

role to play in a transition towards more sustainable management of global resources. LCA must be used with care to be effective in such a transition. LCA is often used to compare the environmental impacts of competing products. However, if none of the options offered is sustainable, are we asking the wrong question? If our society's level of consumption is unsustainable, and LCA succeeds in reducing the rate of this consumption, it will not necessarily result in any benefit in the long term. The authors point out that in this context it is necessary to differentiate between a 'significant benefit' and a 'negligible benefit'.

We are reminded several times in the text that making carbon-only assessments increases the risk of developing technology and policy which ignores a range of other serious environmental impacts. Here LCA can potentially assist to systematically avoid 'burden shifting'. Accounting for all life-cycle stages can help to prevent impacts from being 'shifted' in time. Accounting for a range of impact categories concurrently can help to prevent problems being effectively shifted to other areas which are not being accounted for. A topical example of burden shifting is when poorly planned measures to mitigate CO<sub>2</sub> emissions lead to a serious reduction in biodiversity.

*Life Cycle Assessment – Principles, Practice and Prospects* is an accessible and thought-provoking book. It would be hoped that it contributes to an awareness of the importance of reflective LCA practice, as opposed to shallower alternatives. With such a broad scope there are naturally many areas which

are not covered in depth. However, each chapter is well referenced, providing numerous jump-off points for further research. Business and government representatives will appreciate the discussions of policy and regulation in the context of LCA. Readers with a deep concern for sustainable environmental management will find much of value in the treatment of LCA. The book is also highly recommended to students with an interest in resource management. The authors' passion for the subject is tangible. They offer the reader a hopeful vision for the future and a set of tools and ideas to help bring it about.

## Notes

1. [www.cfd.rmit.edu.au](http://www.cfd.rmit.edu.au)
2. Those who are seeking an LCA textbook might wish to refer to *The Hitch Hiker's Guide To LCA* (Baumann & Tillman, 2004). To explore the LCA methodology, the ISO standards are recommended (ISO 2006a), (ISO 2006b)

## References

- Baumann, H and A Tillman 2004. *The Hitch Hiker's Guide to LCA: An Orientation in Life Cycle Assessment Methodology and Application*. Lund, Sweden: Studentlitteratur.
- ISO 2006a. 14040:2006. *Environmental management – Life cycle assessment – Principles and framework*. Geneva: International Organisation for Standardisation.
- ISO 2006b. 14044:2006. *Environmental management – Life cycle assessment – Requirements and guidelines*. Geneva: International Organisation for Standardisation.

# Empowering

Angus Morrison-Saunders

## ***The Power of Sustainable Thinking: How to Create a Positive Future for the Climate, the Planet, Your Organization and Your Life*, by Bob Doppelt**

Earthscan, London, 2008; Hardback ISBN 9781844075959, £16.99

It was the title of this inspiring book that drew me to it. There is certainly power in the 'S' word that becomes evident when attempting to undertake a sustainability assessment instead of traditional environmental impact assessment (EIA), although I

generally refer to this phenomenon as the 'magic of sustainability'. In such an assessment, the power or magic lies in deliberating on what 'sustainability' or sustainable development means for a particular proposal or decision; doing so seems to always open up interesting possibilities beyond those considered in more conventional EIA processes.

This book is not actually addressed at impact assessment practitioners or stakeholders. Rather, it 'is about the process of new thinking and change' that will 'help individuals and groups institute effective global warming and sustainability communications, behavioural change and policy initiatives' (p. xviii). In short, it is a book about education and empowerment for individuals and groups to modify their personal behaviours in order to reduce greenhouse gas emissions and to be as sustainable as possible. I would classify it in the genre of 'environmental

---

Angus Morrison-Saunders is a Senior Lecturer in Environmental Assessment, Murdoch University, Murdoch, WA 6150, Australia; e-mail: a.morrison-saunders@murdoch.edu.au

education'. Its relevance to impact assessment practitioners is in terms of their working as change agents within IA processes, through inspiring and influencing others by their individual actions and personal behaviours or ways of being (i.e. 'walking the talk').

Bob Doppelt is very passionate about individuals taking responsibility for their own immediate learning, values and behaviours in the name of sustainability. Following a brief account of the familiar sustainability problems created and faced by humans (represented primarily in the form of climate change), he draws on psychological principles to explain how humans learn, think and act. The book is structured in this sequence and ends with chapters that frame sustainability or sustainable thinking as ethical and moral choices, and how to effectively motivate others (both individuals and teams or

organisations) to think sustainably. Along the way, he offers examples from his personal life to illustrate the points being made, which serves to make the book's content accessible and easy to read.

The book draws on recent data and studies both in terms of sustainability and psychology and is very informative. At times, though, some sweeping generalisations are made or 'facts' are strongly stated that are not substantiated. I also found the emphasis on climate change a bit frustrating (i.e. ultimately true sustainability thinking demands an holistic approach to the issue). However, the intention of the book is sound and ultimately highly motivating. I can recommend this to anyone who struggles to stay positive and motivated or simply to 'keep going' in the face of the sustainability issues and challenges we face – overall, the book is helpful and empowering.

## A mega-book for mega-mines

Theo Hacking

### *Mining and the Environment: From Ore to Metal* by Karlheinz Spitz and John Trudinger

CRC Press, 2008, 891 pages, ISBN-13: 978-0-415-46510-6, US\$120

This is the book equivalent of some of the mega-mines that are featured between its covers. In 22 chapters spanning almost 900 pages the authors cover everything from acid mine drainage to zinc. Fortunately, they have endeavoured to make the book readable and accessible by extensively using graphics and diagrams, including a series of colour plates at the beginning; inserting numerous case studies in text boxes; placing an overview of a metal as a footnote to the title pages of each chapter; and adding marginal notes to highlight key points in the text. However, in a book of this length, lists of tables, figures, case studies and appendices would have been useful additional navigational aids.

The title of the book may be somewhat misleading for some prospective readers. First, the term 'environment' may not convey the coverage of sustainability/sustainable development or social

aspects, both of which are given some prominence. Second, there is some coverage of non-metals, such as diamonds and coal. Upon reading it becomes apparent that the authors favour a broad definition of 'environment' which includes social aspects, although they sometimes also use 'environmental and social'. In a field burdened by definitional ambiguities and disciplinary 'turf wars', they would have been well advised to clarify their stance more explicitly. On the subject of 'turf wars', social specialists may be disappointed by the lack of prominence given to SIA as a process alongside EIA, and 'greens' may find ample reason to fear the dilution of their interests, whereas proponents of sustainable development are likely to be reasonably satisfied by the attempts towards 'integration'. Ensuring that most readers will be (dis)satisfied some of the time is, perhaps, a praiseworthy achievement.

Of particular interest to the readers of *IAPA* is likely to be the guidance on EIA and its application to mining, which goes beyond a general description of the overall process. There are chapters covering specific components, such as public participation, describing the environmental baseline, identifying and evaluating impacts, and environmental management systems, monitoring and auditing – all tailored for application to mining. Also included are practical tools in tables and appendices, and advice based on the authors' experience concerning the relationship between consultants and their clients, for example. EIA specialists who are unfamiliar with

---

Theo Hacking is a Senior Research Associate at the Centre for Sustainable Development, Department of Engineering, University of Cambridge, and is based at the Cambridge Centre for Energy Studies, 14 Trumpington Street, Cambridge CB2 1QA, UK; e-mail: th252@cam.ac.uk