

Hydraulic Fracturing in the Karoo – Book Launch Tuesday 14 December, Law Faculty Quad (Level 3)

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At the outset I wish to add my congratulations to the authors, editors and publishers of this book. It has arrived at a critical moment in South Africa's quest for energy, which is closely linked to jobs and development, and on a more sobering note in some quarters, the insatiable appetite for wealth. There is good and bad in the mix and then some more too. 'Brilliant and complicated' is the way a UK visiting professor in water resources summed up her visit to South Africa last week. It was to use the same quote to describe this book: 'brilliant and complicated'. It provides a range of useful baseline information to form a compendium of knowledge and experience of unconventional gas and oil extraction from other parts of the world, but it also reveals the limitations of our current knowledge about the Karoo systems in what lies on the surface and what lies beneath. We have to face up to the fact that our local knowledge of the Karoo is limited, yet we are faced with circumstances that demand a rapid response to the energy demand. Development and environment is complicated. The book doesn't set out the arguments for or against fracking but cleverly highlights the complex nature and interaction of the physical, social and economic landscape of South Africa. It repeatedly makes reference to the precautionary principle in law and, for me, identifies the need to find the pause button. The contribution is timely. I particularly want to acknowledge and thank Jan Glazewski for championing this project. I egged him on from the side lines, and so did others, but also knew how difficult it was going to be in keeping the project alive during times when it seemed as if hydraulic fracturing could well be ditched as an energy option. I am so pleased Jan that you kept going even during the uncertainty.

We live in a reactive society where the weight of multiple issues bear down on us constantly. The result is often observed in the chaos of short term decision making that is made with insufficient knowledge, limited human capacity and capital investment, and where governance systems and regulatory structures are fragile at best. It is against these and other circumstances that the book

explores critical themes and approaches in hydraulic fracturing. A number of chapters focus on water supply, management and potential impacts of hydraulic fracturing. Water is key to the ability of this industry to extract gas and oil. I quote from the book, 'the threats that hydraulic fracturing holds for water availability and quality have arguably been the most important concern raised in the debate surrounding government's decision to proceed with exploration and extraction'.

I wonder if the public reaction to hydraulic fracturing would have been the same if it were possible to operate at sea or at least in wetter parts of the country. Yet here we have a conundrum: the exploration is taking place in a high risk hydroclimatic environment of the Karoo where fresh water is and has been a major constraint to socio-economic development. The current technology will require water to be transported or reticulated to sites of operation. Once it is there it will be required to be treated so as to prevent surface and groundwater contamination. Let me remind you too that groundwater is still the most important source of water that is used in the Karoo, not only for agricultural use but also for domestic and municipal use. Yet our knowledge of surface water flows and ecological data from numerous ephemeral rivers and pans in the Karoo is limited and poorly understood. How can you then model or predict the impacts without the key data sources. Those of you working in this field will also know how difficult it is to acquire hydrological and ecological data and the time necessary to achieve reliability.

Over and over again the book highlights the absence of baseline data and therefore challenge of determining the impacts of oil and gas exploration and extraction. There are numerous uncertainties and it is good that these issues are raised in detail in this book. It also explores the added complication of monitoring water, treatment and managing water once hydraulic fracturing operations are under way. You won't fail to ask: do we have the capacity to regulate this industry and will the public have the right to know?

The final chapter sums up the position that we find ourselves with all the limitations of our knowledge and inability to predict the impacts of hydraulic fracturing. We need a risk averse and cautious approach that takes into account the limitations of our current knowledge. I conclude that we need a pause button. For 20 000 years people have adapted to the bioclimatic constraints of

the Karoo and it will be a tragedy if the water resources of the Karoo are compromised for future generations while in pursuit of non-renewable energy sources. Read this book and share it with the decision makers and investors – it just might help to do things differently and in a more sustainable way. This is its contribution to thinking and future practice.