



## Desertification: Past, Current and Future Trends

By Victor R Squires and Ali Ariapour (Editors), 2018, Nova Science Publishers Inc., New York, United States 269 pages, ISBN 978-1-53614-212-9 (hardcover), price US\$ 145.00 (approximately R2 150.00)

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Desertification, which is generally regarded as a special case of land degradation, has been an issue of global concern for decades. Some would even suggest that the international environmental treaties, such as the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Convention on Biodiversity (UNCBD), have their roots in the desertification crisis of the Sahel in the mid-1970s, in which hundreds of thousands of people and their livestock suffered. Certainly, the United Nations Convention to Combat Desertification (UNCCD), which was adopted in 1994, emerged out of international efforts to address the problems of land degradation in the drylands of the world, particularly those in Africa. Several books on the desertification theme have recently been published (e.g. Behnke and Mortimore 2016; Reed and Stringer 2016) with more in the offing (e.g. Glantz 2020). It is clearly a highly topical issue and this contribution, edited by Victor Squires and Ali Ariapour, is both timely and relevant to the debate.

The book is comprised of 10 chapters, six of which are either authored or co-authored by the editors. Because of their background and experience, case studies from Iran and China have a stronger emphasis in this volume than is usually the case. However, the first chapter by John Oswald and Sarah Harris provides a very useful and balanced global overview of the desertification debate, which I would recommend as necessary reading for anyone wishing to undertake research in this field. The origins, definitions and critiques of the term 'desertification' are discussed and the contribution that the study of desertification has made to all three of the United Nations conventions listed above, as well as the more recent Sustainable Development Goals, is up to date and helpful. This chapter also outlines clearly the indirect and direct drivers of land-cover change and provides a brief, but valuable guide to the different approaches available for identifying and monitoring desertification from remotely sensed images.

South Africans will also be pleased with the inclusion of a chapter on the changing narrative on desertification and degradation in South Africa by Graham von Maltitz, Lehman Lindeque and Klaus Kellner. Their review provides a fresh perspective on the debate and is notable for the inclusion of some of the findings from the comprehensive FAO-funded, Land Degradation Assessment in Drylands (LADA) project that was initiated in South Africa in the first decade of the 21st century. What is especially useful in this analysis, is the formal inclusion of invasive alien plants and bush encroachment as key indicators of degradation, as well as a section on the South African policy framework, which has been established to address issues of desertification and mitigate the effects of drought in the region.

Aziz Hirche and 13 colleagues, mostly from North Africa provide an interesting account of long-term changes in the arid steppe vegetation of the three Maghreb countries of Algeria, Tunisia and Morocco. Despite the recent increase in rainfall in the region these authors argue that species richness and total cover of vegetation has declined significantly since 1978, primarily as a result of overgrazing. They suggest that their field-based measurements are at odds with the conclusions derived from remote sensing studies, which, in general, suggest that cover, and net primary production has increased in recent years. Because of the importance of the Sahel and the marginal environments of the Sahara in any desertification debate, their conclusions are worthy of greater exposure and further analysis.

Another novel contribution is provided by Daniel Neary from the Rocky Mountain Research Station in the United States who outlines in some detail, the potential contribution that wildfires make to desertification at a range of spatial scales. He shows, for areas in the American south west, how the area burnt by wildfires per decade has increased by more than three orders of magnitude since 1990, and describes this impact on soil erosion and land degradation in the region. Fire is not traditionally considered a significant driver of desertification, but Daniel Neary makes the case for it to be taken more seriously by researchers and practitioners alike, especially in areas where fire is a common feature in the landscape.

The remaining chapters led by Ali Ariapour and Victor Squires, outline the extent of desertification, primarily in Iran and China, and describe how local people have adapted to living in hot, dry environments. The main focus in these contributions, however, is to document the extensive efforts that have been undertaken to prevent or even reverse land degradation in these countries. Although an extensive list is provided of the large-scale, state-led actions taken to prevent or mitigate the effects of land degradation, for example in China's Kubuqi Desert region, a deeper and more critical analysis of such interventions would have been helpful. It is difficult to assess the success and transferability of such initiatives when the narrative is so unreservedly favourable in its tone and content.

There is a short vignette in the second last chapter by Victor Squires on the role of grazing ruminants in desertification processes, whereas the final chapter by the two editors provides a brief summary of the key take home messages in the book. They suggest that, although the word 'desertification' might have given way to the more inclusive term 'land degradation' the environmental problems faced by many communities in the drylands of the world, as a result of changes in both abiotic and biotic factors, remain urgent.

There are a number of useful chapters in this book that summarise several of the key issues involved in desertification studies and provide access to the literature from parts of the world that have not received a great deal of attention to date. These contributions would have been enhanced, however, had greater attention been paid to grammar, style, readability and uniformity of layout, especially in terms of the figures and graphs. In addition, an analytical overview of the desertification theme, as is promised in the title of this book, would be expected to contain some geographical context. This requires clear, easily interpreted maps to inform readers of the seriousness of the degradation issues involved and how these might have changed over space and time. Unfortunately, despite the inclusion of more than 30, potentially very useful maps in the book, most are unreadable, either because of the low resolution of the text in the legends, or because it was often impossible to distinguish one shade of grey from another on the map itself. Complicated, remotely sensed images, with

several different land use or vegetation cover classes can rarely be interpreted correctly using grey-scale gradations and for this reason are usually produced in colour. Authors, editors and publishers contributing to this field should be aware of this expensive requirement and, if possible, should prepare accordingly. The overall impact of this book would have been significantly improved had greater attention been given to the more technical side of its production.

## References

- Behnke R, Mortimore M (eds). 2016. *The end of desertification?* Berlin, Germany: Springer-Verlag.
- Glantz MH (ed.). 2020. *Desertification: environmental degradation in and around arid lands*. Boca Raton, Florida, United States: CRC Press.
- Reed MS, Stringer LC (eds). 2016. *Land degradation, desertification and climate change*. London, United Kingdom: Routledge.

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