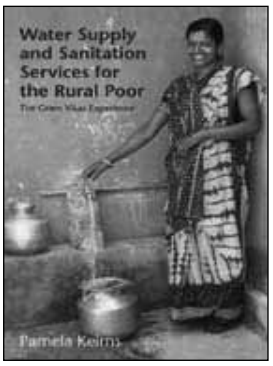
Reviews and resources



Water Supply and Sanitation Services for the Rural Poor: The Gram Vikas Experience
Pamela Keirns
2007, Practical Action Publishing, £15.95, 110 pages, ISBN: 978 1 85339 654 0

The NGO Gram Vikas (meaning Village Development) has worked with poor and marginalized communities in Orissa, south-east India, since 1979. This book provides a detailed account of the NGO's internationally acclaimed rural development programme, particularly the water supply and sanitation component.

The book is very well written and its origins in a masters degree project are reflected in its logical structure: an overview of water and sanitation issues in developing countries, the same for India, then an introduction to the NGO and its programme, focusing on the water and sanitation component. Its intended readership, however, is not very clear. Essentially it showcases the work of an NGO with a strong track record in rural development, and as such would be a good 'primer' for anyone beginning work in this area. It is perhaps less useful for those already familiar with the sector since many aspects of this NGO's approach are found in other rural development programmes in India and beyond. Similarly, the introductory chapters would primarily be useful to someone new to water and sanitation who needs a quick introduction to the key facts and challenges.

Perhaps the most striking feature of the Gram Vikas development package is its continuing emphasis on a high-cost, high-subsidy approach to sanitation. This is surprising at a time when many in the sector have rejected such models, considering them too hardware focused and impossible to scale up. Keirns acknowledges that Gram Vikas is sailing against the tide of sector opinion on this issue but presents the NGO's defence that poor people should not be palmed off with second-class services; if they are given 'quality' facilities, they will use and look after them. These arguments are touched on only lightly and it would have been interesting to explore the issue further, especially if there is evidence that Gram Vikas projects have made a substantial and lasting impact.

Generally, the book would have benefited from more consideration of the strategic role of NGOs such as Gram Vikas in the

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light of local developments in the water and sanitation sector. India is rare among less-developed countries in that the government is not only spending a lot of money on rural water and sanitation, but has proved willing to modify its national programmes (which include roles for NGOs) as evidence of more effective approaches comes to light. Performance of these programmes may be patchy, but they are very heavily funded, and adding value to the government's investments is arguably a national priority. How best NGOs can contribute to this effort is a question worth exploring.

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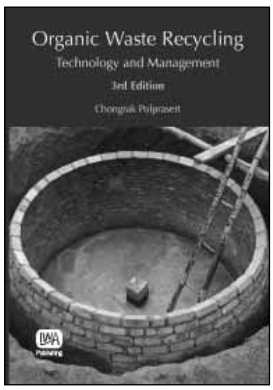

Organic waste recycling: Technology and management, 3rd edition
Chongrak Polprasert
2007, IWA Publishing, $118,
ISBN: 184339121X

Ecological sanitation is increasingly a topic of debate between sanitation sector specialists. But of course, recycling of organic wastes – both human and animal excreta as well as a wide range of other organic wastes in wastewaters, sludges and agro-industrial wastes – has been practised for centuries. These practices are widely advocated but need much wider application to support more sustainable livelihoods. This is especially important as the world's population is projected to increase by 50 per cent to an estimated 9 billion by 2050 and the amount of organic wastes generated by human, animal and agricultural activities will rise, causing increased pollution problems in the environment.

The book is a revised and updated edition of a publication previously published by John Wiley & Sons initially in 1989 and subsequently in 1996. The latest edition of the book contains up-to-date information on organic waste recycling technologies and more case studies of successful organic waste recycling programmes implemented in several countries. The structure of the book is essentially the same and there aren't any new chapters, but each chapter has been modified and updated and more examples and exercises are given in each chapter to help the reader understand the technical principles and their application. In addition to new sections on cleaner production, ethanol production and constructed wetlands, the final chapter on management of organic waste recycling programmes includes more information about planning, institutional development and regulatory standards.

This book focuses on technologies for recycling of organic wastes concentrating on processes, design details and operational requirements. It describes their potential application and

benefits and also covers aspects related to their limitations such as health implications. The first chapter provides an overview of waste problems and need for recycling, presenting some of the alternatives of integrated systems for organic waste recycling, which are illustrated with examples from around the world. Chapter 2 characterizes the organic wastes generated from human, animal and some agro-industrial activities and describes the diseases associated with human and animal wastes.

The bulk of the book focuses on the technologies themselves. In Chapter 3, the benefits, limitations and requirements of composting systems are presented, as well as their design criteria and public health implications. Alternative sources of energy such as biogas and ethanol produced, respectively, from the decomposition and fermentation of organic waste are discussed in Chapter 4. Chapters 5 and 6 describe, respectively, the production of algae and fish in ponds that utilize wastewater treated as culture medium. It would have been useful to provide more information about algal toxins since there is an increasing concern about toxins released by cyanobacteria species when their cells rupture or die.

The uses of aquatic weeds in waste recovery and recycling are presented in Chapter 7. Wastewater treatment combined with aquaculture systems can be used to produce animal feed and food for humans (notably fish) and also for the production of compost which can be used as a fertilizer. Chapter 8 and Chapter 9 present land treatment as an alternative for utilization of nutrients in the wastewater and sludge for crop production and for recharging underground aquifers with treated wastewater.

Finally, Chapter 10 discusses the management procedure for organic waste recycling programmes, describing planning, guidelines for technology selection, institutional arrangements, regulatory aspects, monitoring of facilities and case studies.

The fact that the book is in its third edition proves that the book is a useful text in the field of organic waste recycling technologies. The book is intended to be used as a text for students majoring in environmental sciences and engineering and for graduate students conducting research in the related fields. It is also highly recommended and is of interest and practical use for professionals as a reference source for planning, design and operation of organic waste recycling programmes. The examples related to design and the exercises offered in each chapter are particularly useful for lecturers and trainers.

One criticism relates to the fact that, although all major technologies are covered concisely yet comprehensively, operational aspects are not discussed in any detail. The section on management of an organic

waste recycling programme could be expanded considerably to describe in more detail the types of management arrangement that are required to get these technologies to function. In addition, a greater focus on the economics of waste management might help students to understand some of the economic pressures that are faced by those responsible for the design of waste management programmes caused by widespread availability of cheap inorganic fertilizers. The price of the book of US$88.50 for IWA members and US$118 for non-members may mean that it is not accessible to professionals working in developing countries. For those who have good access to the internet who want a closer inspection of the book before purchasing, it is available for viewing at http://books.google.com.

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Technical Handbooks for Rural Water Supply
Erik Nissen-Petersen et al.
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This excellent series of small, well-illustrated handbooks will be of great value to water technicians, engineers, planners and builders implementing a range of appropriate water supply options in rural Africa. The handbooks are aimed at providing guidance to those implementing a range of alternative water sources including small dams, dry river beds, and rainwater harvested from rock outcrops, roads and roofs. The series currently includes the following:

Water for Rural Communities
E. Nissen-Petersen, B. Madsen and M. Katui-Katua
2006, 52 pages

Water Supply by Rural Builders
E. Nissen-Petersen
2007, 60 pages

Water Surveys and Designs
E. Nissen-Petersen and C. Wanjihia
2006, 58 pages

Water from Rock Outcrops
E. Nissen-Petersen
2006, 55 pages

Water from Dry River Beds
E. Nissen-Petersen
2006, 60 pages

Water from Roads
E. Nissen-Petersen
2006, 57 pages

Water from Small Dams
E. Nissen-Petersen
2006, 58 pages

Water from Roofs
E. Nissen-Petersen
2007, 78 pages

The good news for those in Africa is that the handbooks are available free of charge for those based on the continent from

ASAL Consultants, thanks to support from the Danish Government (although a contribution towards the postage costs is required). Another way to access the eight handbooks is to visit the website www.waterforarid-land.com which was set up to support the series and from where they can be downloaded for free.

The first booklet in the series, *Water for Rural Communities*, covers some important basic principles for implementing rural water supplies including training, design, construction, operation and maintenance, record keeping and financial management. It also addresses a range of important related issues such as gender equality, HIV/AIDS and water as a catalyst for economic development. The second booklet on *Water Supply by Rural Builders* provides lots of useful, practical advice for rural builders on assisting communities such as drawing up agreements and contracts, marketing and general principles of good practice when operating as a contractor. The third booklet, on *Water Surveys and Designs* provides a detailed step –by-step guide on survey and design for a rising main pipeline and gravity distribution line and also examines economic viability and legal requirements. The fourth booklet, on small dams, addresses issues such as their technical and economic feasibility, and environmental and health impacts. It also highlights the importance of full community participation and ownership of the project and gives clear guidance on the construction of hillside, valley and charco (small earth) dams as well as their maintenance and repair. The fifth booklet covers the survey of dry river beds, design considerations and guidance for the construction of sub-surface dams, weirs and sand dams as well as details on the design and implementation of various river intakes.

The final three booklets provide detailed information on the survey, design, construction and maintenance of a range of rainwater harvesting systems. These include: 1) harvesting runoff from roads for storage in earth dams, dry-river beds, sub-surface tanks or to be used for micro-irrigation; 2) using rock outcrops with storage tanks, ponds or dams; and 3) collection and storage of roof runoff in various tanks ranging from small cement jars to large 46 m^3 ferrocement surface and 90 m^3 sub-surface ground tanks.

While most of the examples and case studies for this series are based on experiences from semi-arid Africa and specifically Kenya there is much that will be of interest and use to people working elsewhere on the continent and even beyond.

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