

Preface

In South Africa, acid mine drainage (AMD) has become a highly contested issue as a technical and scientific matter. Also contested are its policy implications for the mining sector, water security and socio-economic sustainability. What is more complicating is that a difference in its definition exists between two groups of role-players, namely, the South African government on the one hand and consultants/activists/NGOs on the other hand. This book explains these differences, the situation of AMD in each of the three basins of the Witwatersrand goldfields, in the Vaal River System, South Africa and the socio-economic implications caused by AMD. It was found that these definitions determine how the issue is understood and what solutions these role-players propose. One of the main objectives was to determine whether the South African government's policy response is appropriate given the socio-economic impacts of AMD and imperatives of sustainable development. The conclusions include no clear indication in policy as to what the socio-economic impacts are and how they should be responded to. While most of the studies on AMD in South Africa are in the fields of engineering, chemistry, hydrology and mining management, this book's approach is from a social science perspective and not entirely from a technical point of view. This approach is still underdeveloped, and only a few South African researchers/activists have done similar research.

Water is the most crucial resource and is important to ensure that the basic needs of South Africans are satisfied. Safe clean water for drinking and for the sectors that assist in attaining South Africans' other basic needs, such as in areas of agriculture and mining is vitally important for economic growth. South Africa's water systems are already severely harmed by climate change, different forms of pollution and poorly managed sewerage systems. Therefore, water as a resource will become much scarcer in the future. South Africa is reportedly the 30th driest country in the world, with an average annual rainfall of about 460 mm. In recent years, South Africa has been exposed to water shortages, and these conditions will only worsen in the future.

The mining industry constitutes a large part of the research, including its contribution to the AMD problem and how it can assist in addressing it. The research

conducted for this book involved experts from government departments, environmental activists, the private sector, tourism and agriculture. Policy recommendations are included in response to the many socio-economic impacts which were not addressed in the key policy documents on AMD. The significance is that not much research has been done so far from a social science perspective on this topic, and therefore it leaves a gap in the available research. The public relevance of this topic is increasing daily in view of the alarming predictions about water security in the future, and climate change is complicating it even more.

The foundation laid with this research can be developed more comprehensively later on. Water management in South Africa is challenged by many factors: increasing levels of pollution caused by dysfunctional local municipal sewerage systems, industrial waste, agricultural run-offs, climate change, demands on food security and AMD in coal and gold-mining areas. Water security issues are already prevalent in KwaZulu-Natal and Gauteng. In KwaZulu-Natal (Durban), the possibility of water shedding, due to the lack of rain, is already contemplated. Goal 6 of the United Nations' new *2030 Agenda for Sustainable Development* provides a global framework for analysing the South African predicament.

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Development Actors, Policy Impacts, and Broader
Implications

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