

Africa's Mineral Fortune

The Science and Politics of Mining and
Sustainable Development

**Edited by Saleem H. Ali, Kathryn
Sturman, and Nina Collins**

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

earthscan
from Routledge

Contents

List of contributors viii

Introduction 1
SALEEM H. ALI AND KATHRYN STURMAN

PART I

The politics of African mining 7

1 Harmonizing African resource politics? Lessons from
the African Minerals Development Centre 9
RODGER BARNES, KOJO BUSIA, AND MARIT KITAW

2 Evaluating conflict risks in Africa's resource governance 28
KATHRYN STURMAN AND FITSUM WELDEGIORGIS

3 Chinese mining in Africa and its global controversy 45
BARRY SAUTMAN AND YAN HAIRONG

4 *Field vignette.* Moving from prescriptive to performance-
based regulation: the case of waste management 63
ANDY FOURIE, MWIYA SONGOLO, AND JAMES MCINTOSH

5 *Field vignette.* Ghana's policy on artisanal and small-scale
mining 65
BENJAMIN ARYEE

PART II

**Data and models: supporting strategic planning for
Africa's minerals** 69

6 Developing accurate and accessible geoscientific data for
sustainable mining in Africa 71
JUDITH A. KINNAIRD AND RAYMOND J. DURRHEIM

7	Challenges in measuring the local and regional contributions of mining: lessons from case studies in Rwanda, Zambia, and Ghana	86
	JULIA HORSLEY, SHABBIR AHMAD, AND MATTHEW TONTS	
8	Measuring transformative development from mining: a case study of Madagascar	119
	FITSUM WELDEGIORGIS AND CRISTIAN PARRA	
9	<i>Field vignette.</i> The Extractives Dependence Index and its impact on Africa	146
	DEGOL HAILU AND CHINPIHOI KIPGEN	
10	<i>Field vignette.</i> The West African Exploration Initiative (WAXI) as a model for collaborative research and development	148
	M. W. JESSELL AND THE WAXI TEAM	
 PART III		
Environment, health, and innovation		
11	Conservation priorities and extractive industries in Africa: opportunities for conflict prevention	153
	MAHLETTE BETRE, MARIELLE CANTER WEIKEL, ROMY CHEVALLIER, JANET EDMOND, ROSIMEIRY PORTELA, ZACHARY WELLS, AND JENNIFER BLAHA	
12	Ebola and other emerging infectious diseases: managing risks to the mining industry	182
	OSMAN A. DAR, FRANCESCA VILIANI, HISHAM TARIQ, EMMELINE BUCKLEY, ABBAS OMAAR, ELOGHENE OTOBO, AND DAVID L. HEYMAN	
13	Mineral investment decision-making in Africa: a real options approach in integrating price and environmental risks	195
	KWASI AMPOFO AND ALIDU BABATU ADAM	
14	The potential of Zambian copper-cobalt metallophytes for phytoremediation of minerals wastes	208
	ANTONY VAN DER ENT, PETER ERSKINE, ROYD VINYA, JOLANTA MESIASZ- PRZYBYŁOWICZ, AND FRANÇOIS MALAISSE	
15	<i>Field vignette.</i> South Africa's underground women miners	228
	ASANDA BENYA	
16	<i>Field vignette.</i> Sapphire mining, water, and maternal health in Madagascar	230
	LYNDA LAWSON	

PART IV

Reconciling scales of mining governance	235
17 Strategies for working with artisanal and small-scale miners in sub-Saharan Africa	237
NINA COLLINS AND LYNDA LAWSON	
18 Artisanal and small-scale mining community health, safety, and sanitation: a water focus	264
DANELLE LYNAS, GERNELYN LOGROSA, AND BEN FAWCETT	
19 Gauging the effectiveness of certification schemes and standards for responsible mining in Africa	282
RENZO MORI JUNIOR	
20 <i>Field vignette.</i> The Australia-Africa Minerals and Energy Group (AAMEG)	297
TRISH O'REILLY	
21 <i>Field vignette.</i> Sourcing “conflict-free” minerals from Central Africa	300
STEVEN B. YOUNG	
Conclusion: a multifaceted fortune	302
KATHRYN STURMAN AND SALEEM H. ALI	
<i>Index</i>	305