

# DATABASE OF BOOKS AND WRITE-UPS

on

## Hygiene & Sanitation



### GUIDE TO THE DEVELOPMENT OF ON-SITE SANITATION

R Franceys, J Pickford & R Reed  
ISBN 92 4 154443 0  
©WORLD HEALTH ORGANIZATION 1992

This book provides in-depth technical information about the design, construction, operation and maintenance of the major types of on-site sanitation facilities, from simple pit latrines to aqua privies and septic tanks, with numerous practical design examples. Recognizing that the introduction of on-site sanitation system involves more than the application of simple engineering techniques, the authors describe in detail the planning and development processes, and the financial and institutional factors that will need to be taken into account. Particular emphasis is given to the need to involve the community at all stages from planning to evaluation, to adapt projects and programmes to the local situation, and to provide continuing support to the community after the system is installed.

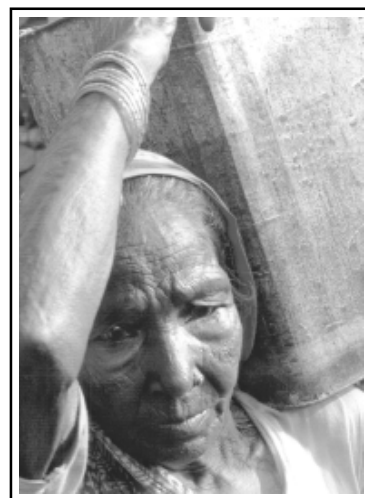
### A MANUAL ON HYGIENE PROMOTION

© 1999, United Nations Children's Fund  
A publication of UNICEF  
Programme Division  
Water, Environment and Sanitation  
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This manual on hygiene promotion is one of the Technical Guidelines Series prepared by the Water, Environment and Sanitation Section, Programme Division, UNICEF. It was developed in collaboration with the

London School of Hygiene and Tropical Medicine. This manual is part of a series that aims to help implement the WES (Water and Environmental Sanitation) strategies approved by the UNICEF Executive Board in 1995. These strategies emphasize a catalytic approach in WES programming, where UNICEF support serves to strengthen each country's learning, programming and policy development process rather than to simply provide direct services. This 'catalytic' role, it is hoped, will help produce greater benefits on a more sustainable basis.

This manual was produced for UNICEF by the London School of Hygiene & Tropical Medicine in co-operation with the Government of Burkina Faso and is based on the experiences of the UNICEF-supported Saniya Project (a public health communication project) in a West African town. The manual presents methodologies to assist development workers in the promotion of behavioural change for safer hygiene practices, and to help make hygiene promotion programmes more effective. The objective of the manual is to provide a tool that will contribute towards a reduction in diarrhoeal diseases and thus a reduction in child mortality. The manual describes a methodology for bottom-up programming for hygiene promotion: first finding out what people know about hygiene through formative research in people's knowledge and practices, and then combining this with state-of-the-art expert knowledge and appropriate communication strategies to develop effective and sustainable programming models.



### A SANITATION HANDBOOK

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A publication of UNICEF/Programme  
Division  
Water, Environment and Sanitation  
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This Sanitation Handbook is the third of the Technical Guidelines Series prepared by the Water, Environment and Sanitation Section, Programme Division, UNICEF, in collaboration with USAID's Environmental Health Project (EHP Applied Study No. 5). This handbook has been prepared to help working groups of professionals responsible for sanitation programming - develop and enact realistic and better sanitation programmes. This handbook is a guide and reference on major topics of sanitation programming. Assessment, Analysis, and Action—the "Triple A" methodology - are incorporated into this systematic planning approach. The handbook helps to explore the major questions, considerations, and options for each of a series of major topical aspects of sanitation programming.

## SANITATION IS A BUSINESS APPROACHES FOR DEMAND- ORIENTED POLICIES

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This book attempts to identify and describe the economic angle associated with sanitation hence the title – 'Sanitation is a Business'. It explores the demand and markets for sanitation and the need to create markets for the poor; development of supply chains for sustainable sanitation. There is also a chapter looking back 2000 years into history - even then sanitation was a business. A few successful case studies have been discussed like the Sulabh Sanitation Movement: 12 million users daily (India) and McClean®: business at railway stations (Europe). Details of making money from pit emptying and faecal sludge (West Africa) make for interesting reading. It concludes on a positive note - New Strategies for Sanitation – It Can Be Done and spelling out Conclusions for Action as well as Fresh Partnerships for Sanitation.

### SANITATION AND THE POOR

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WELL, Resource Centre Network for Water,  
Sanitation and Environmental Health.  
Water, Engineering and Development Centre,  
Loughborough University  
London School of Hygiene and Tropical  
Medicine  
IRC, International Water and Sanitation  
Centre

This handbook discusses the issue of sanitation, why sanitation matters, reasons for lack of sanitation and the behaviour change required to make sanitation programmes a success. The book also focuses on the local experiences ranging from perceived true cost of sanitation to subsidies and resource allocation and the vision and policy required to increase the demand for sanitation as also the necessary strategies and implementation plan for programmes. In the end monitoring and evaluation of impacts is also discussed along with key issues for further work in relation to policy, strategic planning, programme development, implementation and monitoring.

## TOWARDS BETTER PROGRAMMING A MANUAL ON SCHOOL SANITATION AND HYGIENE

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Fund  
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Division  
Water, Environment and Sanitation  
ID No. UNICEF/PD/WES/98-5

This School Sanitation and Hygiene Manual is one of the Technical Guidelines Series prepared by the Water, Environment and Sanitation Section, Programme Division, UNICEF, in collaboration with the IRC International Water and Sanitation Centre, The Netherlands. Building on experience from a number of country programmes, the book advocates for integrated approaches towards a safe school environment for all children with linkages to community actions and relevant education for a healthy and sustainable development. Children are agents of change. By focusing on school aged children, giving them tools and knowledge to change behaviours today, future generations will be better prepared to care for their families and communities' own health and clean environment - this is the central theme of the book.

Importance of school sanitation and hygiene and the strategies for creating an environment conducive for School Sanitation and Hygiene (SSH) at the local and national levels are discussed. The book also deals with how to assess the current conditions in SSH at country level and how to plan for improvements along with financing, requisite curriculum change and development of teaching aids, teacher training and support etc.

### SANITATION PROGRAMMES REVISITED

Darren Saywell and Caroline Hunt, June  
1999  
London School of Hygiene & Tropical  
Medicine, UK, WEDC, Loughborough  
University, UK - Task No: 161  
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This document reports findings from WELL

(Water and Environment in London and Loughborough) Task 161 'Sanitation Programmes Revisited', which involved the study of two notable sanitation programmes (the Strategic Sanitation Plan, Kumasi, Ghana and the National Low Cost Sanitation Programme, Mozambique) with a view to identifying where and why they have failed or succeeded some years after implementation. The report aims to provide:

1. A historical analysis of each programme (investigating how, when and why the programmes developed in the way they did);
2. An understanding of critical issues common to each programme, including demand assessment, sanitation promotion, community participation, responsibility for service provision, finance and cost recovery and the health aspects of promotion;
3. A comparative analysis of the two programmes with a view to drawing out common and contrasting approaches and lessons learnt.

### THE SANITATION CHALLENGE: TURNING COMMITMENT INTO REALITY

ISBN 92 4 159162 5 (NLM classification: WA  
670)

© World Health Organization 2004

This document summarises the key thinking about how the water and sanitation targets (Target 10, Millennium Development Goal No. 7 – Ensure Environmental Sustainability) can be met. It suggests actions that can be taken at different levels and by different actors to change the pace of sanitation improvement. Achieving the internationally agreed targets for sanitation and hygiene poses a significant challenge to the global community and can only be accomplished if action is taken now. The document suggests that low-cost, appropriate technologies are available and effective programme management approaches have also been developed; now what is required is political will to successfully implement the same.

This document describes the following key areas where action can be taken today to translate global commitments on sanitation and hygiene into reality:

- ◆ Making political commitments

- ◆ Legislation and regulations
- ◆ Building capacity to make a difference
- ◆ Getting sanitation and hygiene right
- ◆ Mobilising financial resources
- ◆ Paying attention to gender and equity
- ◆ Supporting small-scale entrepreneurs
- ◆ Focusing on youth and using education
- ◆ Taking responsibility for the environment
- ◆ Monitoring progress
- ◆ Making information flow and strengthening partnerships

## A MANUAL ON COMMUNICATION FOR WATER SUPPLY AND ENVIRONMENTAL SANITATION PROGRAMMES

Water, Environment and Sanitation Technical Guidelines Series - No. 7

© 1999, United Nations Children's Fund (UNICEF)

3 United Nations Plaza, TA-26A  
New York, N.Y. 10017

A publication of UNICEF/Programme Division,

Water, Environment and Sanitation Section  
(ID No. PD/WES/99/2)

The Manual on communication for Water Supply, Environment and Sanitation programmes is a publication of the UNICEF Programme Division - part of the guidelines series on water, environment and sanitation. The Manual is the result of wide collaboration within UNICEF and with outside professionals in the communication and WES sectors. It provides a broad overview of state-of-the-art programming for behaviour development communication. The original programme guidelines for WES produced ten years earlier stressed what was at that time UNICEF's principal activity in the sector: drilling and hand-pump technologies. These programming areas remain important and thus continue to be covered in the Guidelines Series. However, experience from the WES and other sectors such as the health and education sectors, and lessons learned, have led to programming changes in the sector with a paradigm shift towards sanitation and hygiene education for behaviour change as well as community management of the water environment. This

Manual, with a focus on sound principles in programme communication, provides guidance on how to incorporate adequate communication and behaviour change approaches in water and environmental sanitation programmes. It is a practical guide for implementing the operational strategies outlined in the Board-approved WES Strategy Paper (UNICEF Strategies in Water and Environmental Sanitation – E/ICEF/95/17). As such, it is an important tool for field professionals in the implementation of UNICEF Programme Priorities, and the acceleration of progress towards the goals established at the World Summit for Children.

## OPTIMISING THE SELECTION OF DEMAND ASSESSMENT TECHNIQUES FOR WATER SUPPLY AND SANITATION PROJECTS

Project/Task No: 207

Sarah Parry-Jones

Final Report: October 1999

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Water and sanitation projects and programmes will fail to be sustainable if they are not planned and designed to meet the needs of the end user. There is plenty of documented evidence of past projects which have failed because they did not take into account the expressed needs and demands of the target population. The recognition of this weakness prompted the World Bank and other donors to move towards a demand-responsive approach (DRA) to provision of services in recent years. The need to assess demand is central to this approach and there are a number of different tools and techniques which practitioners can use to assess demand. The aim of this study is to explore the issues and challenges surrounding the practice of demand assessment for water and sanitation services. The work has been based on an extensive review of literature and case studies and a one day workshop which was organised to draw together attitudes and knowledge from a small group of

experienced economists, engineers and social scientists working in the sector.

The "demand" for water and sanitation services is relatively complex and it has a different meaning to economists, engineers and social scientists because they are all concerned with different aspects of planning and designing a project. However, all professionals in the sector are ultimately working towards the same goal: development of sustainable services. Demand assessment is an important tool which can help to guide decisions which should lead to sustainable solutions. It is particularly important at the planning stage when there is a need to establish the users' preferences and willingness to pay for improved services. The three main tools which are currently available to assess demand are: household and revealed preference surveys, contingent valuation methodology (CVM) and participatory approaches (e.g. PRA). Each technique has proponents and opponents and has strengths and weaknesses in different contexts. Much of the expertise and experience of applying CVM comes from the World Bank which has conducted a global study into its use; in contrast, participatory tools are normally the domain of the social scientist or the NGO. These existing tools are relatively well-developed and each has its role to play in certain situations and at different stages of the project cycle. The use of these tools in parallel can provide complementary information to a multi-disciplinary team. The assessment of demand for sanitation is still poorly understood and there is little literature on successful approaches. Similarly there is a lack of documented experience on using participatory approaches to assess demand for urban water and sanitation programmes. The aim of this study is to further explore the approaches which are currently being used by professionals in the water and sanitation sector to assess demand for services and to provide a more detailed insight into the issues surrounding demand assessment. This work has been largely based on a detailed review of current literature and case studies but has also benefited from the concurrent electronic conference on demand-responsive approaches (DRA).

## WHO/UNICEF JOINT MONITORING PROGRAMME FOR WATER SUPPLY AND

### SANITATION; MEETING THE MDG DRINKING WATER AND SANITATION TARGET:

#### A MID-TERM ASSESSMENT OF PROGRESS, 2004

© World Health Organization and United Nations Children's Fund, 2004  
(ISBN 92 4 156278 1)  
(NLM classification: WA 675)

This report, produced by the WHO/UNICEF Joint Monitoring Programme on Water Supply and Sanitation (JMP), provides the latest estimates and trends on where we stand today vis-à-vis water supply and sanitation provision. The JMP's estimates are critical for calculating rates of progress towards national goals and for highlighting priorities, especially those that target the underserved. This report, prepared by the WHO/UNICEF Joint Monitoring Programme, provides coverage data for 1990 and 2002 at national, regional and global levels and an analysis of trends towards 2015. It also marks a new cycle of more frequent reporting, which can be effectively used for sector capacity-building efforts at the national and sub-national levels. The report is intended as a 'reality check' for individual countries and the international community on how far we have come, and where we need to focus next, in order to fulfil our commitment.

#### ASSESSING THE ENVIRONMENTAL BURDEN OF DISEASE AT NATIONAL AND LOCAL LEVELS

Annette Prüss-Ustün, Colin Mathers, Carlos Corvalán, Alistair Woodward  
(Environmental burden of disease series ; no.1)  
Protection of the Human Environment  
World Health Organization, Geneva 2003  
ISBN 92 4 154620 4 (NLM Classification: WA 30)  
ISSN 1728-1652

To prevent disease and injury it is essential that their underlying causes (health risks) are quantitatively attributed. Together with information on the costs of interventions, their effectiveness and the socioeconomic context, such knowledge provides a rational basis for policy-setting. While quantitative studies have been performed for some health risks, few have assessed the disease burden from environmental risk factors and,

traditionally, the studies have focused on a single risk factor. The Environmental Burden of Disease (EBD) series of guides is based on the same methodological framework as used in the World Health Report 2002 (WHO, 2002), and provides practical guidance on assessing the health impacts of environmental risk factors. The guides, together with accompanying material, such as the spreadsheets, provide sufficient methodological information to perform the EBD assessments. The EBD series of guides is composed of an introductory volume, and volumes that provide detailed guidance for assessing the health burden of specific environmental risk factors. Most of the guides focus on assessments of national and local populations, which are most relevant for policy-making. In some volumes, however, the global disease burden is assessed for certain health risks. All the guides take a practical, step-by-step approach and use numerical examples. The methods described in the guides can be adapted both to local and national levels, and can be tailored to suit data availability. In this introductory volume, the methodological framework for quantitatively assessing health impacts at population level is described. It is recommended that the framework be adopted by other EBD studies, to ensure that estimates are both reliable and comparable.

#### HOW SAFE IS SAFE? A CONCISE REVIEW OF THE HEALTH IMPACTS OF WATER SUPPLY, SANITATION AND HYGIENE

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©LSHTM/WEDC, 2001  
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The United Nations Millennium Summit adopted a target to halve the proportion of people who are unable to reach, or to afford, safe drinking water by the year 2015. Activities are planned to enable monitoring towards these and other goals. The degree to which existing monitoring is able to report upon safety of services is unclear. This review produced by WELL, seeks to inform monitoring in the sector by providing a review of the evidence of the health risks associated with water supply and sanitation

services. As such, this document aims to inform policy makers, donor support agencies, government bodies and NGOs. Models of understanding of the health impact of water supply, sanitation and hygiene practices are presented. The first model, classifications of water-related and excreta-related infections show how quantity of water for hygiene, quality of water and access to, and hygienic use of sanitation are vital to help reduce the enormous, avoidable health burden from faecal-oral disease transmission. The second model, the F-diagram graphically presents the many routes of faecal-oral disease transmission. It illustrates the importance of sanitation and hygienic practices as the primary barriers to diarrhoeal disease. The model also highlights the need for integrated solutions to address multiple transmission routes. The third model, that of public and private domains caters to the need to better understand the mechanisms of disease transmission in different settings and to tailor interventions accordingly. The private (household) and the public domains are characterised by different levels of immunity and differing practices and responsibilities.

The main science behind the understanding of these health impacts, epidemiology, suffers from a number of methodological difficulties in this context. When combined with the extreme complexity of diarrhoeal disease aetiology, understanding health risks can be difficult. The epidemiological studies reviewed in this report were designed, in many instances, to look at health impact of existing services by comparing served to unserved populations.

#### GROUNDWATER, LATRINES AND HEALTH

Ben Cave and Pete Kolsky, July 1999  
WELL (Water & Environmental Health at London and Loughborough), Task No: 163  
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On-site sanitation systems dispose of human excreta, with or without treatment, on the residents' housing plot. Examples include pit latrines and septic tanks with drainage fields. This study reviews the risks to health posed by groundwater contamination from on-site sanitation (latrines). Detailed understanding of groundwater contamination is complicated by a host of factors, broadly grouped into substantial and often unknown variations in subsurface conditions, contaminants, and the mechanisms of their movement. The

problem is further complicated by the multiplicity of other pathways by which contaminants may be ingested, the variation in human response to a given dose, and the variety of approaches that may be taken to reduce such risks. Data from urban settlements in India are presented which support the hypothesis that it may be cheaper to combine on-site sanitation with public water supplies drawn from outside the contamination zone, than to combine on-site wells with off-site sanitation (i.e. sewerage). It is argued that in the final analysis, planners should understand that any decision to ban on-site sanitation that leads, as a practical consequence, to a reduction in sanitation coverage and use is, in fact, a step backwards for public health.

## HEALTH ASPECTS OF DRY SANITATION WITH WASTE REUSE

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 ©LSHTM/WEDC  
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Dry sanitation is defined in this report as the on-site disposal of human urine and faeces without the use of water as a carrier. This definition includes many of the most popular options for low-cost sanitation including pit latrines, Ventilated Improved Pits, SanPlats, etc. There has always been an interest in the reuse of human waste as a fertiliser, and there has been much work on the development of composting and other processes to permit human waste reuse. This report examines the practice of dry sanitation with reuse in Mexico, with a particular focus on health issues and the lessons to be learned from case studies and experience. There are two distinct technical approaches to dry sanitation with reuse;

- ◆ **Dehydration** - urine and faeces are managed separately. The deposited faecal matter may be dried by the addition of lime, ash, or earth, and the contents are simply isolated from human contact for a specified period of time to reduce the presence of pathogens.
- ◆ **Decomposition (composting)** - bacteria, worms, or other organisms are used to break down organic matter to produce compost. The temperature and airflow are carefully controlled to optimise conditions for composting.

Toilets working on the dehydration principle, such as the Vietnamese double bin toilet, the Mexican Dry Ecological Toilet, the Guatemalan DAFF, the South African urine diversion dry toilet, the Ethiopian ECOSAN toilet, and other models from Yemen, El Salvador, Ecuador and Mexico are described as also Toilets working on the composting principle, the Mexican SIRDO, the Pacific Island Carousel toilet, and the Clivus Multrum. Dry sanitation systems designed for excreta reuse were visited in Ixtlico el Chico (Morelos State) and San Juan Amecac (Puebla State) and some case studies have also been presented. The report concludes that

- ◆ Reuse of the contents of dry sanitation systems offers both advantages and risks.
- ◆ Safe adoption of dry sanitation with reuse is a slow process.
- ◆ The risk to health from a given sanitation facility depends not only upon its technology, but also upon the health status of the family using the toilet.

## HEALTHCARE OR HEALTH RISKS? RISKS FROM HEALTHCARE WASTE TO THE POOR

Jenny Appleton and Mansoor Ali  
 ©LSHTM/WEDC, 2000  
 WELL (Water & Environmental Health at London and Loughborough): Task No. 326  
 Water Engineering and Development Centre, UK

The purpose of this WELL study is to review and document key issues in the management and disposal of healthcare wastes in relation to the urban poor. This is done firstly through a review of the current literature and secondly by undertaking two short field studies in Pakistan and Bangladesh to identify good practices. A select bibliography, which includes contact details, is provided. The following issues are addressed:

- ◆ Why healthcare waste is hazardous and what we know about the risks it poses;
- ◆ Why the urban poor are considered to be most at risk from healthcare waste;
- ◆ Ways in which these risks can be reduced; and,
- ◆ What can be learnt from examples of good practice in South Asia.

The review of literature does not provide any significant guidance about the actual risks associated with poor management of these wastes. Past research has focused on the specification of best practice rather than objective assessments of the actual impacts of poor practices. This leaves two key points unanswered:

- ◆ Does responding to theoretical perceived risks, which may differ widely from the actual risks in many circumstances, result in the adoption of very high standards, using expensive and inappropriate technology that is unsustainable?
- ◆ Has best practice based on these premises focused on technological or end solutions, with a resulting lack of guidance on the small intermediary steps which can be carried out at low cost.

Two field studies from Karachi, Pakistan and Savar, Bangladesh where healthcare establishments have attempted to improve the way that they deal with their waste and the lessons learnt are reported, which can help improve healthcare waste management in other places.

## HEALTH, ENVIRONMENT AND THE BURDEN OF DISEASE: A GUIDANCE NOTE

Sandy Cairncross, Dominic O'Neill, Anne McCoy, Dinesh Sethi  
 DFID (Department for International Development)

Good health is both an end and a means of sustainable livelihood. For poor households, health is an essential asset in the pursuit of their livelihood, but their home and work environment often threatens their health. Improving environmental conditions which affect health is therefore basic to the creation of sustainable livelihoods and the elimination of poverty. Progress towards the key Millennium Development Goals (MDGs) will be accelerated through improved environmental health conditions, in particular the MDGs for child health, access to water and sanitation and environmental sustainability. While many other interventions may also accelerate progress, the multi-sectoral approach to environmental health offers cost effective and sustainable improvements. Environmental risk factors account for 21% of the overall burden of

disease worldwide, and more in developing countries. Environmental improvements are often more cost-effective as health measures than curative health services. After all, prevention is better than cure. This Guidance Note examines the conditions which determine whether an environmental hazard is responsible for a substantial amount of disease, and whether feasible measures are available to prevent it. It considers three problems which account for nearly three quarters of the environmental burden of disease:

- ◆ Water, sanitation and hygiene
- ◆ Indoor air pollution, and
- ◆ Injuries.

## EFFECTIVENESS OF PROMOTIONAL TECHNIQUES IN ENVIRONMENTAL HEALTH

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Behaviour change is a key component in environmental health programmes. However behaviour change is difficult and little evidence is available as to how much behaviour change can be expected from health education and promotion and how much is sustained over time.

- ◆ In 1987 Loevinsohn found only three methodologically sound studies with evidence of health impact. One of these showed evidence of behaviour change (increase in contraceptive use).
- ◆ Five further studies published since then which had sufficient rigour to evaluate impact. Four demonstrated health impact. In only two was there clear direct evidence of behaviour change (purchase of water filters).
- ◆ Of eleven other studies with sufficient rigour to contribute lessons, only three showed useful evidence of any behaviour change. One was an intensive hand-washing and soap distribution programme in one village, another was a village which decided to give up smoking. The national diarrhoea control programme in Mexico increased sales of ORS 10 fold in 11 years.

- ◆ In all other studies behaviour change was not reported, not found or very small.

This study points out that poor results stem either from a failure in conception, in execution, or in measurement. Only when better-designed interventions and evaluations take place can we determine why so many efforts appear to fail.

- ◆ Better intervention design involves explicitly researching how to change specific behaviour from the outset and using messages about a few behaviours which are simple and cheap to put into practice. Political, social and economic barriers to behaviour change must be assessed and may need to be addressed before the intervention begins.
- ◆ Behaviour change can be slow and require intensive or prolonged intervention that may not be replicable or sustainable outside of the context of a research study. Slow, steady long-term progress may be a more appropriate outcome expectation than immediate major impact.
- ◆ Better evaluation design requires better process monitoring and evaluation, better measures of behaviour, and more rigour and scepticism. Cost-effectiveness evaluations of successful programmes are urgently needed.

## ENVIRONMENTAL HEALTH PROMOTION CAPACITY BUILDING:

### A TRAINING GUIDE BASED ON CARE'S HYGIENE PROMOTION MANUAL

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The Hygiene Promotion Manual is a practical manual on hygiene promotion for relief and development workers. It is especially useful for fieldworkers on projects or programmes that aim to reduce the incidence of water-and-sanitation related diseases. The manual is also useful for other relief and development workers, particularly those working in the fields of community development, health and engineering. The authors (Suzanne Ferron,

Joy Morgan and Marion O'Reilly) describe a wide range of approaches to hygiene promotion that can be used in different settings, so wide that the term 'hygiene promotion' could almost encompass environmental health promotion as a whole. Central to the approach taken to promotion is a commitment to working in collaboration with people and encouraging them to take more control over the factors that influence their lives. The Hygiene Promotion Manual was developed with the support of CARE International after requests from their field staff for guidance on how to do hygiene promotion in emergencies. During the review process, other professionals suggested that the manual would also be useful for people working in development contexts. The manual was written and published in April 2000.

### EVALUATION OF THE COSTS AND BENEFITS OF WATER AND SANITATION IMPROVEMENTS AT THE GLOBAL LEVEL.

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World Health Organization, Geneva, Switzerland. 2004.  
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The aim of this study was to estimate the economic costs and benefits of a range of selected interventions to improve water and sanitation services, with results presented for 17 WHO sub-regions and at the global level. Interventions evaluated include

- (1) Improvements required to meet the millennium development goals (MDG) for water supply (by halving by 2015 the proportion of those without access to safe drinking water),
- (2) Meet the water MDG plus halving by 2015 the proportion of those without access to adequate sanitation,
- (3) Increasing access to improved water and sanitation for everyone,
- (4) Providing disinfection at point-of-use over and above increasing access to improved water supply and sanitation
- (5) Providing regulated piped water supply in house and sewage connection with partial sewerage for everyone.

Predicted reductions in the incidence of diarrhoeal disease have been calculated for each intervention based on the expected

population receiving these interventions. The costs of the interventions include the full investment and annual running costs. The benefits of the interventions include time savings associated with better access to water and sanitation facilities, the gain in productive time due to less time spent ill, health sector and patients costs saved due to less treatment of diarrhoeal diseases, and the value of prevented deaths. The results show that all water and sanitation improvements were found to be cost-beneficial, and this applied to all world regions. In developing regions, the return on a US\$1 investment was in the range US\$5 to US\$28 for intervention 1, remaining at similar levels for interventions 2, 3 and 4. The main contributor to benefits was the saving of time associated with better access to water supply and sanitation services. When different cost and benefit assumptions were used, the cost-benefit ratios changed considerably, but even under pessimistic scenarios the potential economic benefits generally outweighed the costs.

### **WATER SUPPLY, SANITATION, HYGIENE AND HIV/AIDS – THE UNRECOGNIZED LINKS.**

Wegelin-Schuringa M.; Kamminga E.  
Waterlines: April 2004; 22(4): 10-12.

People with HIV/AIDS need better access to clean water and sanitation so that they can fight infection better. But the prevalence of the illness in many parts of the world means that individual/ community-based water supply and sanitation systems are less well managed, and there is greater risk from HIV/AIDS. This document explores these imperceptible risks.

### **PERSPECTIVE: POSITIVE EXPERIENCES FROM AFRICA IN WATER, SANITATION AND HYGIENE**

Jon Lane  
Water Policy: May 2004; 6(2): 153-158.

Nowhere in the world is poverty more visible, more destructive and more pervasive than in Africa. Too often, Africa is associated with stories of failure and pessimism, of wars and famines, floods and unrest. Africa appears to be slipping back on many development indicators, even as other parts of the world move ahead. In 2003, however, there were prospects of achieving progress in water,

sanitation and hygiene in Africa. Across the continent, a strong sense of the need for peace, democracy and cooperation was observed. In the water sector, the African Ministerial Conference on Water (AMCOW) had been formed to share ideas and lessons and to provide mutual support and active direction. This paper suggests five priorities for achieving the water and sanitation Millennium Development Goals in Africa. It relates them to practical examples of inspiring and positive initiatives in water and sanitation from across the continent. These examples have worked, or have the potential to work, at a large scale, are demonstrably sustainable, and do not benefit from too many unique local conditions. These characteristics enable the lessons from these examples to be useful for other people in, and indeed outside, Africa.

### **WATER RESOURCES MANAGEMENT AND ACCESS TO SAFE WATER AND BASIC SANITATION**

John Hodges, Ian Curtis  
ID21 RESEARCH HIGHLIGHT: November 14, 2003.  
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This report tries to explore the links between water resources management and economic development and security, and between water and sanitation services and health and livelihoods outcomes? It reminds us that water contributes to economic development through its use in agriculture, industry and transport; to human development through improved health arising from the provision of safe water supplies, appropriate sanitation and improved hygiene practice; and to environmental sustainability through fresh water provision for ecosystems and reduced levels of pollution. Sketching the role played by bilateral and multilateral support agencies and national governments, it calls for the greater co-ordination and involvement of people, communities and the private sector. Human consumption of freshwater threatens to push to the limit the capacity of nature to supply its benefits to mankind. The extreme levels of abstraction of groundwater in India means that in the future, in many situations water may not be available for irrigation purposes. Water, rather than land availability, is set to become the major constraint on agricultural production. The report warns that:

Global freshwater consumption rose six-fold in the twentieth century – more than twice the rate of population growth and this may be the greatest impediment to sustainable development.

### **ACCESS FOR ALL: THE DELIVERY OF WATER AND SANITATION IN URBAN BANGLADESH**

Suzanne Hanchett, Mohidul Hoque Khan, Shireen Akhter  
ID21 RESEARCH HIGHLIGHT: February 5, 2003.  
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A study by Planning Alternatives for Change and Pathway, Ltd. assesses whether WATERAID Bangladesh's Urban Programme benefits the urban poor of slums in Dhaka and Chittagong. The programme began in 1996 with WATERAID funding and with one partner non-governmental organisation (NGO). Since 1998 seven partner NGOs have run the programme in over 160 slums. It is estimated that 27 per cent of approximately 92000 slum households have used at least one of the services including water points to access safe water, community latrines and hygiene education. Findings include:

- ◆ Water sources provided by the project have helped 98 per cent of households.
- ◆ The construction of water and sanitation facilities and the opportunity to pay for their water supply gives slum dwellers a sense of 'citizenship'.
- ◆ The poorest of the slum dwellers still cannot gain access to programme facilities because they are unable to pay. They continue to lack status and influence.

The study highlights the need for more opportunities for the poorest people to be involved in programme planning and management. It points to further steps that could enhance programme delivery and outcomes.

### **CAN SOCIAL MARKETING INCREASE DEMAND AND UPTAKE OF SANITATION?**

Amaka Obika, Marion Jenkins, Guy Howard, Valerie Curtis

ID21 RESEARCH HIGHLIGHT: MARCH 10, 2003.

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Despite the gains made in increasing sanitation coverage during the United Nations water and sanitation decade of 1981-1990, over 2.4 billion people still lacked access to improved sanitation in 2000. Why is the uptake of sanitation low? Is a new approach to promoting sanitation needed? Research from WEDC, UK, in conjunction with the London School of Hygiene and Tropical Medicine, TREND Group, Kumasi and WaterAid Tanzania, considers the use of social marketing to increase demand and uptake of improved sanitation. The research in Nkawie, a small town in the Kumasi Metropolis, Ghana and in Dar es Salaam, Tanzania done through in-depth interviews used to understand the factors that motivate or constrain households from installing household latrines and the attributes that people desire in latrines. The private sector, in the form of local informal latrine providers including diggers, masons and carpenters, was also interviewed to investigate its role in latrine provision and its perspective on the demand and uptake of latrines. The findings suggest that the reason for the low uptake of household sanitation facilities is that sanitation programmes do not sufficiently understand users and what they want before starting projects. It is time for latrine programmes to treat users as consumers who have a say in what products they buy to meet their needs rather than as beneficiaries who receive gifts.

### **THE HUMAN WASTE: A CALL FOR URGENT ACTION TO COMBAT THE MILLIONS OF DEATHS CAUSED BY POOR SANITATION**

TEARFUND and WATERAID

Email: [www.wateraid.org.uk](http://www.wateraid.org.uk),  
[www.tearfund.org](http://www.tearfund.org)

This report is part of Water Matters, a campaign to ensure that everyone has access to safe water and adequate sanitation. Diarrhoea claims the lives of nearly 6000 children a day – that is over two million deaths a year. These children are dying because they do not have access to adequate sanitation. Their deaths, from common diseases, are preventable. This

human waste is a silent tragedy made worse by a scandalous lack of political will among governments to tackle the issue of poor sanitation. This failure to act means sanitation is now one of the world's most urgent health crises. The report emphatically states that - We must act now to provide sanitation coverage to all and thereby reduce the mortality and morbidity caused by preventable diseases.

### **ON-SITE SANITATION: BUILDING ON LOCAL PRACTICE**

Madeleen Wegelin-Schuringa (1991)  
- Series: Occasional Paper no. 16. iv, 74 pages. 64 references. Illustrated.  
- Price: • 9.00  
- Order code: OP 16-E

Provides an insight into the cultural and social aspects which influence sanitation developments and an overview of technical options available for on-site sanitation in rural and peri-urban areas. Emphasizes the technical details which can be used in upgrading and provides technical aspects of the design of latrines as a guide for carrying out improvements.

Target audience: sanitary engineers, social scientists, economists, planners and hygiene educators involved in sanitation programmes for low-income communities in developing countries

### **ACTIONS SPEAK: THE STUDY OF HYGIENE BEHAVIOUR IN WATER AND SANITATION PROJECTS**

Edited by Marieke T. Boot and Sandy Cairncross (1993)  
- Series: ix, 139 pages. 118 references, list of 38 workshop papers and 41 items for further reading. Illustrated. ISBN 90-6687-023-0.  
- ISBN: ISBN 90-6687-023-0  
- Price: • 26.00  
- Order code: AS-E

Another outcome of the 1991 Oxford Workshop on the Measurement of Hygiene Behaviour. Provides a comprehensive analysis of ways of studying hygiene behaviour to obtain the information needed to ensure successful water supply and sanitation and hygiene education projects. Ways of overcoming difficulties in gathering and analyzing data on sensitive and personal topics are illustrated with practical examples

drawn from papers submitted to the Workshop by more than 40 specialists. Covers the planning and pretesting of hygiene behaviour studies, including involving community members in study design and information gathering; the pros and cons of different interview and observation methods; and the types of behaviours most relevant to achieving health improvements.

Target audience: those engaged in water, sanitation and hygiene education programmes in the field.

### **INFORMATION MANAGEMENT IN THE WATER AND SANITATION SECTOR: LESSONS LEARNED FROM FIELD ASSIGNMENTS IN AFRICA AND ASIA**

Stephen Parker (1993)  
- Series: Occasional Paper no. 19. viii, 83 pages. 4 references. Illustrated.  
- Price: • 9.00  
- Order code: OP 19-E

Brings together lessons learned from IRC assignments on the information and documentation systems and networks in China, Ethiopia, Indonesia, Nepal, Pakistan, the Philippines, Tanzania, Thailand, Uganda and Vietnam, carried out in 1990 and 1991. Attempts to help managers in sector institutions in other countries to identify and solve common information management problems.

Target audience: managers in water and sanitation institutions; information specialists

### **COMMUNICATION CASE STUDIES FOR THE WATER SUPPLY AND SANITATION SECTOR**

Peter McIntyre (1993)  
- Order code: 00C

Advocacy document with 2 page journalistic write ups of 8 case studies to stress the importance of investing in improved communication for WSS, analyzing the approaches and achievements of the programmes.

Target audience: Politicians, media, sector professionals (all levels)

## COMMUNICATION CASE STUDIES FOR THE WATER SUPPLY AND SANITATION SECTOR

Text of revised version, 1993

These case studies in the water supply and sanitation and related fields had been written at the request of the Core Group on IEC (Information, Education, Communication). This group, working with a mandate from the Water Supply and Sanitation Collaborative Council, a global forum composed of sector professionals for developing countries, external support agencies and others instigating action in the water supply and sanitation sector. The material forms part of the effort which aims to accelerate water supply and sanitation provision, building on the changing sector approaches which came out of the 1980s. Intensified communication and promotion in and beyond the sector is a key component in this changing process at a local, national and global level. What is learnt from these studies is that effective action depends on changes in people; those who make and influence decisions about development priorities and at village level those who change their everyday lives. The cases show that these changes depend on effective communication efforts.

They are presented in the following order:

1. Campaign to eradicate guinea worm disease in Nigeria and Ghana
2. Rural sanitation in India
3. Promoting safe latrines in Bangladesh
4. Diarrhoeal disease control
5. Water and health in Northern Ghana
6. Facts for Life in the Philippines
7. Rural sanitation in Lesotho
8. Improving agriculture in Mexico

### Supporting Community Management: a manual for training in community management in the water and sanitation sector

Eveline Bolt and Marc P. Lammerink. 2003.  
Order code: OP 34-E  
Price: euro 12  
Occasional Paper no. 34, 113 pgs.

This manual provides background on key concepts and skills, and innovative tools to help improve the training of field staff related to community management of water and sanitation services. This manual is divided in two parts. Part I covers the theory of concepts and approaches. Issues addressed are: approaches to learn, useful concepts for field staff supporting community management,

discovery learning and community management, facilitation and preparing for a training session. Part II has 37 tools meant to help internalise and learn how to use the theory. They relate to issues such as getting to know each other, setting the scene, creating a learning atmosphere, participants' experiences and perception (diagnoses), preparing for training and monitoring and evaluation.

Target audience: trainers of field staff and project managers involved in community management of water and sanitation services.

### TECHNOLOGY TRANSFER IN THE WATER SUPPLY AND SANITATION SECTOR: A LEARNING EXPERIENCE FROM COLOMBIA

Edited by Jan Teun Visscher. 1997.  
Order code: TP 32-E  
Price: euro 18  
Technical Paper no. 32. ix, 90 pages.  
ISBN 90-6687-026-5

This document presents experiences from a technology transfer programme for multi-stage filtration (TRANSCOL) carried out in Colombia from 1989 to 1996. The programme introduced multi-stage filtration, an environmentally friendly water treatment technology, in eight different regions. The publication illustrates that a holistic joint learning project approach, as used over the past several years in Colombia, strongly supports capacity building in the sector. It comprises four main themes: a description of the programme and its results, a review of key issues in sustainable sector interventions, a discussion of theory and practice in technology transfer and an elaboration of the learning project approach.

Target audience: professionals and managers involved in the water supply and sanitation sector.

### PAYING THE PIPER: AN OVERVIEW OF COMMUNITY FINANCING OF WATER AND SANITATION

Phil Evans. 1992.  
Order code: OP 18-E  
Price: euro 9  
Occasional Paper no. 18.

Provides an overview of key issues relating to community financing, cost recovery and sustainability.

Target audience: professionals confronting the question of community financing at a practical level.

## COMMUNITY SELF-IMPROVEMENT IN WATER SUPPLY AND SANITATION: A TRAINING AND REFERENCE MANUAL FOR COMMUNITY HEALTH WORKERS, COMMUNITY DEVELOPMENT WORKERS AND OTHER COMMUNITY-BASED WORKERS

IRC. 1988.  
Order code: TS 5-E  
Price: euro 18  
Training Series no. 5. viii, 246 pages.

Provides community workers with ideas and information to work with the community in order to implement self-help improvements. For use in training courses and for distribution as a reference for workers in the field. Gives a number of simple self-help solutions using technologies, which are relatively easy to construct, operate and maintain. Provides information about the skills and materials required and the constraints on their application.

Target audience: community development workers, community health workers and other community-based workers in developing countries.

## GENDER IN WATER RESOURCES MANAGEMENT, WATER SUPPLY AND SANITATION:

### ROLES AND REALITIES REVISITED

Christine van Wijk-Sijbesma. 1998.  
Order code: TP 33-E  
Price: euro 23  
Technical Paper series no. 33. xii, 212 pages,  
ISBN 90-6687-027-3

This book is the revised and updated edition of IRC's 1985 best-seller, Participation of Women in Water Supply and Sanitation: Roles and Realities, which is now out of print. The aim and structure of the book are threefold. It presents a simplified framework for gender analysis which can be used in rapid participatory assessments and in planning. It also gives an overview of the developments at policy level on integrated water resources management, and links this to gender analysis. Finally, it summarizes and analyzes the operationalization of gender in water resources management principles in the water and sanitation sector.

Target audience: practitioners, policy makers and academics working in water supply and sanitation.

### **TOGETHER FOR WATER AND SANITATION: TOOLS TO APPLY A GENDER APPROACH.**

The Asian experience

Edited by Eveline Bolt. 1994.

Order code: OP 24-E

Price: euro 12

Occasional Paper no. 24. xiii, 107 pages.

Part I of this manual, which is a result of the gender workshop in Sri Lanka, provides a theoretical framework for women's involvement and applying a gender approach. Part II provides tools to apply a gender approach based on consolidated field experience for the various phases of a project. Although most tools are for use in the field, some are meant for gender sensitisation of project staff.

Target audience: project field staff, trainers and educators in the water and sanitation sector in Asia.

### **WORKING WITH WOMEN AND MEN ON WATER AND SANITATION: AN AFRICAN FIELD GUIDE**

IRC. 1994.

Order code: OP 25-E

Price: euro 9

Occasional Paper no. 25. vi, 98 pages.

Illustrated.

Developed by African women experts participating in the Kenya workshop. Aims to provide guidance on planning and implementing water and sanitation projects and programmes with a gender-aware approach. Contains guidelines on involving women, alongside men, in all stages of a project.

Target audience: planners and field workers who are directly involved in working with communities on water and sanitation projects and programmes in Africa.

### **ORGANISING LOCAL DOCUMENTATION SERVICES FOR THE WATER AND SANITATION SECTOR: GUIDELINES**

IRC. 1994.

Order code: RS 9-E

Price: euro 9

Reference Series no. 9. vi, 97 pages.

Provides basic guidance on how to organise collections of documents in sector institutions in such a way as to be able to find information quickly and easily, without the help of professional librarians or documentalists. Concentrates on the basic tasks needed to set up and operate a small documentation centre at the local level.

Target audience: managers of local water supply and sanitation units, professional or technical staff designated as supervisors of local documentation centres, clerical or secretarial staff responsible for the day-to-day operation of such a centre.

### **OPERATION AND MAINTENANCE OF SANITATION SYSTEMS IN URBAN LOW-INCOME AREAS IN INDIA AND THAILAND: REPORT ON A JOINT RESEARCH PROGRAMME, 1989-1993**

IRC. 1998.

Order code: PR 6-E

Price: euro 9

Project and Programme

Paper no. 6, x, 95 pages. Illustrated.

This is a report on a comparative research study carried out in India, the Netherlands and Thailand by: the Human Settlements Management Institute (HSMI), India, the National Housing Authority (NHA) and the Faculty of Engineering of the University of Chiang Mai, Thailand, and the Institute for Housing and Urban Development Studies (IHS) and IRC, The Netherlands, respectively.

Target audience: staff of organisations working in the field of urban sanitation in low-income areas of developing countries.

### **HYGIENE PROMOTION**

Brian Appleton and Christine van Wijk (IRC). 2003.

Order code: TOP 1-E

Thematic Overview Paper no. 1.

This TOP (Thematic Overview Paper) argues that Hygiene Promotion (HP) has great potential to reduce the death toll from poor hygiene. It also helps in making HP programmes more effective. It includes lessons learnt and case studies, as well as an extended resource section with an annotated bibliography, a list of the best websites and of organisations that are involved in HP.

Target audience: policy makers, practitioners, educators, trainers and researchers in the fields of health, hygiene, water supply and sanitation, but also those involved in broader programmes for the alleviation of rural or urban poverty.

### **SANITATION POLICIES**

Myles F. Elledge (EHP). 2003.

Order code: TOP 4-E

Thematic Overview Paper no. 4.

Sanitation is a critical intervention needed to improve living conditions among the world's poor and to reduce or prevent diarrhoea and other seriously debilitating conditions, especially among children. The absence of supportive policies to provide the basis for planning and implementing sanitation programmes is a missing link to improving coverage at a large scale. This publication focuses on policies designed and implemented to effectively close this gap. Its aim is to present an overview of recent experiences and trends along with ready-to-use references to links and important publications on the subject.

Target audience: policy makers and sector professionals interested in sanitation issues.

### **THE COMMUNITY-MANAGED SANITATION PROGRAMME IN KERALA: LEARNING FROM EXPERIENCE**

K. Balachandra Kurup. 1996.

Order code: PR 4-E

Price: euro 9

Project and Programme

Paper no. 4, xiii, 80 pages, Illustrated.

Relates the experiences in the sanitation programme of the Socio-Economic Units (SEUs), which began in 1989 as a component of the rural water supply programme financed by the Indian, Dutch and Danish governments. The four SEUs carry out the socio-economic activities in water with the Kerala Water Authority and design and implement the sanitation programme on their own. The programme goal is to provide poor households with permanent, good quality latrines, in such a way that they appreciate the facility and use it properly. This is one of the relatively few comprehensive descriptions of an Asian experience with community managed sanitation programmes. Learning from experience was one of the

major thrusts of the programme. The sharing of this programme's strategies, approaches and experiences should be of use to all those interested and involved in community-based social development.

Target audience: policy makers, planners, social scientists and social transformers.

### **FROM SANITATION TO DEVELOPMENT: THE CASE OF THE BALDIA SOAKPIT PILOT PROJECT**

Quratul Ain Bakhteari and Madeleen Wegelin-Schuringa. 1992.

Order code: TP 31-E

Price: euro 22

Technical Paper no. 31. xii, 100 pages. Illustrated.

ISBN 90-6687-021-4.

Describes and analyses a community-based sanitation project carried out in a low-income urban area in Karachi, Pakistan between 1979 and 1986. The emphasis is on the process through which women in the local communities became involved and motivated for sanitation and how this led to wider development efforts. Gives an overview of the impact of the project at national, municipal and community level and examples of other projects which incorporated components of the Baldia project.

Target audience: staff of sanitation projects in low-income urban areas in developing countries.

### **WHY A PIT LATRINE: A MANUAL FOR EXTENSION WORKERS AND LATRINE BUILDERS**

Joseph Mate. 1991.

Order code: TS 8-E

Price: euro 6

Training Series no. 8. ii, 22 pages. Illustrated.

A simple do-it-yourself manual designed to guide extension workers in supporting communities to build their own pit latrines and help those who want to build a latrine themselves with little outside help.

Target audience: extension workers and community members.

### **JUST STIR GENTLY: THE WAY TO MIX HYGIENE EDUCATION WITH WATER SUPPLY AND SANITATION**

Marieke T. Boot. 1991.

Order code: TP 29-E

Price: euro 28

Technical Paper no. 29. x, 171 pages. Illustrated.

ISBN 90-6687-016-8.

Provides options and methods for integrating hygiene education with water supply and sanitation projects. Illustrations and examples are used to reinforce the text and to give some ideas from 'real life' situations.

Target audience: those responsible for the development and implementation of hygiene education components in water supply and sanitation projects.

### **ON-SITE SANITATION: BUILDING ON LOCAL PRACTICE**

Madeleen Wegelin-Schuringa. 1991.

Order code: OP 16-E

Price: euro 9

Occasional Paper no. 16. iv, 74 pages. Illustrated.

Provides an insight into the cultural and social aspects which influence sanitation developments and an overview of technical options available for on-site sanitation in rural and peri-urban areas. Emphasizes the technical details which can be used in upgrading and provides technical aspects of the design of latrines as a guide for carrying out improvements.

Target audience: sanitary engineers, social scientists, economists, planners and hygiene educators involved in sanitation programmes for low-income communities in developing countries.

### **SCHOOL SANITATION AND HYGIENE EDUCATION**

Marielle Snel (IRC). 2003.

Order code: TOP 6-E

Thematic Overview Paper no. 6.

School sanitation and hygiene education (SSHE) refers to the combination of hardware and software components that are necessary to produce a healthy school

environment and develop or support safe hygiene behaviour. The hardware components include supply of drinking water and facilities for hand washing and safe disposal of excreta and solid waste in and around the school compound. The software components are the activities that promote conditions at school and practices of school staff and children that help to prevent water and sanitation-related diseases and parasites.

Target audience: practitioners and academics who are working directly or indirectly on school sanitation and hygiene education.

### **SCHOOL SANITATION AND HYGIENE EDUCATION INDIA: RESOURCE BOOK AND HANDBOOK FOR TEACHERS**

Sumita Ganguly, Chetana Kohli, Kathleen Shordt and Marielle Snel. 2002.

Order code: TP39-E

Technical Paper no. 39,

268 pages, (Resource Book) and 45 pages (Handbook for Teachers), illustrated.

ISBN 90-6687-033-8

This package of two manuals examines key features of SSHE such as: behavioural change, education and training, strategic planning, district planning, local mobilisation, technologies, and ongoing school/community activities. Both books contain a number of activity sheets to assist managers and trainers in their work. Although the books were developed in the context of the School Water and Sanitation Towards Health and Hygiene (SWASTHH) programme in India, they provide many useful guidelines and activities that apply to similar programmes elsewhere.

Target audience: managers, trainers and teachers involved in SSHE programmes.





SulabhENVIS website was one of the first to be uploaded on the NIC server and is a veritable storehouse of information on Hygiene, Sanitation and Sewerage Systems. Recently a separate link focussing on World Environment Day - 2005, theme - Green Cities (Plan for the Planet) was also highlighted in the website.



**Dr. S. Nath**, Coordinator, SulabhENVIS Centre felicitating **Mr. D. Bandyopadhyay**, Director (EI), Ministry of Environment and Forests, Govt. of India, during his visit to the Centre

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