

# Reviews and resources



**Decentralised Wastewater Treatment Systems and Sanitation in Developing Countries: A Practical Guide**  
Ulrich, A., Reuter, S. and Gutterer, B. (eds) with Sasse, L., Panzerbieter, T. and Reckerzügel, T. (contributors)  
2009, WEDC, Loughborough University, UK in association with BORDA, Germany, ISBN 9781843801283, £49.75

In recent years there has been increased interest in both anaerobic wastewater treatment technologies and decentralized approaches to wastewater management. These topics are brought together in the concept of DEWATS (decentralized wastewater treatment systems), which has been developed and implemented by the German NGO Bremen Overseas Research and Development Association (BORDA). Based on its extensive experience over the past 30 years, BORDA has produced a comprehensive guide to DEWATS concepts and technologies, which is published by the Water, Engineering and Development Centre (WEDC) based at Loughborough University, UK.

The first three chapters of the book provide an introduction to DEWATS. Chapter 1 is described as an introduction but could be more accurately termed a

preface. Chapter 2 describes the situation worldwide, emphasizing the threat to water resources and suggesting the need for innovative sanitation approaches and technologies to deal with this threat. Chapter 3 introduces the concept of DEWATS and outlines the technologies that can be termed as DEWATS. Some examples of existing DEWATS initiatives from China, India and Indonesia are given.

Chapter 4 deals with strategic planning. It emphasizes that successful implementation of DEWATS approaches requires an appropriate legal framework and that there may be situations in which it makes sense to allow some relaxation of currently high standards. It also emphasizes the need to build awareness within civil society so that there is a commitment to enforcing laws and complying with standards. Later, the chapter discusses sanitation mapping techniques and describes ways in which mapping can be used to identify those areas of a city, particularly peri-urban areas, that might be suitable for a decentralized DEWATS approach. Chapter 5 identifies stakeholders in community-based sanitation programmes and describes how they can be involved in the process. Chapter 6 describes the stages in the implementation process, starting with prepar-

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© Practical Action Publishing, 2011, [www.practicalactionpublishing.org](http://www.practicalactionpublishing.org)  
doi: 10.3362/1756-3488.2011.009, ISSN: 0262-8104 (print) 1756-3488 (online)

ation and moving through planning and implementation to operation. The process described is similar to that described in other participatory planning texts and provides a reference tool, although experience suggests that it may be necessary to adapt and simplify it in some circumstances.

For many, the most interesting part of the book will be Chapters 7 to 10, which provide information on design principles and procedures for implementation of DEWATS technologies. These chapters assume that the reader is not familiar with the basics of wastewater treatment and therefore can easily be followed by non-professionals. The chapters are illustrated by diagrams, graphs, photographs and drawings, which are both clear and informative. The drawings in Chapter 9 provide almost enough information for readers to produce their own design details. Chapter 10 entitled, 'Designing DEWATS' consists mainly of a series of graphs and spreadsheets, which can be used to size the various components in a DEWATS treatment system. Unfortunately, the design equations that underlie the spreadsheet formulae are not given. It would be possible to work backwards to derive the design equations from the spreadsheet formulae but it would have been much better to have given the underlying equations.

Finally, Chapter 12 provides a useful summary of the problems that may be encountered with DEWATS systems. This is likely to be particularly useful to those who are charged with managing wastewater treatment systems. Problems and solutions are given in an easily readable tabular form.

Overall, there is a lot of good information contained in the book. It will be a useful addition to any library although individual buyers may be put off by the price – just under £50 plus postage in the UK – although slightly cheaper if ordered directly from BORDA in Germany.

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### **Wastewater Irrigation and Health: Assessing and Mitigating Risk in Low-income Countries**

Edited by Pay Drechsel,  
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and Akiça Bahri  
2009, Earthscan, 432 pages,  
paperback, ISBN  
9781844077960, £35, hardback,  
ISBN 9781844077953, £95  
<http://www.earthscan.co.uk/?tabid=92789>

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In a world where the costs of producing water for agriculture and drinking are inexorably rising, reuse of wastewater for irrigation is becoming increasingly important. Many countries are already dependent on both formal and informal reuse of wastewater for food production. Reuse makes economic sense, enhancing agricultural production, but can compromise the health of farm workers and consumers of food crops. Until recently, guidelines for reuse of wastewater sought to eliminate health risks by establishing uniform limits for various water quality parameters. These limits, while virtually eliminating health risks, proved costly and almost impossible for many countries to implement and took no account of the conditions under which wastewater was likely to be reused. In 2006 WHO published a new set of guidelines for wastewater reuse in agriculture which took a more pragmatic approach, seeking to minimize health risks in given situations. While the new guidelines have introduced welcome flexibility they too have proved difficult to implement, largely because the assessment and management of risks has proved much more challenging than the earlier use of absolute water quality limits.

In this context, the recent publication of 'Wastewater Irrigation and Health' is particularly welcome. Edited by an illustrious group of authors

from IWMI (International Water Management Institute), IDRC (International Development Research Centre) and the University of Arizona, this rich collection of essays provides a very useful introduction to the 2006 WHO guidelines. The book introduces the guidelines in simple terms and walks the reader through the concept of health risk mitigation. A second section gives a practical guide to the tools needed to assess health risks and measure potential benefits of wastewater reuse and introduces methods for assessing trade-offs between different potential wastewater management strategies. In the third section, a range of authors give their perspectives on the practical implications of the guidelines – introducing options for efficient natural wastewater treatment, on farm health-risk mitigation measures and the use of multiple barriers to interrupt disease transmission. The fourth section contains a useful discussion of policy and governance aspects of wastewater management and the final concluding section looks to the future, presenting a vision of better-informed policy and investment decision-making.

The text is richly illustrated with practical examples and suggestions for ways in which the 2006 guidelines can be harnessed to improve wastewater management. In one particularly useful chapter, the authors ably demonstrate the

use of quantifiable microbial risk assessment (a statistical method for assessing health risks), the quantification of the economic benefits of improved health and cost calculations to compare the cost-effectiveness of different options for wastewater management (changing on-farm practices and construction of new wastewater treatment capacity).

This book is likely to be of interest to decision-makers, consultants and researchers who are looking for practical tools to improve the selection of wastewater management strategies particularly in countries of the global South, and where water scarcity is critical. The lively and informative style makes it an accessible and easy read. At £35 for the paperback edition it is not so cheap – but few books are available at less than this and it is definitely a worthwhile investment.

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**Facilitating ‘Hands-on’  
Training Workshops for  
Community-Led Total  
Sanitation: A Trainers’  
Training Guide**

Kamal Kar  
2010, WSSCC publication

Community-led total sanitation (CLTS) has gained startling popularity around the world in enabling communities to analyse

and respond to their own needs for safe sanitation. With the alarming shortfall for achieving the sanitation target in the Millennium Development Goal (Goal 7, Target 10 – which is more likely to be attained by the 23rd century for sub-Saharan Africa), national governments, non-state actors and civil society can be glad to have in CLTS a powerful and timely approach to help accelerate access to safe sanitation without the need for significant expenditures.

Dr Kamal Kar, the pioneer and instigator of CLTS, is passionate to see CLTS taken to scale in a manner that is both sustainable and replicable. But it is clear that, over recent years, the approach has not always been used as intended. This has typically been as a result of facilitators inserting conventional education-style components into the process, which elongate or even stall the CLTS campaign, with consequent diminished quality of outcome (communities not attaining ‘open defecation-free’ status, or regressing to open defecation in time). CLTS thrives on self-analysis to enable social awakening and resulting collaborative action to take place. ‘Good facilitation is everything’ in CLTS, and so Dr Kar has produced this Trainers’ Training Guide to highlight good practice facilitation of this revolutionary approach.

The Guide is useful both for training CLTS facilitators (those who will bring the tool

directly to the community), and for training trainers of facilitators, although once defined, these distinctions aren't greatly elaborated. But whoever is to be trained, the Guide comes with a very strong health warning: neither this Guide, nor any other text on 'how to do' CLTS, should substitute for hands-on, actual community triggering. That is absolutely fundamental. There is NO 'Teach yourself CLTS...'

The Trainers' Training Guide sets out how to organize and conduct effective training, as well as how to follow-up a CLTS campaign. After providing a useful summary and description of the various tools that are commonly used in CLTS, the Guide describes the organization and implementation of a typical 5-day training event. The Guide ends with various appendices, giving more detail of training techniques, resources and very useful tips. In fact, characteristically it seems of Dr Kar's writings on CLTS, the Guide is almost an elaboration of invaluable, practical, tips. This makes the style easy to read, if not sometimes pragmatic (and easy to assimilate – the Guide is only 40 pages in length).

So, how does it sit with other texts on CLTS? For a description of CLTS, its aims, objectives, and its application through various styles and contexts, the Handbook on Community-

Led Total Sanitation released in 2008 is still a foundational. The Trainers' Training Guide complements the Handbook very well, with the focus on training and preparation to deliver a CLTS campaign. Robert Chamber's 'Going to Scale with Community-Led Total Sanitation', also provides a useful wider socio-political picture of the circumstances under which CLTS might do well.

What of any gaps or weak points in the Trainer's Guide? I see no particular weak points, but I haven't yet come across an overall programmatic planning aid for CLTS (training, implementation, through to follow up). To be in any way prescriptive about programme design would hamper the effectiveness of CLTS, and yet some sort of flow-diagram or network of key stages and criteria would be extremely helpful in planning out an organization's support programme. But for now, take the Handbook plus this Trainer's Guide as a very significant, practical resource pair to guide in facilitating quality CLTS campaigns.

Copies of the Trainers' Training Guide can be obtained free of charge from the Water Supply and Sanitation Collaborative Council (WSSCC) via [www.wsscc.org](http://www.wsscc.org).

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