local actors to engage in good governance, ignores existing equilibriums and fails to consider the area's regional services function as a form of economic diversification.

Chapter 8: Kleinsee: looking for a new dawn amidst the diamond dust

Kleinsee is a small coastal town in the Northern Cape Province. Mining of alluvial diamonds started here in the mid-1920s. The mining company De Beers was instrumental in the town's founding and the region's day-to-day operations. At one point, De Beers owned about 320 km of coastal land south of Port Nolloth. Official diamond mining activity declined in the mid-1990s, and De Beers stopped operating in 2012. Today, large portions of land are still owned by De Beers, while local communities and the region struggle to deal with the economic and social consequences of mine closure. The chapter considers the socioeconomic impact of the official closing of the De Beers diamond mine. It looks at how the 400 residents remaining from the original 4,000 are experiencing this impact amidst frequent reports of illegal mining. It looks at the perspectives, experiences and aspirations of the youth in a town that once hosted three primary schools and an Olympic-size swimming pool, now empty. The chapter looks for answers in official publications and personal interviews with relevant stakeholders.

Chapter 9: Koffiefontein mine downscaling: socioeconomic and infrastructural consequences

The chapter looks at the livelihood choices and practices of Koffiefontein residents, ex-miners and business owners and compares their current diverse range of livelihood activities with the outcomes of a social impact assessment conducted in 2005. It describes the infrastructure of municipal services such as water, sewers, roads, stormwater drainage and electricity, which need ongoing maintenance, upgrading and replacement. With the series of mine downscalings over the years, the infrastructure has become obsolete or requires increased maintenance expenditure. Mitigating the socioeconomic and infrastructural consequences of mine downscaling in Koffiefontein requires creative solutions, community collaboration and appropriate technology.

Chapter 10: Alexkor and the Richtersveld community: unlikely partners to mine diamonds together

In 2003, the Richtersveld community successfully obtained the restitution of diamond-rich land along the northern tip of South Africa's West Coast. This resulted in a Pooling and Sharing Joint Venture (PSJV) with the state mining company Alexkor. The Richtersvelders got a 49% share in an almost bankrupt mine company. The internal conflict caused the governance system to collapse, leaving the Richtersvelders without representation in the PSJV. Alexkor thus practically runs the PSJV. Alexkor has been hampered by national agendas, mismanagement, corruption, loss-making and state capture. By 2020, both partners were under administration, and the PSJV was bankrupt. Interviews with community members point to social disruption, conflict and mistrust. Local contractors lost their investments through high-risk contracts with the PSJV. The actors are now locked into interwoven forms of dependency: a court order binding them into a PSJV that has been dysfunctional since inception, the state's ideological agendas, and decades of mistrust and interdependence between Alexkor and the Richtersvelders. The community is trapped in internal conflict, yearning for historical justice and dreaming of immense wealth from their diamond-rich land.

Chapter 11: Tshikondeni: mine closure in a deeply rural area

The chapter investigates the effects of the 2014 closure of the Tshikondeni coal mine in Musina Municipality in the far north of Limpopo province. The authors interviewed community members and traditional leaders. The Exxaro mining company declined to be interviewed, so information was gleaned from its website. The findings reveal three different interpretations of the effect of the mine closure. Exxaro said the closure had followed all the prescribed regulations, including reskilling and offering positions at other mines. The traditional leaders took a far more negative view of the social and economic consequences of the mine closure for their community. The community had mixed views but was concerned about the socioeconomic consequences of declining jobs, income and services. While the mine rehabilitates the environment, the villagers are damaging it by cutting down trees to sell for firewood, as they have no alternative livelihoods.

Chapter 12: Emalahleni's just transition: from closure to collaboration?

Having signed the Paris Agreement, South Africa is under pressure to change from fossil fuels to renewable energy sources. Emalahleni, in the Mpumalanga province of South Africa, is home to 80% of South Africa's coal reserves, 15 coal mines, and six coal-fired power plants, with about 35,000 people formally employed in the sector. The challenge is how to make the change to renewable energy sources a success for the people of Emalahleni. Any transition that benefits the environment but not the people is doomed to failure. The chapter describes the social impacts of closing Emalahleni's coal-fired plants and a possible decline in some coal mines. A post-coal future will have to consider the dependencies that have been caused

by the dominance of the coal mining sector. The question is how to aim for local stewardship, community care and caring for the environment in such a contested context. The chapter considers the difficulties and the realistic possibilities for a just transition in Emalahleni.

Chapter 13: Rustenburg: the struggle to go beyond mining

The platinum mining industry grew rapidly in South Africa for about three decades up to 2011. After the repeated labour strikes of 2012 and 2014, production dropped significantly, and the primarily mine-related local economy suffered. As a result, the area has been experiencing business closures and high unemployment. Over the past five years, the platinum price has buffered some closure problems. Using key informant interviews and document analysis, the chapter shows how the Royal Bafokeng Nation has profited from mining and used the profits to benefit the community, particularly by promoting education. It shows how the mining companies have left the municipality to deal with the consequences of closure. Despite formulating plans for a 'Rustenburg beyond mining', the municipality's overall approach to economic diversification has been merely reactive. The chapter foregrounds the notion that dependencies created by mining can be turned into opportunities when a multi-stakeholder, participatory approach to mine downscaling is adopted.

Chapter 14: Rustenburg: coping despite mine decline

Since 1979, Rustenburg's economy has been driven by the mining of platinum group metals, but since 2007, despite some booms, it has gone into decline. The chapter is based on a case study of Freedom Park, a low-income area of Rustenburg Local Municipality. The ordinary people of this area have shown resilience and resourcefulness despite the challenges of mining volatility and economic restructuring. They have given their children access to higher education. Their efforts have intergenerational value: their children's qualifications will enable them to find better jobs than their parents had, thus helping to diversify household livelihoods and minimise the long-term social consequences of mine closure. The chapter reflects on what further decline will mean for Rustenburg, but the narratives from the interviews indicate that ordinary people will cope.

Chapter 15: A framework for understanding the social aspects of mine closure in South Africa

In this chapter, the editors return to the theoretical concepts used in the book. We summarise examples of these concepts we have identified from the case studies, assess the scale and nature of social disruption, and link this to the dependencies associated with mining and mine closure. The chapter broadens the discussion on the theoretical aspects. We present our extended version of the framework in Chapter 1, giving a more comprehensive overview of the social aspects of mine closure. We highlight the consequences of mine closure and the responses from

communities, miners and local organisations. We suggest alternative ways to understand the social cost of mine closure and make policy recommendations.

References

- Bainton, N. & Holcombe, S., 2018. A critical review of the social aspects of mine closure. *Resources Policy*, 59, pp. 368–478.
- Besa, B., Kabwe, J.M.J. & Banda, W., 2020. Socio-economic impact of mine closure and development of exit strategy for rural mining areas in Zambia: A case study of Kalumbila District. In *Proceedings of the 28th International Symposium on Mine Planning and Equipment Selection – MPES 2019*. Berlin/Heidelberg: Springer.
- Bryceson, D., Jönsson, J. & Shand, M., 2020. Mining mobility and settlement during an East African gold boom. *Mobilities*, 15(3), pp. 446–463.
- Chaloping-March, M., 2017. *Social Terrains of Mine Closure in the Philippines*. London: Routledge.
- Ferguson, J., 1999. *Expectations of Modernity: Myths and Meanings of Urban Life on the Zambian Copperbelt*. Berkeley, CA: University of California Press.
- Gough, K., Yankson, P. & Esson, J., 2019. Migration, housing and attachment in urban gold mining settlements. *Urban Studies*, 56(13), pp. 2670–2687.
- IIED (International Institute for Environment and Development), 2002. *Breaking New Ground: Mining, Minerals and Sustainable Development (MMSD)*. London: Earthscan.
- Knierzinger, J. & Sopelle, I., 2019. Mine closure from below: Transformative movements in two shrinking West African mining towns. *Extractive Industries and Society*, 6, pp. 145–154.
- Kotsadam, A. & Tolonen, A., 2016. African mining, gender, and local employment. *World Development*, 83, pp. 325–339.
- Larmer, M., 2010. Historical perspectives on Zambia's mining booms and busts. In Fraser A. & Larmer, M. (eds.), *Zambia, Mining and Neoliberalism: Boom and Bust on the Globalised Copperbelt*. New York: Palgrave Macmillan, pp. 31–58.
- Marais, L., 2023. *The Social Impacts of Mine Closure in South Africa: Housing Policy and Place Attachment*. London: Routledge.
- Marais, L., McKenzie, F., Deacon, L., Nel, E., Van Rooyen, D. & Cloete, J., 2018. The changing nature of mining towns: Reflections from Australia, Canada and South Africa. *Land Use Policy*, 76, pp. 779–788.
- Marais, L., Nel, V., Rani, K., Van Rooyen, D., Sesele, K., Van der Watt, P. & Du Plessis, L., 2021. Economic transitions in South Africa's secondary cities: Governing mine closures. *Politics and Governance*, 9(3), pp. 381–392.
- Mfuno, O.K.-W.C., Chansa-Kabali, T., Chisola, C. & Manchisi, J., 2020. The legacy of mine closure in Kabwe, Zambia: What can resilience thinking offer to the mining sustainability discourse? In Gasparatos, A., Naidoo, M., Ahmed, A., Karanja, A. & Fukushi, K. (eds.), *Sustainability Challenges in Sub-Saharan Africa: Insights from Eastern and South Africa*. Singapore: Springer Nature, pp. 167–188.
- Ndaguba, E. & Marais, L., 2023. A scientometric analysis of mine closure research. *Environment, Development and Sustainability*. (Accepted).
- Neil, C., Tykkyläinen, M. & Bradbury, J. (eds.), 1992. *Coping with Closure: An International Comparison of Mine Town Experiences*. London: Routledge.
- Obeng-Odoom, F., 2009. Oil and urban development in Ghana. *African Review of Economics and Finance*, 1(1), pp. 18–39.

- O'Connor, L. & Ruddell, R., 2021. After the downturn: Perceptions of crime and policing in the southeastern Saskatchewan oil patch. *The Canadian Geographer*, 5(3), pp. 281–291.
- Rubbers, B., 2019. Mining towns, enclaves and spaces: A genealogy of worker camps in the Congolese copperbelt. *Geoforum*, 98, pp. 88–96.
- Storey, K., 2001. Fly-in/fly-out and fly-over: Mining and regional development in Western Australia. *Australian Geographer*, 32(2), pp. 133–148.
- Van Assche, K., Gruezmacher, M. & Granzow, M., 2021. From trauma to fantasy and policy: The past in the futures of mining communities; the case of Crowsnest Pass, Alberta. *Resources Policy*, 72, p. 102050.
- Van Assche, K., Gruezmacher, M., Marais, L. & Perez Sindin-Lopez, Z., 2024 (in press). *Resource Communities: Past Legacies and Future Pathways*. London: Routledge.
- Van der Watt, P. & Marais, L., 2019. Normalising mining company towns in Emalahleni, South Africa. *The Extractive Industries and Society*, 6, pp. 1205–1214.
- Vivoda, V., Kemp, D. & Owen, J., 2019. Regulating the social aspects of mine closure in three Australian states. *Journal of Energy & Natural Resources Law*, 37(4), pp. 405–424.
- Watson, A. & Olalde, M., 2019. The state of mine closure in South Africa – What the numbers say. *Journal of the Southern African Institute of Mining and Metallurgy*, 119, pp. 639–645.
- World Bank & IFC (International Finance Corporation), 2002. *It's Not Over when It's Over: Mine Closure Around the World*. Washington, DC: World Bank Group's Mining Department, Global Mining.

Understanding mine closure

- Bainton, N. & Holcombe, S. , 2018. A critical review of the social aspects of mine closure. *Resources Policy*, 59, pp. 368–478.
- Besa, B. , Kabwe, J.M.J. & Banda, W. , 2020. Socio-economic impact of mine closure and development of exit strategy for rural mining areas in Zambia: A case study of Kalumbila District. In *Proceedings of the 28th International Symposium on Mine Planning and Equipment Selection – MPES 2019*. Berlin/Heidelberg: Springer.
- Bryceson, D. , Jønsson, J. & Shand, M. , 2020. Mining mobility and settlement during an East African gold boom. *Mobilities*, 15(3), pp. 446–463.
- Chaloping-March, M. , 2017. *Social Terrains of Mine Closure in the Philippines*. London: Routledge.
- Ferguson, J. , 1999. *Expectations of Modernity: Myths and Meanings of Urban Life on the Zambian Copperbelt*. Berkeley, CA: University of California Press.
- Gough, K. , Yankson, P. & Esson, J. , 2019. Migration, housing and attachment in urban gold mining settlements. *Urban Studies*, 56(13), pp. 2670–2687.
- IIED (International Institute for Environment and Development) , 2002. *Breaking New Ground: Mining, Minerals and Sustainable Development (MMSD)*. London: Earthscan.
- Knierzinger, J. & Sopelle, I. , 2019. Mine closure from below: Transformative movements in two shrinking West African mining towns. *Extractive Industries and Society*, 6, pp. 145–154.
- Kotsadam, A. & Tolonen, A. , 2016. African mining, gender, and local employment. *World Development*, 83, pp. 325–339.
- Larmer, M. , 2010. Historical perspectives on Zambia's mining booms and busts. In Fraser A. & Larmer, M. (eds.), *Zambia, Mining and Neoliberalism: Boom and Bust on the Globalised Copperbelt*. New York: Palgrave Macmillan, pp. 31–58.
- Marais, L. , 2023. *The Social Impacts of Mine Closure in South Africa: Housing Policy and Place Attachment*. London: Routledge.
- Marais, L. , McKenzie, F. , Deacon, L. , Nel, E. , Van Rooyen, D. & Cloete, J. , 2018. The changing nature of mining towns: Reflections from Australia, Canada and South Africa. *Land Use Policy*, 76, pp. 779–788.
- Marais, L. , Nel, V. , Rani, K. , Van Rooyen, D. , Sesele, K. , Van der Watt, P. & Du Plessis, L. , 2021. Economic transitions in South Africa's secondary cities: Governing mine closures. *Politics and Governance*, 9(3), pp. 381–392.
- Mfune, O.K.-W.C. , Chansa-Kabali, T. , Chisola, C. & Manchisi, J. , 2020. The legacy of mine closure in Kabwe, Zambia: What can resilience thinking offer to the mining sustainability discourse? In Gasparatos, A. , Naidoo, M. , Ahmed, A. , Karanja, A. & Fukushi, K. (eds.), *Sustainability Challenges in Sub-Saharan Africa: Insights from Eastern and South Africa*. Singapore: Springer Nature, pp. 167–188.
- Ndaguba, E. & Marais, L. , 2023. A scientometric analysis of mine closure research. *Environment, Development and Sustainability*. (Accepted).
- Neil, C. , Tykkylainen, M. & Bradbury, J. (eds.), 1992. *Coping with Closure: An International Comparison of Mine Town Experiences*. London: Routledge.
- Obeng-Odoom, F. , 2009. Oil and urban development in Ghana. *African Review of Economics and Finance*, 1(1), pp. 18–39.
- O'Connor, L. & Ruddell, R. , 2021. After the downturn: Perceptions of crime and policing in the southeastern Saskatchewan oil patch. *The Canadian Geographer*, 5(3), pp. 281–291.
- Rubbers, B. , 2019. Mining towns, enclaves and spaces: A genealogy of worker camps in the Congolese copperbelt. *Geoforum*, 98, pp. 88–96.
- Storey, K. , 2001. Fly-in/fly-out and fly-over: Mining and regional development in Western Australia. *Australian Geographer*, 32(2), pp. 133–148.
- Van Assche, K. , Gruezmacher, M. & Granzow, M. , 2021. From trauma to fantasy and policy: The past in the futures of mining communities; the case of Crowsnest Pass, Alberta. *Resources Policy*, 72, p. 102050.
- Van Assche, K. , Gruezmacher, M. , Marais, L. & Perez Sindin-Lopez, Z. , 2024 (in press). *Resource Communities: Past Legacies and Future Pathways*. London: Routledge.
- Van der Watt, P. & Marais, L. , 2019. Normalising mining company towns in Emalahleni, South Africa. *The Extractive Industries and Society*, 6, pp. 1205–1214.
- Vivoda, V. , Kemp, D. & Owen, J. , 2019. Regulating the social aspects of mine closure in three Australian states. *Journal of Energy & Natural Resources Law*, 37(4), pp. 405–424.

Watson, A. & Olalde, M. , 2019. The state of mine closure in South Africa – What the numbers say. *Journal of the Southern African Institute of Mining and Metallurgy*, 119, pp. 639–645.

World Bank & IFC (International Finance Corporation) , 2002. *It's Not Over when It's Over: Mine Closure Around the World*. Washington, DC: World Bank Group's Mining Department, Global Mining.

A theoretical framework for understanding the social aspects of mine closure

Avis, W. , 2016. *Urban Governance*. (Topic guide). Birmingham: GSDRC (Governance and Social Development Resource Centre), International Development Department, College of Social Sciences, University of Birmingham.

Bainton, N. & Holcombe, S. , 2018. A critical review of the social aspects of mine closure. *Resources Policy*, 59(C), pp. 368–478.

Beunen, R. & Van Assche, K. , 2021. Steering in governance: Evolutionary perspectives. *Politics and Governance*, 9(2), pp. 365–368.33

Bryceson, D. & MacKinnon, D. , 2013. Eureka and beyond: Mining's impact on African urbanisation. *Journal of Contemporary African Studies*, 30(4), pp. 513–537.

Chaloping-March, M. , 2019. Mine closure: Anticipating the end before the beginning. In Chaloping-March, M. (ed.), *Social Terrains of Mine Closure in the Philippines*. Abingdon: Routledge, pp. 1–16.

Digby, C. , 2012. Mine closure through the 21st century looking glass. In Fourie, A.B. & Tibbett M. (eds.), *Mine Closure 2012: Proceedings of the Seventh International Conference on Mine Closure*. Perth: Australian Centre for Geomechanics, pp. 33–38.
https://doi.org/10.36487/ACG_rep/1208_04_Digby

England, J. & Albrecht, S. , 1984. Boomtowns and social disruption. *Rural Sociology*, 49(2), pp. 230–246.

Finsterbusch, K. & Freudenburg, W. , 2002. Social impact assessment and technology assessment. In Dunlap, R. & Michelson, W. (eds.), *Handbook of Environmental Sociology*. Westport: Greenwood Press, pp. 287–299.

Goffman, E. , 1971. *Relations in Public: Microstudies of the Public Order*. Harmondsworth: Penguin.

He, S. , Lee, J. , Zhou, T. & Wu, D. , 2016. Shrinking cities and resource-based economy: The economic restructuring in China's mining cities. *Cities*, 70, pp. 75–83.

Jones, M. & Mayzer, R. , 2021. A fifth wave? The changing nature of boomtown research. *The Extractive Industries and Society*, 8(2), p. 100893. <https://doi.org/10.1016/j.exis.2021.02.013>

Krasner, S. , 1984. Approaches to the state: Alternative conceptions and historical dynamics. *Comparative Politics*, 16(2), pp. 223–246.

Little, R. , 1976. Some social consequences of boom towns. *North Dakota Law Review*, 53(4), pp. 401–425.

Marais, L. , 2023. *The Social Impacts of Mine Closure in South Africa: Housing Policy and Place Attachment*. London: Routledge.

Marais, L. , Campbell, M. , Denoon-Stevens, S. & Van Rooyen, D. , 2021. *Mining and Community in the South African Platinum Belt: A Decade after Marikana*. New York: Nova Science.

Marais, L. , Denoon-Stevens, S. & Cloete, J. , 2020. Mining and urban sprawl in South Africa. *Land Use Policy*, 98, p. 103953.

Marais, L. , Ndaguba, E. , Mmbadi, E. , Cloete, J. & Lenka, M. , 2022. Mine closure, social disruption and crime in South Africa. *The Geographical Journal*, 188(3), pp. 383–400.

Martinez-Fernandez, C. , Chung-Tong, S. , Taira, N. & Vargas-Hernández, J. , 2012. The shrinking mining city: Urban dynamics and contested territory. *International Journal of Urban and Regional Research*, 36(2), pp. 245–260.

North, D. , 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.

North, D. , 2005. *Understanding the Process of Economic Change*. Princeton: Princeton University Press.

O'Connor, C. & Ruddell, R. , 2021. After the downturn: Perceptions of crime and policing. *The Canadian Geographer*. <https://doi.org/10.1111/cag.12671>

Sesele, K. & Marais, L. , 2023. Mine closure, women and crime in Matjhabeng, South Africa. *Geographical Research*, 61, pp. 18–31.

Shaw, C. & McKay, H. , 1942. *Juvenile Delinquency and Urban Areas*. Chicago: University of Chicago Press.

Smith, D. , Krannich, R. & Hunter, L. , 2001. Growth, decline, stability, and disruption: A longitudinal analysis of social well-being in four western Australian communities. *Rural Sociology*, 66(3), pp. 425–450.

Van Assche, K. , Beunen, R. & Duineveld, M. , 2014. *Evolutionary Governance Theory: An Introduction*. Heidelberg: Springer.

Van Assche, K. , Deacon, L. , Gruezmacher, M. , Summers, R. , Lavoie, S. , Jones, K. , Granzow, M. , Hallstrom, L. & Parkins, J. , 2017. Boom & Bust: Local Strategies for Big Events: A Community Survival Guide to Turbulent Times. Groningen/Edmonton: In Planning and University of Alberta, Faculty of Extension, Alberta.
<https://doi.org/10.17418/B.2017.9789491937330>

Van Assche, K. , Duineveld, M. , Gruezmacher, M. , Beunen, R. & Valentinov, V. , 2022. How can we govern if we don't see our feet? Speaking of the matter of sustainability transitions. *Journal of Environmental Policy & Planning*, 24(3), pp. 277–280.

Vivoda, V. , Kemp, D. & Owen, J. , 2019. Regulating the social aspects of mine closure in three Australian states. *Journal of Energy & Natural Resources Law*, 37(4), pp. 405–424.

Volimer, H. , 2013. *The Sociology of Disruption, Disaster and Social Change*. Cambridge: Cambridge University Press.

Wilkinson, K. , Reynolds, R. , Thompson, J. & Ostech, J. , 1982. Local social disruption and western energy development. *Pacific Sociological Review*, 25(3), pp. 275–296.

Mine closure policies and strategies in South Africa

Adler, R. , Claassen, M. , Godfrey, L. & Turton, R. , 2007. Water, mining and waste: An historical and economic perspective on conflict management in South Africa. *Economics of Peace and Security Journal*, 2(2), pp. 367–372.

CSIR (Council for Scientific and Industrial Research) , 2019. A CSIR perspective on South Africa's post-mining landscape. CSIR Report No. 16928. Pretoria: CSIR.

DMRE , 2021. Draft National Mine Closure Strategy, 2021. Government Gazette, Report no. 44607, 21 May.

Fourie, A. & Brent, A. , 2006. A project-based Mine Closure Model (MCM) for sustainable asset life cycle management. *Journal of Cleaner Production*, 12–13, pp. 1085–1095.

Freudenburg, W.K.K. , 1982. Increasing the impact of sociology on social impact assessment: Toward ending the inattention. *American Sociology*, 17, pp. 71–80.

Harrison, P. , 2001. The genealogy of South Africa's integrated development plan. *Third World Planning Review*, 23(2), pp. 175–193.

Jones, M. & Mayzer, R. , 2021. A fifth wave? The changing nature of boomtown research. *The Extractive Industries and Society*, 8(2), p. 100893.

Marais, L. , 2023. *The Social Impacts of Mine Closure in South Africa: Housing Policy and Place Attachment*. London: Routledge.

Marais, L. , Cloete, J. & Lenka, M. , 2022. The plight of mining cities in South Africa: Planning for growth and closure. *Cities*, p. 103965.

Marais, L. , Ndaguba, E. , Mmbadi, E. , Cloete, J. & Lenka, M. , 2022. Mine closure, social disruption and crime in South Africa. *The Geographical Journal*, 188(3), pp. 383–400.

Mhlongo, S. & Amponsah-Dacosta, F. , 2016. A review of problems and solutions of abandoned mines in South Africa. *International Journal of Mining, Reclamation and Environment*, 30(4), pp. 279–294.

Mpanza, M. , Adam, E. & Moolla, R. , 2021. A critical review of the impact of South Africa's mine closure policy and the winding-up process of mining companies. *The Journal for*

Transdisciplinary Research in Africa, 17(1), a985.

Oranje, M. & Nel, V. , 2022. Planning in the dark. In Marais, L. , Burger, P. , Campbell, M. , Denoon-Stevens S. & van Rooyen, D. (eds.), Coal and Energy in South Africa: Considering a Just Transition. Edinburgh: Edinburgh University Press.

Swart, E. , 2003. The South African legislative framework for mine closure. The Journal of the Southern Africa Institute of Mining and Metallurgy, October, pp. 489–492.

Watson, I & Olalde, M. , 2019. The state of mine closure in South Africa – What the numbers say. Journal of the Southern African Institute of Mining and Metallurgy, 119(7), pp. 639–645.

Department of Mineral Resources and Energy (DMRE) . 2021. Draft National Mine Closure Strategy, 2021. Government Gazette, Report no. 44607, 21 May.

Republic of South Africa , 1965. Atmospheric Pollution Prevention Act (No. 45 of 1965), Government Gazette.

Republic of South Africa . 1967. Mining Rights Act (No. 20 of 1967), National Gazette, Vol. 27, Report no. 434, Cape ++Town.

Republic of South Africa , 1975. Fanie Botha Accord, 1975, Chamber of Mines.

Republic of South Africa . 1996a. The Constitution of the Republic of South Africa (Act No. 108 of 1996), Government Gazette.

Republic of South Africa . 1996b. Mine Health and Safety Act (No. 29 of 1996), Government Gazette, No. 17242, Notice No. 96, Cape Town.

Republic of South Africa . 1991. Minerals Act (No. 50 of 1991), Government Gazette, Vol. 311, Report no. 13253, Cape Town.

Republic of South Africa . 1998a. National Environmental Management Act (No. 107 of 1998). Government Gazette, Report no. 19519, 1540. Cape Town.

Republic of South Africa , 1998b. National Environmental Management: Waste Act (No. 59 of 2008), Government Gazette, Vol. 525, Report no. 32000, Cape Town.

Republic of South Africa . 1998c. National Water Act (No. 36 of 1998), Government Gazette, Vol. 398, Report no. 19182, Cape Town.

Republic of South Africa . 1999. Nuclear Energy Act (No. 46 of 1999), Government Gazette, Vol. 414, Report no. 20759, Cape Town.

Republic of South Africa. 2002. Mineral and Petroleum Resources Development Act (MPRDA) (No. 28 of 2002), Government Gazette, Vol. 448, Report no. 23922, Cape Town.

Republic of South Africa . 2004. National Environmental Management: Air Quality Act (No. 39 of 2004), Government Gazette, Report no. 27318, 476. Cape Town.

Union of South Africa . 1956. Mines and Works Act (No. 27 of 1956), Printed in the Union of South Africa by Cape Times Ltd, Parow.

A scoping review of the literature on mine closure

Ackermann, M. , Botha, D. & Van der Waladt, G. , 2018. Potential socio-economic consequences of mine closure. TD: The Journal for Transdisciplinary Research in Southern Africa, 14(1), pp. 1–11.

Andrews-Speed, P. , Ma, G. , Shao, B. & Liao, C. , 2005. Economic responses to the closure of small-scale coal mines in Chongqing, China. Resources Policy, 30(1), pp. 39–54.

Arnstein, S.R. , 1969. A ladder of citizen participation. Journal of the American Institute of Planners, 35(4), pp. 216–224.

Axbard, S. , Poulsen, J. & Tolonen, A. , 2016. Extractive industries, production shocks and criminality: Evidence from a middle-income country. CDEP-CGEG Working paper 30, Center on Global Energy Policy. Columbia University, New York.

Bainton, N. & Holcombe, S. , 2018. A critical review of the social aspects of mine closure. Resources Policy, 59, pp. 468–478.

Beckett, C. , Dowdell, E. , Monosky, M. & Keeling, A. , 2020. Integrating socio-economic objectives for mine closure and remediation into impact assessment in Canada. Draft Report for the SSHRC Knowledge Synthesis Grant: Informing Best Practices in Environmental and Impact Assessment.

https://research.library.mun.ca/14487/1/KSG%20Grant_Full%20Report_FinalDraft_Mar31_2020

.pdf

- Costa, S. 2015. Social impacts of mine closure: Engaging employees and host communities in planning for closure. British Columbia Mine Reclamation Symposium, Norman B. Keevil Institute of Mining Engineering, University of British Columbia, Vancouver.
<https://open.library.ubc.ca/soa/cIRcle/collections/59367/items/1.0305870>
- Devenin, V. & Bianchi, C. , 2019. Characterising a mining space: Analysis from case studies in Chile and Australia. *Resources Policy*, 63, 101402.
- D'Silva, S. , & Norman, P. , 2015. Impacts of mine closure in Doncaster: An index of social stress. *Radical Statistics*, 112, pp. 23–33.
- Du, K. , Xie, J. , Khandelwal, M. & Zhou, J. , 2022. Utilisation methods and practice of abandoned mines and related rock mechanics under the ecological and double carbon strategy in China: A comprehensive review. *Minerals*, 12(9), 1065.
- Du Plessis, A. & Brent, A.C. , 2006. Development of a risk-based calculation model of mine closure cost. *Journal of the South African Industry of Mining and Metallurgy*, 106, pp. 443–450.
- Du Plessis, C. , & Brandon, P. , 2015. An ecological worldview as basis for a regenerative sustainability paradigm for the built environment. *Journal of Cleaner Production*, 109, pp. 53–61.
- Edraki, M. , Baumgartl, T. , Manlapig, E. , Bradshaw, D. , Franks, D.M. & Moran, C.J. , 2014. Designing mine tailings for better environmental, social and economic outcomes: A review of alternative approaches. *Journal of Cleaner Production*, 84, pp. 411–420.
<https://doi.org/10.1016/j.jclepro.2014.04.079>
- Faizuldayeva, Z. , 2016. A comparative study of regulatory approaches to mine closure with a special emphasis on the current situation in the former Soviet Union. *Mine Closure 2016, Proceedings of the 11th International Conference on Mine Closure*. Australian Centre for Geomechanics, University of Western Australia, Crawley.
https://papers.acg.uwa.edu.au/p/1608_25_Faizuldayeva/
- Finucane, S. , 2008. Thinking about the end before you start: Integrating mine closure planning into feasibility studies and environmental and social impact assessment: *Mine Closure 2008. Proceedings of the 3rd International Seminar on Mine Closure*, Australian Centre for Geomechanics University of Western Australia, Crawley.
https://papers.acg.uwa.edu.au/p/852_16_Finucane/
- Gamu, J. , Le Billon, P. & Spiegel, S. , 2015. Extractive industries and poverty: A review of recent findings and linkage mechanisms. *The Extractive Industries and Society*, 2(1), pp. 162–176. <https://doi.org/10.1016/j.exis.2014.11.001>
- George-Laurentiu, M. , Florentina-Cristina, M. & Andreea-Loreta, C. , 2016. The assessment of social and economic impacts associated to an abandoned mining site case study: Ciudanovita (Romania). *Procedia Environmental Sciences*, 32, pp. 420–430.
- Gordon, S.M. , 2015. Narratives unearthed, or, how an abandoned mine doesn't really abandon you. In Keeling, A. & Sandlos, J. (eds.), *Mining and Communities in Northern Canada: History, Politics, and Memory*. Calgary: University of Calgary Press, pp. 59–86.
- Haslam, P.A. & Tanimoune, N.A. , 2016. The determinants of social conflict in the Latin American mining sector: New evidence with quantitative data. *World Development*, 78, pp. 401–419.
- Healey, P. , 2003. Collaborative planning in perspective. *Planning Theory*, 2(2), pp. 101–123.
- Horowitz, L.S. , Keeling, A. , Lévesque, F. , Rodon, T. , Schott, S. & Thériault, S. , 2018. Indigenous peoples' relationships to large-scale mining in post/colonial contexts: Toward multidisciplinary comparative perspectives. *The Extractive Industries and Society*, 5(3), pp. 404–414.
- ICMM (International Council for Mining and Metals) , 2019. *Integrated Mine Closure: Good Practice Guide*. London: ICMM.
- Kemp, D. , 2010. Mining and community development: Problems and possibilities of local-level practice. *Community Development Journal*, 45(2), pp. 198–218.
- Kengni, B. & Nkosi, V. , 2023. Analysis of the current legal framework protecting the health of communities near gold mine tailings in South Africa. *Southern African Public Law*, 37(2).
<https://doi.org/10.25159/2522-6800/12919>
- Lamb, K. & Coakes, S. , 2012. Effective social planning for mine closure. *Mine Closure 2012: Proceedings of the 7th International Conference on Mine Closure*. Australian Centre for Geomechanics, University of Western Australia, Crawley.
https://papers.acg.uwa.edu.au/p/1208_53_Lamb/

Limpitlaw, D. , Aken, M. , Lodewijks, H. & Viljoen, J. , 2005. Post-mining rehabilitation, land use and pollution at collieries in South Africa. Paper presented at Colloquium: Sustainable Development in the Life of Coal Mining, South African Institute of Mining and Metallurgy, Boksburg, 13 July.

Lockie, S. , Franettovich, M. , Petkova-Timmer, V. , Rolfe, J. & Ivanova, G. , 2009. Coal mining and the resource community cycle: A longitudinal assessment of the social impacts of the Coppabella coal mine. *Environmental Impact Assessment Review*, 29(5), pp. 330–339. <https://doi.org/10.1016/j.eiar.2009.01.008>

Mackasey, W.O. , 2000. Abandoned Mines in Canada. WOM Geological Associates, Ontario. https://miningwatch.ca/sites/default/files/mackasey_abandoned_mines.pdf

Mactaggart, F. , McDermott, L. , Tynan, A. & Gericke, C. , 2016. Examining health and well-being outcomes associated with mining activity in rural communities of high-income countries: A systematic review. *Australian Journal of Rural Health*, 24(4), pp. 230–237. <https://doi.org/10.1111/ajr.12285>

Marais, L. , 2023. The Social Impacts of Mine Closure in South Africa: Housing Policy and Place Attachment. London: Routledge.

Marais, L. , Burger, P. , Campbell, M. , Denoon-Stevens, S.P. & Van Rooyen, D. , 2021. Coal and Energy in South Africa: Considering a Just Transition. Edinburgh: Edinburgh University Press.

Marais, L. , Ndaguba, E. , Mmbadi, E. , Cloete, J. & Lenka, M. , 2022. Mine closure, social disruption, and crime in South Africa. *The Geographical Journal*, 188(3), pp. 383–400. <https://doi.org/10.1111/geoj.12430>

McDonald, P. , Mayes, R. & Pini, B. , 2012. Mining work, family and community: A spatially-oriented approach to the impact of the Ravensthorpe Nickel Mine closure in remote Australia. *Journal of Industrial Relations*, 54(1), pp. 22–40. <https://doi.org/10.1177/0022185611432382>

McDonnell, E. , 2015. The co-constitution of neoliberalism, extractive industries, and indigeneity: Anti-mining protests in Puno, Peru. *The Extractive Industries and Society*, 2(1), pp. 11–123.

Mhlongo, S.E. & Ampomah-Dacosta, F. , 2016. A review of problems and solutions of abandoned mines in South Africa. *International Journal of Mining, Reclamation and Environment*, 30(4), pp. 279–294. <https://doi.org/10.1080/17480930.2015.1044046>

Mishra, S.K. , Hitzhusen, F.J. , Sohngen, B.L. & Guldman, J.M. , 2012. Costs of abandoned coal mine reclamation and associated recreation benefits in Ohio. *Journal of Environmental Management*, 100, pp. 52–58.

Monosky, M. & Keeling, A. 2021. Social considerations in mine closure: Exploring policy and practice in Nunavik, Quebec. *Northern Review*, 52, pp. 29–60.

Nkosi, V. , Wichmann, J. & Voyi, K. , 2015. Chronic respiratory disease among the elderly in South Africa: Any association with proximity to mine dumps? *Environmental Health*, 14, pp. 1–8.

Ntema, J. , Marais, L. , Cloete, J. & Lenka, M. , 2023. Mine closure in Matjhabeng in the Free State Goldfields, South Africa: Implications for households. *The Extractive Industries and Society*, 14, p. 101257.

Oakley, P. , 2018. After mining: Contrived dereliction, dualistic time and the moment of rupture in the presentation of mining heritage. *The Extractive Industries and Society*, 5(2), pp. 274–280.

O'Faircheallaigh, C. & Lawrence, R. , 2019. Mine closure and the aboriginal estate. *Australian Aboriginal Studies*, 1, pp. 65–82.

Oliveira, R. , Zanella, A. & Camanho, A.S. , 2020. A temporal progressive analysis of the social performance of mining firms based on a Malmquist index estimated with a benefit-of-the-doubt directional model. *Journal of Cleaner Production*, 267, p. 121807.

Owen, J.R. & Kemp, D. , 2017. *Extractive Relations: Countervailing Power and the Global Mining Industry*. London: Routledge.

Paricheh, M. & Osanloo, M. , 2017. A simulation-based framework for estimating probable open-pit mine closure time and cost. *Journal of Cleaner Production*, 167, pp. 337–345.

Parshley, J.V. & MacCallum, C.S. , 2016. Attractive nuisances and wicked solutions. Mine Closure 2016: Proceedings of the 11th International Conference on Mine Closure, Australian Centre for Geomechanics, University of Western Australia, Crawley. https://papers.acg.uwa.edu.au/p/1608_15_Parshley/

Perman, R. , 2003. *Natural Resource and Environmental Economics*. London: Pearson Education.

Phillips, J. , 2016. Climate change and surface mining: A review of environment-human interactions & their spatial dynamics. *Applied Geography*, 74, pp. 95–108.

Rossi, M. , Forget, M. , Gunzburger, Y. , Bergeron, K.M. , Samper, A. & Camizuli, E. , 2021. Trajectories of mining territories: An integrated and interdisciplinary concept to achieve sustainability. *The Extractive Industries and Society*, 8(1), pp. 1–7.

Sango, I. , Taru, P. , Mudzingwa, M. , & Kuvarega, A. , 2006. Social and biophysical impacts of Mhangura copper mine closure. *Journal of Sustainable Development*, 8(3), pp. 186–204.

Siyongwana, P.Q. & Shabalala, A. , 2019. The socio-economic impacts of mine closure on local communities: Evidence from Mpumalanga province in South Africa. *GeoJournal*, 84(2), pp. 367–380. <https://doi.org/10.1007/s10708-018-9864-5>

Strambo, C. , Aung, M. T. & Atteridge, A. , 2019. Navigating coal mining closure and societal change: Learning from past cases of mining decline. Working paper, Stockholm Environment Institute, Stockholm.

Sullivan, J. & Amacher, G.S. , 2009. The social costs of mineland restoration. *Land Economics*, 85(4), pp. 712–726.

Urkidi, L. , 2010. A glocal environmental movement against gold mining: Pascua-Lama in Chile. *Ecological Economics*, 70(2), pp. 219–227.

Utembe, W. , Faustman, E. , Matatiele, P. & Gulumian, M. , 2015. Hazards identified and the need for health risk assessment in the South African mining industry. *Human & Experimental Toxicology*, 34(12), pp. 1212–1221. <https://doi.org/10.1177/0960327115600370>

Druten, E. & Bekker, M.C. , 2017. Towards an inclusive model to address unsuccessful mine closures in South Africa. *Journal of the Southern African Institute of Mining and Metallurgy*, 117(5), pp. 485–490.

Van Eeden, E.S. , Liefierink, M. & Durand, J.F. , 2009. Legal issues concerning mine closure and social responsibility on the West Rand. *TD: The Journal for Transdisciplinary Research in Southern Africa*, 5(1), pp. 51–71.

Vargas, G.A. , 2019. Social mobilisation in Colombia's extractive industries, 2000–2015. *The Extractive Industries and Society*, 6(3), pp. 873–880.

Walter, M. & Urkidi, L. , 2017. Community mining consultations in Latin America (2002– 2012): The contested emergence of a hybrid institution for participation. *Geoforum*, 84, pp. 265–279.

Watson, I. & Olalde, M. , 2019. The state of mine closure in South Africa – What the numbers say. *Journal of the Southern African Institute of Mining and Metallurgy*, 119(7), pp. 639–645.

Winde, F. & Sandham, L.A. , 2004. Uranium pollution of South African streams: An overview of the situation in gold mining areas of the Witwatersrand, 61, pp. 131–149.

Wirth, P. & Harfst, J. , 2012. Challenges of Post-Mining Regions in Central Europe. München: IÖR. www2.ioer.de/recherche/pdf/2012_wirth_challenges_of_post-mining_regions.pdf

World Bank , 2021. Mine Closure: A Toolbox for Governments. Washington, DC: World Bank.

Miners' lives after retrenchment

Ackermann, A. , Botha, D. & Van der Walldt, G. , 2018. Potential socio-economic consequences of mine closure. *The Journal for Transdisciplinary Research in Southern Africa*, 14(1), p. a458. <https://doi.org/10.4102/td.v14i1.458>

Alec, B. , 2020. Mine closure narratives in the Free State Goldfields. Unpublished master's dissertation in Development Studies, University of the Free State, Bloemfontein.

CDS (Centre for Development Support) , 2006. Towards a post-mining economy in a small town: Challenges, obstacles and lessons from South Africa. In Centre for Development Support, Faculty of Economic and Management Sciences. Bloemfontein: University of the Free State.

Chandra, D. , 2014. A study on socioeconomic impact of retrenchment on workers – With special reference to Allahabad. *Management and Labour Studies*, 39(2), pp. 229–248.

Coffie, R.B. , Sardiya, A. , Ellis, F. & Akaadom, E. , 2021. Can downsizing correlate with community development? A complex adaptive systems approach. *Inkanyiso, Journal of Human and Social Sciences*, 13(2), pp. 181–198.

Cornelissen, H. , Watson, I. , Adam, E. & Malefetse, T. , 2019. Challenges and strategies of abandoned mine rehabilitation in South Africa: The case of asbestos mine rehabilitation. *Journal of Geochemical Exploration*, 205, art. no. 106354.

DMRE (Department of Mineral Resources and Energy) , 2021. Draft National Mine Closure Strategy. Pretoria: DMRE. www.envass.co.za/draft-national-mine-closure-strategy-2021/

Haney, M. & Shkaratan, M. 2003. Mine closure and its impact on the community: Five years after mine closure in Romania, Russia, and Ukraine, Policy Research Working Paper 3083. World Bank, Europe and Central Asia Region: Infrastructure and Energy Services Department.

IPPR (Institute for Public Policy Research) , 2017. Beneficiation in Namibia: Impacts, constraints and options. Windhoek, Namibia: IPPR.

LHR & FIDH (Lawyers for Human Rights & International Federation for Human Rights) , 2016 Blyvooruitzicht Mine Village: The Human Toll of State and Corporate Abdication of Responsibility in South Africa. www.lhr.org.za/wp-content/uploads/2020/01/Blyvoor-HRIA_Final-Low-Def.pdf

Maeko, T. , 2020a. Blyvooruitzicht: A glimmer of hope between the sewage, rats and fear. Mail & Guardian, 14 February.

Maeko, T. , 2020b. Blyvoor Gold to resume operations in April. Mail & Guardian, 14 February.

Magadzu, M. , 2021. Mine closure narratives in the West Rand. Unpublished master's dissertation in Development Studies, University of the Free State, Bloemfontein.

Marais, L. , 2013. The impact of mine downscaling on the Free State. Urban Forum, 24, pp. 503–521.

Marais, L. , 2023. The Social Impacts of Mine Closure in South Africa: Housing Policy and Place Attachment. London: Routledge.

Marais, L. , Ndaguba, E. , Mmbadi, E. , Cloete, J. & Lenka, M. , 2022. Mine closure, social disruption, and crime in South Africa. The Geographical Journal. doi: 10.1111/geoj.12430

Marais, L. , Pelser, A. , Botes, L. , Redelinghuys, N. & Benseler, A. , 2005. Public finances, service delivery, and mine closure in Koffiefontein (Free State, South Africa): From stepping stone to stumbling block. Town and Regional Planning, 48(S), pp. 5–16.

Martikainen, P. , Mäki, N. & Jäntti, M. , 2007. The effects of unemployment on mortality following workplace downsizing and workplace closure: A register-based follow-up study of Finnish men and women during economic boom and recession. American Journal of Epidemiology, 165(9), pp. 1070–1075.

Mörk, E. , Sjögren, A. & Svalery, H. , 2020. Consequences of parental job loss on the family environment and on human capital formation: Evidence from workplace closures. Labour Economics, 67, art. no. 101911.

Ndeleki, C.N. , 2018. The effects of mine downscaling (and closure) on the socioeconomic development of mining communities: The case of Oranjemund. Unpublished mini-dissertation, MA (Development Studies), Centre for Development Support, Faculty of Economic and Management Sciences, University of the Free State.

Nichols, A. , Mitchell, J. & Lindner, S. 2013. Consequences of Long-Term Unemployment. Washington, DC: The Urban Institute.

Pohlan, L. , 2019. Unemployment and social exclusion. Journal of Economic Behaviour and Organization, 164, pp. 273–299.

Posel, D. , Oyenubi, A. & Kollamparambil, U. , 2021. Job loss and mental health during the COVID-19 lockdown: Evidence from South Africa. PLoS One, 16(3), art. no. e0249352.

Rixen, A. & Blangy, S. , 2016. Life after Meadowbank: Exploring gold mine closure scenarios with the residents of Qamini'tuaq (Baker Lake), Nunavut. The Extractive Industries and Society, 3, pp. 297–312.

Tella, O. 2016. Understanding xenophobia in South Africa: The individual, the state and the international system. Insight on Africa, 8(2), pp. 142–158.

West Rand

AGSA (Auditor-General of South Africa) , 2009. Report to Parliament on a Performance Audit of the Rehabilitation of Abandoned Mines at the Department of Minerals and Energy. Cape Town: AGSA.

The Citizen , 2019. West Rand to tackle illegal mining through mining forum. The Citizen, 24 July.

Cole, M.J. & Broadhurst, J.L. , 2022. Sustainable development in mining communities: The case of South Africa's West Wits Goldfield. *Frontiers for Sustainable Cities*, 4, pp. 1–5.

Crankshaw, P. , 2002. Mining and minerals. In Lemon, A. & Rogerson, C. (eds.), *Geography and Economy in South Africa and its Neighbours*. Burlington: Ashgate, pp. 63–80.

Creamer, M. , 2019. West rand police did well to lift the lid off illegal mining “workshops”, now Barberton violence perpetrators must be exposed. *Mining Weekly*, 19 July. www.miningweekly.com/article/west-rand-police-did-well-to-lift-lid-off-illegal-mining-workshops-now-barberton-violence-perpetrators-must-be-exposed-2019-07-19.

ENCA (eNews Channel Africa) , 2013. Fochville on edge after protests, ENCA, 6 August. www.enca.com/south-africa/fochville-edge-after-protests

Gauteng Department: Treasury , 2022. Gauteng Province: Socio-Economic Review and Outlook 2022. Johannesburg: Gauteng Provincial Government.

Global Insight , 2021. Rex Explorer Database. Pretoria: Global Insight.

Gumede, B. , 2022. Tembisa protests, Krugersdorp anger raise fears of new wave of violence. *Mail & Guardian*, 2 August. <https://mg.co.za/news/2022-08-02-tembisa-protests-krugersdorp-anger-raise-fears/>

Kritzinger, A.S. , 2017. Socio-economic impact assessment of the proposed cessation of pumping and associated closure of the underground workings of the Ezulwini operations of Sibanye Gold. In Gauteng Province, Westonaria: Sibanye Gold Ltd.

Lusilao-Makiese, J. , Cukrowska, E. , Tessier, E. & Amouroux, D. , 2013. The impact of post gold mining on mercury pollution in the West Rand region, Gauteng, South Africa. *Journal of Geochemical Exploration*, 134, pp. 111–119.

Marais, L. , 2023. *The Social Impacts of Mine Closure in South Africa: Housing Policy and Place Attachment*. London: Routledge.

Marais, L. , Denoon-Stevens, S. & Cloete, J. , 2020. Mining towns and urban sprawl in South Africa. *Land Use Policy*, 98, p. 103953.

Marais, L. , Ndaguba, E. , Mmbadi, E. & Cloete, J. , 2022. Mine closure, social disruption, and crime in South Africa. *The Geographical Journal*, 188(3), pp. 383–400.

Mathebula, N. , 2014. Bekkersdal land invasion: Community won't budge. *Randfontein Herald*, 31 January. <https://randfonteinherald.co.za/149597/bekkersdal-land-invasion-community-wont-budge/>

MCLM (Merafong City Local Municipality) , 2021. Merafong city local municipality review of 2016–2021 integrated development Plan. Carletonville: Merafong City Local Municipality.

Neingo, P. & Tholana, T. , 2016. Trends in productivity in the South African gold mining industry. *Journal of the Southern African Institute of Mining & Metallurgy*, 116(3), pp. 283–290.

Olalde, M. , 2018. Mintails collapse: Case study in how not to close mines. *Oxpeckers Investigative Environmental Journalism*, 8 August. <https://oxpeckers.org/2018/08/mintails-collapse/>

Olalde, M. & Matikinca, A. , 2018. Directors targeted for Mintails mess. *Oxpeckers Investigative Environmental Journalism*, 12 December. <https://oxpeckers.org/2018/12/mintails-directors-targeted/>

Parliamentary Monitoring Group , 2017. List of 2453 Informal Settlements Gathered by NDHS [National Department of Human Settlements]. https://static.pmg.org.za/RNW86-2019-07-16_Annex_A.pdf

Pretorius, N. , 2021. Thirteen arrested in major illegal mining bust in West Rand District, *Randfontein Herald*, 14 January. <https://randfonteinherald.co.za/371795/thirteen-arrested-in-major-illegal-mining-bust-in-west-rand-district/>

Rademeyer, J. , 2022. Zama zamas just one part of a multibillion-rand organised crime economy that threatens SA. *Daily Maverick*, 26 May. www.dailymaverick.co.za/article/2022-08-07-zama-zamas-just-one-part-of-a-multibillion-rand-organised-crime-economy-that-threatens-sa/

Runciman, C. , Alexander, P. , Rampedi, M. & Moloto, B. , 2016. Counting police-recorded protests: Based on South African Police service data. Centre for Social Change. Johannesburg: University of Johannesburg.

SARS (South African Revenue Service) , 2023. SARS tax data. Pretoria: SARS.

Seleka, N. , 2021. “We don't want RDP houses, we want land”: Crowd clashes with cops over Rietvallei land invasion. *News24*, 24 May.

S&P Global Market Intelligence, 2019. Mining database, S&P.

Stats SA (Statistics South Africa) , 2016. Provincial Profile: Gauteng Community Survey. Pretoria: Stats SA.

Van Eeden, E.S. & Khaba, B. , 2016. Politicising service delivery in South Africa: A reflection on the history, reality and fiction of Bekkersdal, 1949–2015. *Journal for Contemporary History*, 41(2), pp. 120–143.

Visagie, J. , Turok, I. & Swartz, S. , 2021. What lies behind social unrest in South Africa, and what might be done about it. *The Conversation*, 18 August. <https://theconversation.com/what-lies-behind-social-unrest-in-south-africa-and-what-might-be-done-about-it-166130>

Vivoda, V. , Kemp, D. & Owen, J. , 2019. Regulating the social aspects of mine closure in three Australian states. *Journal of Energy & Natural Resources Law*, 37(4), pp. 1–22.

Winde, F. & Stoch, E. , 2010. Threats and opportunities for post-closure development in dolomitic gold mining areas of the West Rand and Far West Rand (South Africa): A hydraulic view: Part 1: Mining legacy and future threats. *Water SA*, 36, pp. 69–74.

WRDM (West Rand District Municipality) , 2021. West Rand District Municipality: Profile & Analysis: District Development Model. Randfontein: West Rand District Municipality.

Zulu, S. , 2017. Zenzele Informal Settlement residents damage 10 cars amid protest. *Eye Witness News*, 17 March. <https://ewn.co.za/2017/03/17/zenzele-informal-settlement-residents-block-r28-with-stones>

Zwane, T. , 2021. Municipal finances in state of crisis. *City Press*, 31 October. www.news24.com/citypress/business/municipal-finances-in-state-of-crisis-20211031

Matjhabeng

Atienza, M. , Lufin, M. & Soto, J. , 2021. Mining linkages in the Chilean copper supply network and regional economic development. *Resources Policy*, 70, p. 101154.

Binns, T. & Nel, E. , 2001. Gold loses its shine: Decline and response in the South African Goldfields. *Geography*, 86, pp. 255–260.

Binz, C. , Truffer, B. & Coenen, L. , 2016. Path creation as a process of resource alignment and anchoring: Industry formation for on-site water recycling in Beijing. *Economic Geography*, 92(2), pp. 172–200.

Bolowana, G. , 2013. Matjhabeng summit aims for green economy. *The New Age*, 6 December, p. 9.

Boschma, M. , 2017. Relatedness as driver of regional diversification: A research agenda. *Regional Studies*, 51(3), pp. 351–364.

Cortinovis, N. , Xiao, J. , Boschma, R. & van Oort, F. , 2017. Quality of government and social capital as drivers of regional diversification in Europe. *Journal of Economic Geography*, 17(6), pp. 1179–1208.

Da Silva, M. , 1999. The jewellery industry in South Africa. *Urban Forum*, 10(2), pp. 217–234.

Davenport, J. , 2013. *Digging Deep: A History of Mining in South Africa*. Johannesburg: Jonathan Ball Publisher.

Deacon, L. , Van Assche, K. , Papineau, J. & Gruezmacher, M. , 2018. Speculation, planning, and resilience: Case studies from resource-based communities in Western Canada. *Futures*, 104, pp. 37–46.

Denoon-Stevens, S. , 2019. Matjhabeng: Planning in the face of the Free State Goldfields decline. In Marais & Nel, V. (eds.), *Space and Planning in Secondary Cities: Reflections from South Africa*. Bloemfontein: SUN Press, pp. 115–140.

Fourie, F. , 2018. *The South African Informal Sector: Creating Jobs, Reducing Poverty*. Pretoria: HSRC Press.

Global Insight , 2020 Rex Explorer. www.ihsmarkit.co.za/Products/pdf/IHS%20Regional%20Explorer.pdf

Li, H. , Lo, K. & Wang, M. , 2015. Economic transformation of mining cities in transition economies: Lessons from Daqing, Northeast China. *International Development Planning Review*, 37(3), pp. 311–328.

Marais, L. , 2013a. The impact of mine downscaling in the Free State Goldfields. *Urban Forum*, 24, pp. 503–521.

Marais, L. , 2013b. Resources policy and mine closure in South Africa: The case of the Free State Goldfields. *Resources Policy*, 38, pp. 363–372.

Marais, L. & De Lange, A. , 2021. Anticipating and planning for mine closure in South Africa. *Futures*, 125, pp. 102669.

Marais, L. , Lenka, M. , Cloete, J. & Grobler, W. , 2016. Emfuleni. In Marais, L. , Nel, E. & Donaldson, R. (eds.), *Secondary Cities and Development*. London: Routledge, pp. 83–100.

Marais, L. & Nel, E. , 2016. The dangers of growing on gold: Lessons from the history of the Free State Goldfields, South Africa. *Local Economy*, 31(1–2), pp. 282–298.

Marais, L. , Nel, V. , Rani, K. , van Rooyen, D. , Sesele, K. , van der Watt, P. & du Plessis, L. , 2021. Economic transitions in South Africa's secondary cities: Governing mine closures. *Politics and Governance*, 9(2), pp. 381–392.

Marais, L. , van Rooyen, D. , Nel, E. & Lenka, M. , 2017. Responses to mine downscaling: Evidence from secondary cities in the South African Goldfields. *The Extractive Industries and Society*, 4, pp. 163–171.

Martinez-Fernandez, C. , Wu, C.-T. , Schatz, L. , Taira, N. & Vargas-Hernández, J. , 2012. The shrinking mining city: Urban dynamics and contested territory. *International Journal of Urban and Regional Research*, 36(2), pp. 245–260.

Matjhabeng Local Municipality , 2019. *Local Economic Development Strategy*. Welkom: Matjhabeng Local Municipality.

Nel, E. & Binns, T. , 2002. Decline and response in South Africa's Free State Goldfields: Local economic development in Matjhabeng. *International Development Planning Review*, 24(3), pp. 249–269.

North, D.C. , 1990. *Institutions, Institutional Change and Economic Development*. New York: Cambridge University Press.

Page, D. , 1969. *The O.F.S. goldfields: Planning for an emerging metropolis*. Unpublished master's dissertation, University of Stellenbosch.

SACN (South African Cities Network) , 2020. *Profiling Intermediate Cities in South Africa*. Johannesburg: SACN.

Sesele, K. & Marais, L. , 2023. Mine closure, women and crime in Matjhabeng, South Africa. *Geographical Research*, 61, pp. 18–31.

Sesele, K. , Marais, L. , van Rooyen, D. & Cloete, J. , 2021. Mine decline and women: Reflections from the Free State Goldfields. *The Extractive Industries and Society*, 8(1), pp. 211–219.

Turok, I. & Scheba, A. , 2020. Strengthening township economies in South Africa: The case for better regulation and policy innovation. *Urban Forum*, 31, pp. 77–94.

Welkom Municipality , 1968. *Welkom: Capital of the Orange Free State Goldfields*. Johannesburg: Felstar Publishers.

Welkom Municipality , 1989. *Welkom Structure Plan*. Welkom Municipality.

Kleinzee

Beunen, R. & Van Assche, K. , 2021. Steering in governance: Evolutionary perspectives. *Politics and Governance*, 9(2), pp. 365–368.

Business Day, 2019. Another Blow to Christo Wiese as Trans Hex Liquidates Diamond Mines. 21 October. www.businesslive.co.za/bd/companies/mining/2019-10-21-another-blow-to-christo-wiese-as-trans-hex-liquidates-diamond-mine/

Carstens, P. , 2001. *In the Company of Diamonds: De Beers, Kleinzee, and the Control of a Town*. Athens: Ohio University Press.

De Beers , 2009. *Report to Society 2009: Living Up to Diamonds*. www.debeersgroup.com/-/media/Files/D/De-Beers-Group-V2/documents/reports/library/rts09-full-report-may-2010pdfdownloadasset.PDF

Free to Grow , 2018. *Making Dreams a Reality: De Beers Zimele Celebrates Empowered Entrepreneurs*. <https://freetogrow.com/making-dreams-a-reality-de-beers-zimele-celebrates-empowered-entrepreneurs/>

Institute for Security Studies Crime Hub , 2022. *Local Crime Statistics*. <https://issafrica.org/crimehub/about-us/what-is-the-crime-hub>

Marais, L. , Campbell, M. , Denoon-Stevens, S. & Van Rooyen, D. , 2021. Mining and Community in the South African Platinum Belt: A Decade after Marikana. New York: Nova Science.

Marais, L. , Haslam McKenzie, F. , Deacon, L. , Nel, E. , Van Rooyen, D. & Cloete, J. , 2018. The changing nature of mining towns: Reflections from Australia, Canada and South Africa. *Land Use Policy*, 76, pp. 779–788.

Marais, L. , Ndaguba, E. , Mmbadi, E. , Cloete, J. & Lenka, M. , 2022. Mine closure, social disruption, and crime in South Africa. *The Geographical Journal*, 188(3), 383–400.

Nama Khoi Local Municipality , 2019. Integrated Development Plan (IDP) – Second Revision 2019/2020. www.namakwa-dm.gov.za/wp-content/uploads/2019/04/NDM-Draft-IDP-2019-2020-29-Mrt-2019-final.pdf

Netwerk24 , 2018. Mynbedrywighede tydelik in Namakwa gestaak [Mine Activities Stopped Temporarily]. www.netwerk24.com/Netwerk24/bedrywighede-eers-gestaak-20181128-4

Netwerk24 , 2019a. Crime Combated. www.netwerk24.com/netwerk24/za/kalahari-bulletin/nuus/crime-combated-20191112-4

Netwerk24 , 2019b. Sea Harvest spog met groei [Sea Harvest Boasts Growth]. www.netwerk24.com/netwerk24/za/weslander/sake/sea-harvest-spog-met-groei-20190313-2

Netwerk24 , 2022. Coastal Blast Row Re Ignites. www.netwerk24.com/netwerk24/za/weslander/nuus/coastal-blast-row-re-ignites-20220413-2

News24 , 2021. Northern Cape Man Arrested for Alleged Diamond Dealing. www.news24.com/news24/southafrica/news/northern-cape-man-arrested-for-alleged-diamond-dealing-20210321

North, D. , 2005. *Understanding the Process of Economic Change*. Princeton: Princeton University Press.

O'Connor, C. & Ruddell, R. , 2021. After the downturn: Perceptions of crime and policing. *The Canadian Geographer*. <https://doi.org/10.1111/cag.12671>

Parliamentary Monitoring Group , 2010. Report of the Select Committee on Economic Development on its oversight visit to Port Nolloth, Northern Cape, 01 June. <https://static.pmg.org.za/docs/2010/comreports/100819sceanomicreport.htm>

Stats SA (Statistics South Africa) , 2014. Mid-year population estimates. Statistical Release P0302. Pretoria: Statistics South Africa.

Stilwell, M. , 2011. Diamond mines are not forever. *Mail & Guardian*, 18 November. <https://mg.co.za/article/2011-11-18-diamond-mines-are-not-forever/>

Trenchard, T. , 2022. Diamond Diggers in South Africa's Deserted Mines Break the Law – And Risk Their Lives. www.npr.org/sections/goatsandsoda/2022/11/27/1132369294/diamond-diggers-in-south-africas-deserted-mines-break-the-law-and-risk-their-liv

Van der Watt, P. & Marais, L. , 2019. Normalising mining company towns in Emalahleni, South Africa. *The Extractive Industries and Society*, 6(4), pp. 1205–1214.

Van Dyk, J. , 2021. Diamonds are forever: (Re)building the archive of a prototypical mining town. Master's thesis in the Faculty of Arts and Social Sciences, Stellenbosch University.

Viking Aquaculture , n.d. Diamond Coast Aquaculture. www.vikingaquaculture.co.za/abalone/farming/

World Tourism Organization , 2018. *Tourism for development – Volume I: Key areas for action*. UNWTO, Madrid. <https://doi.org/10.18111/9789284419722>

Koffiefontein mine downscaling

Ackermann, M. , Botha, D. & Van der Walt, G. , 2018. Potential socio-economic consequences of mine closure. *Journal for Transdisciplinary Research in Southern Africa*, 14(1), pp. 1–11.

Atkinson, D. , Schenk, R. , Matebesi, Z. , Badenhorst, K. , Umejesi, I. & Pretorius, L. , 2016. Impacts on the social fabric. In Scholes, R. , Lochner, P. , Schreiner, G. , Snyman-Van der Walt, L. & De Jager, M. (eds.), *Shale Gas Development in the Central Karoo: A Scientific Assessment of the Opportunities and Risks*. Pretoria: CSIR (Council for Scientific and Industrial Research).

Bainton, N. & Holcombe, S. , 2018. A critical review of the social aspects of mine closure. *Resources Policy*, 59, pp. 368–478.

Campbell, M. , 2021. Perceptions of the impact of extractive industries on local government: The case of the Rustenburg mining town. In Marais, L. , Campbell, M. , Denoon-Stevens, S.P. & Van Rooyen, D. (eds.), *Mining and Community in the South African Platinum Belt: A Decade After Marikana*. Hauppauge, NY: Nova Science Publishers, pp. 119–140.

CDS (Centre for Development Support) , 2005. Koffiefontein Social Impact Assessment. Bloemfontein: University of the Free State.

De Beers , 2009. Report to society 2009: 4. Employees. www.debeersgroup.com/~media/Files/D/De-Beers-Group/documents/reports/library/rts09-employees-may-2010.PDF

Diamond Fields Advertiser, 1987. Koffie re-opening to cost R70-m over 2 years. 30 June, p. 11.

Erzurumlu, S.S. & Erzurumlu, Y.O. , 2015. Sustainable mining development with community using design thinking and multi-criteria decision analysis. *Resources Policy*, 46, pp. 6–14.

Haikola, S. & Anshelm, J. , 2020. Evolutionary governance in mining: Boom and bust in peripheral communities in Sweden. *Land Use Policy*, 93, p. 104056.

IISD (International Institute for Sustainable Development) , 2021. Global Review: Financial Assurance Governance for the Post-Mining Transition: Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development. www.iisd.org/system/files/2021-09/financial-assurance-governance-for-post-mining-transition.pdf

Kemp, D. , & Owen, J. , 2013. Community relations and mining: Core to business but not “core business”. *Resources Policy*, 38, pp. 521–523.

Letsemeng Local Municipality , 2020. Letsemeng Draft Integrated Development Plan 2021/2022. www.letsemeng.fs.gov.za/wp-content/uploads/2021/05/DRAFT-IDP-2021-2022.pdf

Marais, L. , Burger, P. , Campbell, M. , Denoon-Stevens, S. & Van Rooyen, D. , 2022. Is a just transition possible? In Marais, L. , Burger, P. , Campbell, M. , Denoon-Stevens, S. & Van Rooyen, D. (eds.), *Coal and Energy in Emalahleni, South Africa: Is a Just Transition Possible?* Edinburgh: Edinburgh University Press, pp. 230–238.

Marais, L. , Denoon-Stevens, S. & Cloete, J. , 2020. Mining towns and urban sprawl in South Africa. *Land Use Policy*, 98, p. 103953.

Marais, L. , Ndaguba, M. , Mmbadi, E. , Cloete, J. & Lenka, M. , 2022. Mine closure, social disruption and crime in South Africa. *The Geographical Journal*, 188(3), pp. 383–400.

Marais, L. , Pelser, A. , Botes, L. , Redelinghuys, N. & Benseler, A. , 2005. Public finances, service delivery and mine closure in Koffiefontein (Free State, South Africa): From stepping stone to a stumbling block. *Town and Regional Planning*, 48, pp. 5–16.

McGill, D.C. , 1991. *A History of Koffiefontein Town and Mine 1870 to 1902 and 1902 to 1980*. Kimberley: Northern Cape Printers.

Monosky, M. & Keeling, A. , 2021. Planning for social and community-engaged closure: A comparison of mine closure plans from Canada's territorial and provincial North. *Journal of Environmental Management*, 277, p. 111324.

News24 , 2023. Bridge is open. News24, 17 January. www.news24.com/news24/community-newspaper/express-news/bridge-is-open-20230117

Petra Diamonds , 2017. Social and Labour Plan: Koffiefontein Diamond Mine. www.petradiamonds.com/wp-content/uploads/KDM-SIGNED-SLP-DOCUMENT-ENGLISH-March-2021.pdf

RSA (Republic of South Africa) , 1996. *The Constitution of the Republic of South Africa (Act No. 108 of)*. Pretoria: Government Gazette.

Sesele, K. , Marais, L. , Van Rooyen, D. & Cloete, J. , 2021. Mine decline and women: Reflections from the Free State Goldfields. *The Extractive Industries and Society*, 8(1), pp. 211–219.

Siyongwana, P. & Shabalala, A. , 2018. The socio-economic impacts of mine closure on local communities: Evidence from Mpumalanga Province in South Africa. *GeoJournal*, 84, pp. 367–380.

Stats SA (Statistics South Africa) , 2011. *Census data*. Pretoria: Stats SA.

Syahrir, R. , Wall, F. & Diallo, P. , 2021. Coping with sudden mine closure: The importance of resilient communities and good governance. *The Extractive Industries and Society*, 8(4), p. 101009.

Alexkor and the Richtersveld community

Alexkor , 2012. Annual Report. www.alexkor.co.za

Alexkor , 2015. Annual Report. www.alexkor.co.za

Alexkor , 2020. Annual Report. www.alexkor.co.za

Almohsen, A.S. , 2015. Joint ventures in the oil and gas industry. Unpublished doctoral thesis, University of Calgary, Calgary.

Cargill, J. , 2010. Trick or Treat: Rethinking Black Economic Empowerment. Auckland Park: Jacana.

Commission of Inquiry into State Capture , 2022. Report: Part IV, Volume 1.

www.statecapture.org.za/site/files/announcements/654/State_Capture_Commission_Report_Part_IV_Vol_I.pdf

Constitutional Court of South Africa , 2003. Case CCT 19/03. In the case of Alexkor Limited and the Government of the Republic of South Africa versus The Richtersveld Community and Others, 14 October.

[https://collections.concourt.org.za/bitstream/handle/20.500.12144/2176/Full%20judgment%20\(445%20Kb\)-17491.pdf?sequence=1&isAllowed=y](https://collections.concourt.org.za/bitstream/handle/20.500.12144/2176/Full%20judgment%20(445%20Kb)-17491.pdf?sequence=1&isAllowed=y).

CRLR (Commission on Restitution of Land Rights) , 2018. Status Report Richtersveld.

<https://pmg.org.za/committee-meeting/27996/>

DALRRD (Department of Agriculture, Land Reform and Rural Development) , 2022.

Presentation to the Select Committee on Public Enterprises and Communication, 8 June.

<https://pmg.org.za/committee-meeting/35181/?via=homepage-feature-card>.

DPE (Department of Public Enterprises) , 2006. Statement by DPE: A. Erwin and Richtersveld community sign Memorandum of Understanding, 26 October. www.gov.za/erwin-and-richtersveld-community-sign-memorandum-understanding

Farrell, P.E. , 2014. The 7 deadly sins of joint ventures. Entrepreneur, 2 September.

www.entrepreneur.com/article/236987

Fife, T. , 2013. Richtersveld restitution implementation challenges. Land divided: Land and South African Society in 2013, in comparative perspective. Paper presented at conference "Land Divided: Land and South African Society in 2013, in Comparative Perspective", University of Cape Town, 24–27 March.

Footanstey , 2022. Joint Ventures: What are the Key Governance Issues? 19 February.

www.footanstey.com/our-insights/articles-news/joint-ventures-what-are-the-key-governance-issues/

Joubert, P. , 2007. Richtersvelders split over deal with Erwin. Mail & Guardian, 20 September.

LCC (Land Claims Court of South Africa) , 2007a. Deed of Settlement: Land Claims Court of South Africa 151/98. In the matter between the Richtersveld Community and Alexkor Limited and the Government of the Republic of South Africa, 9 October.

LCC (Land Claims Court of South Africa) , 2007b. Unanimous Resolution of the Interim Joint Board appointed in terms of clause 8.4 of the Deed of Settlement, 22 April. Signed 31 August.

Market News , 2007. Dispute over De Beers' SW African diamond deal. Market News, 28 February.

PMG (Parliamentary Monitoring Group) , 2017. Report of the Portfolio Committee on Public Enterprises on Budget Vote 9: Public Enterprises, and the Annual Performance Plan for 2018/19 of the Department of Public Enterprises, 10 May. <https://pmg.org.za/tailed-committee-report/3333/>

PMG (Parliamentary Monitoring Group) , 2019a. Presentation by the Department of Rural Development and Land Reform to the select committee on Communications and Public Enterprises, 27 February. <https://pmg.org.za/committee-meeting/27996/>

PMG (Parliamentary Monitoring Group) , 2019b. Alexkor progress report on Deed of Settlement obligations. Report to NCOP Public Enterprises and Communication Committee, 6 November. <https://pmg.org.za/committee-meeting/29268/>

PMG (Parliamentary Monitoring Group) , 2020a. State-owned companies update; DPE 2019/20 Quarter 3 performance, Public Enterprises, 26 February. <https://pmg.org.za/committee-meeting/29899/>

PMG (Parliamentary Monitoring Group) , 2020b. Alexkor Administrator on Outcomes of Forensic Investigation and Turnaround Plan, 27 May. <https://pmg.org.za/committee-meeting/30317/>

PMG (Parliamentary Monitoring Group) , 2020c. Presentation by DPE on: Forensic Investigation at Alexkor and Progress Made in Implementing Turnaround Strategy to Portfolio Committee, 11 November. <https://pmg.org.za/committee-meeting/31459/>

PMG (Parliamentary Monitoring Group) , 2021. Research Report on Alexkor Deed of Settlement and Community Structures, 1 March. https://static.pmg.org.za/210303Brief_on_Alexkor_Deed_of_Settlement_and_Community_Structures.pdf

PMG (Parliamentary Monitoring Group) , 2022. Alexkor & Richtersveld Community Deed of Settlement Progress Report, 8 June. <https://pmg.org.za/committee-meeting/35181/?via=homepage-feature-card>

Sida !hub CPA (Communal Property Association) , 2007. Annual Report.

Sida !hub CPA (Communal Property Association) , 2010. Development Plan 2010. Volume III. Developed by P. Van der Watt & M. Feldman for Sida !hub CPA.

Tshikondeni

Cornish, L. , 2012. Tshikondeni – Almost time to say goodbye: Hot seat. Inside Mining, 1 August.

CSIR (Council for Scientific and Industrial Research) , 2019. New Public-Private Partnership for Socioeconomic Change Launched in Limpopo, 30 October. www.csir.co.za/new-public-private-partnership-socioeconomic-change-launched-limpopo

Exxaro , 2011. Integrated Report. <https://exxaro-prod.azureedge.net/sitestorage/media/hz4kv0zf/annual-report-2011.pdf>

Exxaro , 2012. Integrated Report. <https://exxaro-prod.azureedge.net/sitestorage/media/h3jlvn2i/integrated-report.pdf>

Exxaro , 2014. Integrated Report. <https://exxaro-prod.azureedge.net/sitestorage/media/5oajd5ep/integrated-report.pdf>

Exxaro , 2018a. Post mine closure investment project: Tshikondeni legacy and micro-grid project. Our Communities. <http://exxaro2018miningindaba.ixd.co.za/our-communities.html>

Exxaro , 2018b. Supplementary Report. <https://exxaro-prod.azureedge.net/sitestorage/media/er5ccyzs/supplementary-report.pdf>

Exxaro , 2020. Environmental, Social and Governance Report. <https://exxaro-prod.azureedge.net/sitestorage/media/25rhai1d/environmental-social-and-governance-report.pdf>

Kone, L. , 2019. Administration of socio-economic aspects of mine closure. Unpublished doctoral thesis, University of Fort Hare, Ellis.

Lane, A. , Guzek, J. & van Antwerpen, W. , 2015. Tough choices facing the South African mining industry. Journal of the Southern African Institute of Mining and Metallurgy, 115(6), pp. 471–479.

Legal Resources Centre , 2021. Stop the Bantustans Campaign: Taking the Traditional and Khoi-San Leadership Act 3 of 2019 to Court. <https://lrc.org.za/wp-content/uploads/LRC-TKLA-englishWEB.pdf>

Machaka, T. , 2019. Impact Catalyst to drive change in Limpopo. Capricorn FM, 30 October. www.capricornfm.co.za/impact-catalyst-set-to-drive-change-in-limpopo/

Mahabane, I. , 2022. The (un)just transition. Brunswick Review, 15 March. www.brunswick-group.com/mxolisi-mgojo-exxaro-net-zero-i20846/

Mpanza, M. , Adam, E. , & Moolla, R. , 2021. A critical review of the impact of South Africa's mine closure policy and the winding-up process of mining companies. Journal for Transdisciplinary Research in Southern Africa, 17(1), pp. a985.

Odendaal, N. , 2019. Sustainability initiative transforming former mining village into economic hub. Miners Weekly, 19 July. www.minersweekly.com/article/miners-sustainability-initiative-aims-to-transform-former-mining-village-2019-07-05

Perkins, D. , Cooper, T. , Scholtz, L. & Mulaudzi, K. , 2020. Mine closure and rehabilitation in South Africa: Activating coalitions of the willing for a just future. Briefing paper to WWF-South Africa, Cape Town.
https://wwfafrica.awsassets.panda.org/downloads/mine_closure_and_rehabilitation_in_south_africa.pdf

RSA (Republic of South Africa) , 1996. The constitution of the republic of South Africa (Act No. 108 of 1996). Government Gazette.

RSA (Republic of South Africa) , 2022 Mine community resettlement guidelines. Government Gazette, 22 March.

Siyongwana, P. & Shabalala, A. , 2019. The socio-economic impacts of mine closure on local communities: Evidence from Mpumalanga province in South Africa. *GeoJournal*, 84, pp. 367–380.

Stevens, P. , 2023. From state capture to Makuya community capture. *Chronicle*, 27 May. www.chronicle.co.zw/from-state-capture-to-makuya-community-capture-ramaphosa-asked-to-intervene/

Tambo, O. & Theobald, S. , 2018. Financial provisioning for rehabilitation and mine closure: A study of South African platinum and coal mining companies. Intellidex, funded by the Centre for Environmental Rights (CER). <https://fulldisclosure.cer.org.za/2018/wp-content/uploads/2018/06/Intellidex-financial-provisioning-for-rehabilitation-and-closure-in-SA-mining.pdf>

Tshikhudu, E. , 2018. Many jobs to be created as Makuya project starts. *Zoutnet*, 12 November. <https://zoutnet.co.za/articles/news/48645/2018-11-12/many-jobs-to-be-created-as-makuya-project-starts>

Tshitangoni, M. & Francis, J. , 2016. Pillars of resilience of traditional leadership in Vhembe District of Limpopo Province. *Journal of Social Sciences*, 46(3), pp. 241–250.

Watson, I. & Olalde, M. , 2019. The state of mine closure in South Africa: What the numbers say. *Journal of the Southern African Institute of Mining and Metallurgy*, 119(7), pp. 639–645.

Emalahleni's just transition

Auditor-General , 2022. Emalahleni: Audited financial statements. Pretoria: Auditor-General.

Bond, P. & Erion, G. , 2009. South Africa carbon trading: A counterproductive climate change strategy. In McDonald, D. (ed.), *Electric Capitalism: Recolonising Africa on the Power Grid*. London: Earthscan, pp. 338–358.

Burkhardt, P. , 2019. South African Coal Exports Seen Waning as Renewables Gather Pace. New York: Bloomberg Markets.

Burton, J. , Caetano, T. & McCall, B. , 2018. Coal transitions in South Africa: Understanding the implications of a CO2-compatible coal phase-out plan for South Africa. Energy Research Centre. Cape Town: University of Cape Town.

Campbell, M. , Nel, V. & Mpambukeli, T. , 2017. A thriving coal mining city in crisis? The governance and spatial planning challenges at Witbank, South Africa. *Land Use Policy*, 62, pp. 223–231.

Cronje, F. , 2019. The Whole Nine Yards: Profiling South Africa's Provinces. Johannesburg: Centre for Risk Analysis.

Crous, C. , Owen, J.R. , Marais, L. , Khanyile, S. & Kemp, D. , 2021. Public disclosure of mine closures by listed South African mining companies. *Corporate Social Responsibility and Environmental Management*, 28(3), pp. 1032–1042. <https://doi.org/10.1002/csr.2103>

Denoon-Stevens, S.P. & Du Toit, K. , 2022. The health impacts of coal mining and coal-based energy. In Marais, L. , Burger, P. , Campbell, M. , Denoon-Stevens, S.P. & Van Rooyen D. (eds.), *Coal and Energy in South Africa: Considering a Just Transition*. Edinburgh: Edinburgh University Press, pp. 102–119.

DMRE (Department of Mineral Resources and Energy) , 2019. Integrated Resource Plan. Pretoria: DMRE.

DMRE (Department of Mineral Resources and Energy) , 2021. Draft National Mine Closure Strategy. Report no. 446. Pretoria: Department of Mineral Resources and Energy.

Erasmus, D. , 2022. SA's climate ambitions will cost mining sector, says Minerals Council. Business Day, 10 May, p. 11.

Eskom , 2022. Coal fire stations. <https://www.eskom.co.za/eskom-divisions/gx/coal-fired-power-stations/>

Global Insight , 2021. Rex Explorer. Pretoria: Global Insight.

IASS/IET/CSIR , 2022. From coal to renewables in Mpumalanga: Employment effects, opportunities for local value creation, skills requirements, and gender-inclusiveness. Assessing the co-benefits of decarbonising South Africa's power sector. COBENEFITS Executive Report. Potsdam/Pretoria. www.cobenefits.info

Joubert, L. , 2019. "Religious commitment" to coal could scuttle SA economy. Daily Maverick, 17 September.

Kanyane, M.H. , 2016. Interplay of intergovernmental relations conundrum. In Plaatjies, D. , Chitiga-Mabugu, M. , Hongoro, C. , Meyiwa, T. , Nkondo M. & Francis Nyamnjoh, F. (eds.), State of the Nation – South Africa 2016: Who Is In Charge? Mandates, Accountability and Constellations in the South African State. Pretoria: HSRC Press, pp. 91–106.

Magidimisha-Chipungu, H.H. & Chipungu, L. , 2021. Urban Inclusivity in Southern Africa. Cham: Springer.

Marais, L. , Burger, P. , Campbell, M. , Denoon-Stevens, S.P. & Van Rooyen, D. , 2022. Coal and Energy in South Africa: Considering a Just Transition. Edinburgh: Edinburgh University Press.

Marais, L. , & De Lange, A. , 2021. Anticipating and planning for mine closure in South Africa. Futures, 125, p. 102669

Marais, L. , Ndaguba, E. , Mmbadi, E. , Cloete, J. & Lenka, M. , 2022. Mine closure, social disruption and crime in South Africa. The Geographical Journal, 188(3), pp. 383–400.

Monbiot, G. , 2017. Out of the Wreckage: A New Politics for an Age of Crisis. London: Verso.

Nel, E. , Marais, L. & Mqotyana, Z. , 2023. The regional implications of just transition in the world's most coal-dependent economy: The case of Mpumalanga, South Africa. Frontiers in Sustainable Cities, 4, p. 1059312.

PCC (Presidential Climate Commission) , 2022a. Laying the foundation for a just transition framework for South Africa. Pretoria: Presidential Climate Commission. February. www.climatecommission.org.za/publications/laying-the-foundation-for-a-just-transition-framework-for-south-africa

PCC (Presidential Climate Commission) , 2022b. Just Transition Framework for South Africa. July. Pretoria: Presidential Climate Commission. www.climatecommission.org.za/just-transition-framework

Stats SA (Statistics South Africa) , 2023. Sustainable Development Goal (SDG) 7: Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for All. Pretoria: Stats SA.

Stevens, C. , 2019. Provincial Governments are Not Intervening When They are Supposed To: The Case of Emalahleni Local Municipality. Cape Town: Dullah Omar Institute.

TIPS , 2021. Beyond Coal. Opportunities to Diversify the Economies of Emalahleni and Steve Tshwete Local Municipalities. Pretoria: TIPS.

Triglia, C. , 2001. Social capital and local development. European Journal of Social Theory, 4(4), pp. 427–442.

Van der Watt, P. & Marais, L. , 2019. Normalising mining company towns in Emalahleni, South Africa. The Extractive Industries and Society, 6(4), pp. 1205–1214.

Van der Watt, P. & Marais, L. , 2021. Implementing social and labour plans in South Africa: Reflections on collaborative planning in the mining industry. Resources Policy, 71, p. 101984.

Vivoda, V. , Kemp, D. & Owen, J. , 2019. Regulating the social aspects of mine in three Australian states. Journal for Energy and Natural Resources Law, 37(4), pp. 405–424.

Von Holdt, K. , 2013. South Africa: The transition to violent democracy. Review of African Political Economy, 40(138), pp. 589–604.

Rustenburg

- Comaroff, J. & Comaroff, J. , 2009. *Ethnicity Inc.* Chicago: University of Chicago Press. Cook, S.E., 2013.
- Community management of mineral resources: The case of the Royal Bafokeng Nation . *Journal of the Southern African Institute of Mining and Metallurgy*, 113(1), pp. 61–66.
- Crous, C. , Owen, J.R. , Marais, L. , Khanyile, S. & Kemp, D. , 2020. Public disclosure of mine closures by listed South African mining companies. *Corporate Social Responsibility and Environmental Management*, 28(3), pp. 1032–1042.
- De Lange, A. , 2019. The unintended consequences and spatial implications of mining down-scaling in South Africa – A case of mining in Merafong City Local Municipality. Master's thesis, University of the Free State, Bloemfontein.
<https://scholar.ufs.ac.za/bitstream/handle/11660/10284/DeLangeA.pdf?sequence=1&isAllowed=y>
- ICMM (International Council for Mining and Metals) , 2008. *Planning for Integrated Mine Closure: Toolkit.* London: ICMM.
- Kgajane, I. , 2022. Rustenburg mining community marches against unemployment and lack of service delivery. SABC News. www.youtube.com/watch?v=TCBoNdXaYUE&list=PPSV
- Lagercrantz, H. & Khabbaz, S. , 2019. The platinum boom in Rustenburg and the bust of the community: A case study of the natural resource curse in South Africa. Bachelor thesis, Linnaeus University, Sweden. <https://lnu.diva-portal.org/smash/get/diva2:1342757/FULLTEXT02.pdf>
- Macdonald, C. , McGuire, G. & Weston, H. , 2006. *Integrated Closure Planning Review: Literature Review.* London: International Council on Mining and Metals (ICMM).
- Marais, L. , Campbell, M. , Denoon-Stevens, S. & Van Rooyen, D. (eds.), 2021. *Mining and Community in the South African Platinum Belt: A Decade after Marikana.* New York: Nova Science.
- Marais, L. & De Lange, A. , 2021. Anticipating and planning for mine closure in South Africa. *Futures*, 125, p. 102669.
- Marais, L. , Ntema, J. , Cloete, J. & Lenka, M. , 2021. Mine housing, assets and informality in Rustenburg: Implications of mine closure. In Marais, L. , Campbell, M. , Denoon-Stevens, S. & Van Rooyen, D. (eds.), *Mining and Community in the South African Platinum Belt: A Decade after Marikana.* New York: Nova Science.
- Maritz, J. , Oranje, M. , Van Huyssteen, E. & Nel, V. , 2021. Planning for a post-mining future in the Rustenburg region and the transition towards it? In Marais, L. , Campbell, M. , Denoon-Stevens, S. & Van Rooyen, D. (eds.), *Mining and Community in the South African Platinum Belt: A Decade after Marikana.* New York: Nova Science.
- Matebesi, S.Z. , 2020. *Social Licensing and Mining in South Africa.* New York: Routledge.
- Mayes, R. , 2014. Mining and (sustainable) local communities: Transforming Ravensthorpe, Western Australia. In Brueckner, M. , Durey, A. , Mayes, R. & Pforr, C. (eds.), *Resource Curse or Cure? On the Sustainability of Development in Western Australia.* Heidelberg: Springer, pp. 223–237.
- Mbenga, B. & Manson, A. , 2010. "People of the Dew": A History of the Bafokeng of Phokeng-Rustenburg Region, South Africa, from Early Times to 2000. Johannesburg: Jacana. Moerane, B., 2020.
- North West municipalities owed billions for rates and taxes . SABC News, 5 March. www.sabcnews.com/sabcnews/north-west-municipalities-owed-billions-for-rates-and-taxes/
- Molotlegi, K.L. , 2009. RBN review: State of the RBN address. Opening of the Supreme Council, Royal Bafokeng Nation.
www.rbnoperationsroom.com/home/static/en_US/id/513/title/rbn+review+speech+annual+state+of+the+rbn+address.html
- Mosiane, N. , 2021. Livelihoods, the body, and the space of Phokeng, Rustenburg. In Marais, L. , Campbell, M. , Denoon-Stevens, S. & Van Rooyen, D. (eds.), *Mining and Community in the South African Platinum Belt: A Decade after Marikana.* New York: Nova Science, pp. 39–70.
- Ntema, J. , 2019. Rustenburg: Boom and bust in a mining town. In Marais, L. & Nel, V. (eds.), *Space and Planning in Secondary Cities: Reflections from South Africa.* Bloemfontein: Sun Media, pp. 203–217.
- Oranje, M. , Nel, V. , Van Huyssteen, E. & Maritz, J. , 2021. A brief history of platinum mining with a focus on the Rustenburg region. In Marais, L. , Campbell, M. , Denoon-Stevens, S. & Van

Rooyen, D. (eds.), *Mining and Community in the South African Platinum Belt: A Decade after Marikana*. New York: Nova Science.

RLM (Rustenburg Local Municipality) , 2021. IDP Review: Financial Year 2021/2022. Rustenburg: Rustenburg Local Municipality.

RLM (Rustenburg Local Municipality) , 2022. Draft Five Year IDP – 2022/2027. Rustenburg: Rustenburg Local Municipality.

Royal Bafokeng Nation Operations Room , 2023. Who are the Royal Bafokeng Nation? www.rbnoperationsroom.com/home/static/en_US/id/6/title/who+are+the+royal+bafokeng+nation.html

Tau, P. , 2020. “Rustenburg is not a place of hope any more” – Community devastated by massive job cuts in mining industry. City Press, 12 February. www.news24.com/city-press/news/rustenburg-is-not-a-place-of-hope-any-more-community-devastated-by-massive-job-cuts-in-mining-industry-20200212

Van der Watt, P. & Marais, L. , 2021. Implementing social and labour plans in South Africa: Reflections on collaborative planning in the extractive industry. *Resources Policy*, 71, p. 101984.

Vivoda, V. , Kemp, D. & Owen, J. , 2019. Regulating the social aspects of mine closure in three Australian states. *Journal of Energy and Natural Resources Law*, 37(4), pp. 405–424.

Watson, A. & Olalde, M. 2019. The state of mine closure in South Africa – What the numbers say. *Journal of the Southern African Institute of Mining and Metallurgy*, 11(7), pp. 639–645.

World Bank , 2020. *Coal Mine Closure and a Just Transition for All*. Washington, DC: World Bank.

World Bank & IFC (International Finance Corporation) , 2002. *It's Not Over when It's Over: Mine Closure Around the World*. Washington, DC: World Bank Group's Mining Department, Global Mining.

Rustenburg

Chinguno, C. , 2013. *Marikana and the Post-Apartheid Workplace Order*. University of the Witwatersrand: Society Work and Development Institute. <https://bit.ly/2q2yqJ4>

Dzerefos, C.M. , 2021. A participatory approach to developing environmental literacy to protect the freshwater resources used by African Apostolic faith communities. The Conservation Symposium, Pietermaritzburg. 1–5 November. www.youtube.com/watch?v=PzUGFJZdyqq

Forrest, K. 2015. Rustenburg's labour recruitment regime: shifts and new meanings. *Review of African Political Economy*, 42(146), pp. 508–525.

Hay, A. & Dzerefos, C.M. , 2022. Recognising the sacredness of nature to promote education for sustainable development. *Indilinga: African Journal of Indigenous Knowledge Systems*, 21(1), pp. 39–53. <https://rb.gy/nzuvmg>

Implats , (2013). *Impala Accommodation Strategy*. [Online]. <https://implats.co.za/pdf/presentations/2013/impala-accomodation-strategy-5-december-2013.pdf>, accessed on 10 June 2021.

Levine, D. (ed.), 1971. *Simmel: On Individuality and Social Forms*. Chicago: University of Chicago Press.

Malauquais, D. , 2007. Douala/Johannesburg/New York: *Cityscapes imagined*. In Murray, M.J. & Myers, G.A. (eds), *Cities in contemporary Africa*. London: Palgrave Macmillan.

Marais, L. , 2023. *The Social Impacts of Mine Closure in South Africa: Housing Policy and Place Attachment*. London: Routledge.

Marais, L. , Campbell, M. , Denoon-Stevens, S. & Van Rooyen, D. , 2021. *Mining and Community in the South African Platinum Belt: A Decade after Marikana*. New York: Nova Science.

Mosiane, N. , 2021. *Livelihoods, the body and the space of Phokeng, Rustenburg*. In Marais, L. , Campbell, M. , Denoon-Stevens, S. & Van Rooyen, D. (eds.), *Mining and Community in the South African Platinum Belt: A Decade after Marikana*. New York: Nova Science.

Mosiane, N. , 2023. *Remaking of the historical Rustenburg landscape*. In Mosiane, N. , Murray, J. , Peberdy, S. , Sithagu, A. & Dzerefos, M.C. (eds.), *Landscapes of Peripheral and Displaced Urbanisms: GCRO Research Report*. Johannesburg: Gauteng City-Region Observatory.

Staff Reporter , 2023. Water crisis in Rustenburg persists. Platinum Weekly. www.platinum-weekly.co.za/article.php?id=7452&categoryID=8
StatsSA , 2011. Census 2011 Community Profiles. Pretoria: Statistics South Africa. www.statssa.gov.za/

A framework for understanding the social aspects of mine closure in South Africa

- Anglo American , 2019. Mine Closure Toolbox. Version 3. www.angloamerican.com/~media/Files/A/Anglo-American-Group/PLC/sustainability/mine-closure-toolbox-version-3-2019.pdf
- Anglo American , 2023. Ensuring a Lasting Legacy. www.angloamerican.com/our-stories/environment/ensuring-a-lasting-legacy
- Atienza, M. , Arias-Loyola, M. & Phelps, N. , 2021. Gateways or backdoors to development? Filtering mechanisms and territorial embeddedness in the Chilean copper GPN's urban system. *Growth and Change*, 52(1), pp. 88–110.
- Crous, C. , Owen, J. , Marais, L. , Khanyile, S. & Kemp, D. , 2020. Public disclosure of mine closures by listed South African mining companies. *Corporate Social Investment and Environmental Management*, 28(3), pp. 1032–1042.
- Digby, C. , 2012. Mine closure through the 21st century looking glass. In Fourie, A. (ed.), *Proceedings of the 7th International Conference on Mine Closure*. Perth: Australian Centre for Geomechanics, pp. 33–38.
- DMRE . 2021. Draft Mine Closure Strategy. Pretoria: DMRE.
- Marais, L. , 2023. The Social Impacts of Mine Closure in South Africa: Housing Policy and Place Attachment. London: Routledge.
- Marais, L. , Ndaguba, M. , Mmbadi, E. , Cloete, J. & Lenka, M. , 2022. Mine closure, social disruption and crime in South Africa. *Geographical Journal*, 188(3), pp. 383–400.
- Marais, L. , Nel, V. , Rani, K. , Van Rooyen, D. , Sesele, K. , Van der Watt, P. & Du Plessis, L. , 2021 Economic transitions in South Africa's secondary cities: Governing mine closures. *Politics and Governance*, 9(2), pp. 381–392
- O'Connor, L. & Ruddell, R. , 2021. After the downturn: Perceptions of crime and policing in the southeastern Saskatchewan oil patch. *The Canadian Geographer*, 5(3), pp. 281–291.
- Pallagst, K. , Wiechmann, T. & Martinez-Fernandez, C. , 2014. *Shrinking Cities: International Perspectives and Policy Implications*. New York: Routledge.
- Pretorius, A. & Blaauw, D. , 2022. Residents' perceptions of coal mining and energy generation. In Marais, L. , Burger, P. , Campbell, M. , Denoon-Stevens, S.P. , & Van Rooyen, D. (eds.), *Coal and Energy in South Africa: Considering a Just Transition*. Edinburgh: Edinburgh University Press, pp. 135–149.
- Smith, D. , Krannich, R. & Hunter, L. , 2001. Growth, decline, stability, and disruption: A longitudinal analysis of social well-being in four western Australian communities. *Rural Sociology*, 66(3), pp. 425–450.
- Van Assche, K. , Gruezmacher, M. & Deacon, L. , 2020. Land use tools for tempering boom and bust: Strategy and capacity building. *Land Use Policy*, p. 103994.
- Van der Watt, P. & Marais, L. , 2019. Normalising mining company towns in Emalahleni, South Africa. *The Extractive Industries and Society*, 6(4), pp. 1205–1214.
- Vivoda, V. , Kemp, D. & Owen, J. , 2019. Regulating the social aspects of mine closure in three Australian states. *Journal of Energy & Natural Resources Law*, 37(4), pp. 405–424.