

Environmental Health Management in Natural Disasters and Other Types of Emergency

A SELECTED AND ANNOTATED BIBLIOGRAPHY



WORLD HEALTH ORGANIZATION
Regional Office for the Eastern Mediterranean
1990

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O. A. Sperandio



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PREFACE

The WHO Office for the Eastern Mediterranean Region, EMRO, has a long-standing tradition of cooperation with the countries of the Region in activities related to emergency preparedness, disaster relief and assistance to refugees. Many efforts have been made at Regional and country level to enhance the national capability of response to emergencies and disaster situations and to raise awareness regarding the importance of emergency preparedness.

Disasters, natural and man-made, to which many countries of the Eastern Mediterranean Region are prone, can impair environmental conditions by inducing sudden changes in air and water quality, soil pollution, and damage to and even destruction of water supply and sanitation services. A disruption in the environmental balance can have serious consequences for the health and well-being of the already stricken population. Experience has shown that environmental health management is an important component of the overall effort for emergency preparedness and disaster relief. Having this in mind, EMRO's Environmental Health Programme, in a joint effort with the Regional Programme for Emergency Preparedness and Response is developing a Regional strategy for cooperation with the countries of the Region in aspects related to environmental health management in emergencies. The strategy is aimed at organization of education and training events, development of information exchange activities, provision of technical assistance and preparation of a systematic bibliographic search and review of the subject.

The bibliographic review and the preparation of a comprehensive annotated bibliography was carried out by Mr O.A. Sperandio (formerly Manager of the Water Supply and Sanitation Unit, WHO, Geneva) in consultation with EMRO's Environmental Health Programme. It is our hope that this compendium will be a useful source of information and reference for those responsible for emergency preparedness and for interventions aiming at the solution of the complex environmental health-related problems originated by emergencies and disasters. The present work is intended as a working document and the Environmental Health Unit at EMRO will be pleased to receive comments and suggestions for inclusion.

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ENVIRONMENTAL HEALTH MANAGEMENT IN NATURAL DISASTERS AND OTHER TYPES OF EMERGENCY

INTRODUCTION

This bibliography is primarily intended for use by professionals and technicians responsible for environmental health management in emergency and disaster situations. It is not exhaustive but focuses rather on key references on substantive subjects related to the planning and implementation of environmental health-related interventions in emergency preparedness and disaster relief.

It is expected that this bibliography will help those institutions, such as public health agencies, environmental protection agencies, water supply agencies, universities and civil defense bodies, that wish to build up a "basic library" as part of the effort to enhance their capability for solving environmental health problems arising from emergencies and disasters. It may also be of interest to professionals and technicians dealing with environmental health management in emergencies arising from influx of refugees.

For the most part, the bibliography addresses natural disasters but some of the material included relates also to man-made disasters and other emergencies.

The bibliographic search and the preparation of the text were carried out within the framework of the Environmental Health Programme of the WHO Regional Office for the Eastern Mediterranean Region. The bibliography should be seen as an initial effort - a starting point - and attempt to raise awareness regarding the importance of environmental health management in emergency preparedness and disaster relief operations. The list of basic publications will need to be revised and updated periodically, therefore any comments and suggestions would be welcome and should be addressed to:

WHO Regional Office for the Eastern Mediterranean,
Environmental Health Programme,
P.O. Box 1517,
Alexandria, Egypt.

The bibliography is divided into two main parts. The first is a selected and annotated bibliography; the second includes several appendices which list additional references, other annotated bibliographies, journals, periodicals, newsletters, films and slide lectures.

ANNOTATED BIBLIOGRAPHY

The selected and annotated bibliography covers the most relevant references that were available for review. It encompasses several aspects of environmental health but emphasis has been placed on subjects relating to water supply and sanitation since these are normally the areas of highest priority when it comes to environmental health interventions in disaster-stricken areas. Other subject areas, such as solid waste disposal, vector control, shelter, food hygiene and physical planning, are also considered but, with regard to the latter three, only references that have a direct

relation with environmental health management are included; this is because bibliographies covering these subjects, in particular shelter, are already available.

To determine the appropriateness of a reference for inclusion in the annotated bibliography, each publication was reviewed against the following criteria:

- Whether it relates directly to environmental health in emergency preparedness and disaster relief, reconstruction and rehabilitation;
- Whether it provides information on substantive environmental health issues that have relevant application for planning and implementation of environmental health-related interventions in emergencies and disaster relief;
- Whether it provides information on the basic issues and general features of disasters and their consequences that may be of use to environmental health personnel;
- Whether it contributes to raising awareness of the importance of environmental health management in emergency preparedness and disaster relief;
- Whether it provides information on the links between environmental health management and other activities involved in emergency preparedness and disaster relief;
- Whether it contributes to the use of low-cost appropriate technologies in dealing with environmental health problems in emergencies and disaster relief operations;
- Whether it provides practical approaches or ideas suitable for developing countries.

These criteria resulted in a list of major references available in English and/or French and including textbooks, manuals, handbooks and major technical papers. Journal articles and conference papers are not included in the annotated bibliography but are mentioned in the appendices. Each entry provides the following information:

Title Title and subtitle (if any).

Author(s) Surname(s) and initial(s) of author(s) or editor(s); personal author(s) or corporate author(s) (i.e. governments, institutions, international organizations, etc.); conference name or expert group name, in the case of proceedings or technical reports.

Bibliographic reference A full bibliographic reference based on the International Standard Bibliographic Description and the Anglo-American cataloguing rules.

Annotations A summarized description of the contents, highlighting the points of interest for professionals and technicians dealing with environmental health management in emergencies and disaster relief operations.

Content A list of the main topics included in the publication, references, annexes, etc; when the publication covers a wide spectrum of subjects the list presented focuses on issues of interest to environmental health management in emergencies and disaster relief operations.

Application Comments on the possible application of the publication and its use by national and international officials, professionals at the planning and implementation stages, technicians and community-level workers; also the languages in which the publication is available.

Source Information on the publisher and/or sales agent(s) (where available).

Cost Cost of the publication (where available and at time of going to press).

APPENDIX I - ADDITIONAL REFERENCES

In the bibliographic search and the development of the annotated bibliography, a large number of references, related in some way or other to the subject, were noted; some of them were not available for review while others were reviewed but not included in the annotated bibliography as they did not meet the criteria. These are listed in standard bibliographic form with no annotations. Also included are some references available only in French, Portuguese and Spanish.

APPENDIX II - JOURNALS, PERIODICALS AND NEWSLETTERS

Some key journals, periodicals and newsletters relevant to environmental health management in emergency and disaster situations are listed. Some of these deal with broad subjects but include, in some issues, papers, contributions and comments of interest to those responsible for emergency preparedness and disaster relief interventions.

APPENDIX III - FILMS AND SLIDE LECTURES

Films, slide lectures, instruction kits and other materials are listed that may be used in training activities related to environmental health management in emergency and disaster situations.

APPENDIX IV - ANNOTATED BIBLIOGRAPHIES, SELECTED ABSTRACTS

A list of annotated bibliographies is included together with information on references that may be useful to those searching for other sources of information on subjects related to environmental health management in emergency and disaster situations.

AUTHOR INDEX

The annotated bibliography presents its entries in alphabetical order of title. An index by author or editor is therefore provided and this also covers the appendices.

SUBJECT INDEX

A subject index is provided in which, for the sake of ease and simplicity, five main categories and a number of related and subcategories, have been established to indicate the main references for specific information on subjects relevant to environmental health management in emergency and disaster situations. The main categories cover the broad aspects of emergency preparedness and disaster relief and the main areas of environmental health and related subjects. The subcategories indicate, for the most part, availability of information about the relation of environmental factors to health, of technologies suitable for solving environmental health problems in disaster situations, and programme development aspects. Programme development covers a wide spectrum of activities related to approaches for planning, implementation and evaluation of projects and programmes for environmental health and related interventions as part of emergency preparedness, disaster relief, rehabilitation and reconstruction. The five main categories to be found in the index are: emergency preparedness and disaster relief; water supply; sanitation; solid waste disposal; and vector control.

ACKNOWLEDGEMENTS

The author would like to acknowledge the contributions provided by the following international agencies and institutions and which facilitated the bibliographic search:

- Centre for Research on the Epidemiology of Disasters (CRED), Brussels, Belgium;
- Office of the United Nations High Commissioner for Refugees (UNHCR), Geneva, Switzerland;
- Officer of the United Nations Disaster Relief Co-ordinator, Geneva, Switzerland.
- Pan American Health Organization/World Health Organization, Washington, DC: USA;
- United Nations Relief and Works Agency for Palestinian Refugees in the Near East, Amman, Jordan;
- World Health Organization, Geneva, Switzerland;
- World Health Organization, Regional Office for the Eastern Mediterranean, Alexandria, Egypt, and the Centre for Environmental Health Activities (CEHA), Amman, Jordan.

**SELECTED AND ANNOTATED
BIBLIOGRAPHY**

TITLE Assessing Needs in the Health Sector after Floods and Hurricanes

AUTHOR Pan American Health Organization

BIBLIOGRAPHIC REFERENCE Pan American Health Organization, *Assessing needs in the health sector after floods and hurricanes*. Washington, DC: Pan American Health Organization, 1987. 88p. (PAHO technical paper; no.11).

ANNOTATIONS This technical paper proposes a systematic approach to assessing health needs after floods and hurricanes. It presents a methodology for selecting and collecting the data needed to assess the major effects on health in the areas of communicable diseases, environmental health, food and nutrition, and vectors. The purpose of the assessment is to give decision-makers the information they need to make rapid and sound interventions. A list of indicators is provided to help in the decision-making process. In a very practical approach, a check-list is provided for each of the main areas and suggestions given regarding potential sources of information. Aspects of water supply, sanitation, solid waste disposal and vector control receive special attention. Emphasis is also given to surveillance systems and to water quality monitoring after disasters. This technical paper is probably one of the best sources for "strategic information gathering" after a natural disaster. Although addressed principally to situations deriving from floods and hurricanes it may also be highly useful for other disaster situations.

CONTENT

General features of natural disasters.

Critical decision-making: indicators for medical personnel/supplies; water supply; sanitation; solid wastes disposal; human settlements; food hygiene; corpses; vector control; food and nutrition; health centres and evacuation camps.

Magnitude of the impact: check-list for an initial survey.

Morbidity and mortality: risk factors involved after disaster; check-list; sources of information.

Environmental sanitation: water supply; sanitation; solid wastes disposal; food hygiene; corpses; check-list for a rapid assessment.

Vector control: check-list for a rapid assessment.

Food and nutritional status: check-list.

Evacuation camps: check list.

The health centre: check-list.

Surveillance systems: epidemiologic surveillance; nutritional surveillance; water quality monitoring systems; entomological surveillance; check list.

A bibliography with 15 references.

APPLICATION A publication of major interest to public health officials, sanitary engineers and sanitarians and aimed principally at those who have direct responsibility for disaster relief interventions, at planning and implementation levels. Also useful for training purposes and for emergency preparedness courses.

SOURCE Pan American Health Organization, 323 Twenty-third Street NW, Washington, DC 20037, USA or PAHO authorized sales agents.

COST US\$3.00

TITLE Assisting in Emergencies - A Resource Handbook for UNICEF Field Staff

AUTHOR Ockwell, R.

BIBLIOGRAPHIC REFERENCE Ockwell, R. *Assisting in emergencies: a resource handbook for UNICEF field staff*. New York: United Nations Children's Fund, 1986. 526p.

ANNOTATIONS This handbook was prepared to help UNICEF staff in various kinds of emergency situation and in planning and organizing actions to meet, in particular, the needs of children. It brings together, as far as possible, information which may be needed to help determine priorities, plan programmes and define appropriate inputs. Of special interest to this bibliographic review are parts 3 and 5 which include chapters on water supply and sanitation, define possible needs and responses and provide specific guidelines for various kinds of programme interventions which might be appropriate in particular circumstances. There are also specific references to personal and environmental hygiene and vector control. The handbook is mostly health-oriented and the environmental health aspects are well integrated with other public health issues that have to be considered in emergency situations.

CONTENT

Policies and organization: UNICEF policies; responsibilities and organization. Assessment and programmes: processes and principles for programmes; making assessment; formulating specific proposals; managing implementations; planning and evaluating.

Possible needs and responses: food, nutrition and income; health; water supplies; hygiene and sanitation; shelter and household functioning; child care; logistics.

Field office operations: mobilizing and managing personnel, assuming capacity and support services, managing funds and supplies; external relations.

Guidelines for programme interventions: food, nutrition and income; health; water supplies; hygiene and sanitation; shelter, community and household functioning; logistics.

Several annexes.

APPLICATION This handbook primarily addresses UNICEF field staff but it may be a practical tool also for personnel of other international organizations and national agencies dealing with emergency relief. It is a valuable "resource book" for those dealing with emergencies in developing countries, principally health sector staff responsible for the management of programmes and delivery of services. Available in English and French (eventually in Spanish).

SOURCE United Nations Children's Fund (UNICEF), 866 UN Plaza, New York, NY 10017, USA or Palais des Nations, CH-1211 Geneva 10, Switzerland.

COST Unknown

TITLE CAP Guide for Insect and Rodent Control through Environmental Health Management (The)

AUTHOR World Health Organization

BIBLIOGRAPHICAL REFERENCE World Health Organization. *The CAP guide for insect and rodent control through environmental health management*. Geneva: World Health Organization, 1987. 112p. (Unpublished document).

ANNOTATIONS This document is the written text of a CAP (Community Action Programme for Insect and Rodent Control) kit. The programme delineates preventive environmental measures for insect and rodent control in high-density, low-income urban areas of developing countries. The document emphasizes preventive measures for vector control which could be undertaken by individuals and families with or without the assistance of the local authorities. Guidelines for control using chemicals have also been appended as an adjunct means of control when essential. Information is provided on distribution, public health importance, biology and behaviour, and environmental control measures for each of the main vectors (insects and rodents). Since the material is intended for training, purpose questions and answers are also included. Issues related to waste management and house design vis-à-vis vector control are also included. A practical and concise overview of the insect and rodent control problem, the document itself is useful even if the full kit is not available.

CONTENT

Introduction: the urban vector problem; objectives of the CAP kit; health economic implications of vector infestations; approach to insect and rodent control; training and deployment of community workers and community participation.

Syllabus for training of community workers: mosquito; rodent; louse; bedbug; cockroach; housefly; sandfly; assassin bug control; solid waste management; wastewater management; sanitation; house design.

Communication techniques.

Course curriculum for training programme for community workers.

Appendices with information on first-aid for insect and rat bites, instruction for preparation of insect repellants and fly-paper and use of chemicals for insect and rodent control.

An extensive bibliography.

APPLICATION The target users of the CAP kit are community workers and the kit has been developed essentially as a training material for them. The kit focuses on vector control in high-density, low-income urban areas of developing countries but the information available may also be useful for officials and community workers dealing with vector control in rural areas. The material may be a useful reference for those working in disaster relief and emergencies as well as in refugee situations. Recommended mainly for training activities.

SOURCE World Health Organization, Environmental Health Division (EHE/RUD), 1211 Geneva 27, Switzerland.

COST Unknown

ENVIRONMENTAL HEALTH MANAGEMENT IN NATURAL DISASTERS

TITLE Community Water Supply - The Handpump Option

AUTHORS Arlosoroff, S., Tschannerl, G., Grey, D., Journey, W., Karp, A. Langenegger, O., Roche, R.

BIBLIOGRAPHIC REFERENCE Arlosoroff, S., Tschannerl, G., Grey, D. (et al.), *Community water supply: the handpump option*. Washington, DC: The World Bank. 1987. 212p.

ANNOTATIONS This document summarizes the findings of a project which was carried out jointly by the World Bank and the United Nations Development Programme and supported by several donors active in the sector. It provides guidelines for the selection of technologies and gives a detailed assessment of the different types of handpumps tested by the programme. The first part of the document addresses some sectoral issues including that of choice in community water supply technology. The other parts are on handpump-related subjects, with a comprehensive analysis of the experience gained by the project and specific recommendations regarding handpump selection. Detailed information is provided on 42 types of pump with results of laboratory tests and an overall assessment regarding discharge rate, ease of maintenance, reliability, corrosion resistance, abrasion resistance and manufacturing needs. A methodology is proposed (Annex 3) for estimating and comparing the costs and time savings of water supply options in specific situations. Pump selection tables are included, the ratings being based on evaluation of pump performance in the laboratory and in field trials.

CONTENT

Sector review and information on the project.

Community water supply technology: technology options; investment efficiency.

Project planning and implementation: the aquifer; the well; the handpump; planning guidelines.

Handpump technology: performance; design and development; guidelines for VLOM design.

Pump selection guide: use of pump selection tables; discharge rate; ease of maintenance; reliability; corrosion resistance; abrasion resistance; pump selection tables.

Pump selection: examples; handpump compendium.

Pumps tested: comparison of costs and time savings for water supply options.

A bibliography with more than 90 references.

APPLICATION The report is aimed at a wide audience, although principally policy-makers, programme planners, and professionals and technicians actively involved in buying, designing or making handpumps. The information provided may also be of special interest to national and international staff responsible for water supply in temporary settlements, during rehabilitation after disaster, and in refugee areas. Available in English, French and Spanish.

SOURCE The World Bank, 1818 H Street NW, Washington, DC 20433, USA.

COST US\$11.95

TITLE Design of Pour-Flush Latrines (The)

AUTHOR Mara, D.D.

BIBLIOGRAPHICAL REFERENCE Mara, D.D. *The Design of pour-flush latrines*. Washington, DC: World Bank, 1985. 36p. (TAG technical note; no.15).

ANNOTATIONS This technical note sets out guidelines for the design of pour-flush latrines, based upon TAG (Technical Advisory Group - UNDP/World Bank) experience in Brazil, India and elsewhere. The guidelines have been written for use in developing countries, consequently emphasis has been placed on achieving simplicity of design consistent with reliability of operation. The paper discusses the merits and suitability of pour flush latrines for use in low-income non-sewered urban areas and rural areas and assumes that a pour-flush latrine is an appropriate and affordable solution for excreta disposal, compatible with available resources as well with prevailing physical, socio-cultural and economic conditions prevailing in developing countries. Information is provided on criteria for the design, construction, operation and maintenance of pour-flush latrines as well on the economic and social costs of this type of installation.

CONTENT

Introduction: basic needs in sanitation; sanitation technologies.
 Pour-flush latrines: description; merits and suitability; water requirements.
 Design: component parts; latrine pan; waterseal; superstructure; inter-connecting pipework; leach pits; communal pour-flush latrines; groundwater pollution prevention.
 Cost: economical and financial costs.
 Construction: latrine unit; interconnecting pipework; leach pits.
 Operation and maintenance of pour-flush latrines.
 Annex: leach pit design examples.
 Several tables and figures.

APPLICATION This technical note is a useful reference and source of information for professionals and technicians responsible for sanitation interventions in low-income urban and rural areas, including those responsible for environmental health in refugee camps and in rehabilitation and reconstruction after disaster. It is of special interest for community health workers and sanitarians.

SOURCE The World Bank, 1818 H Street NW, Washington, DC 20433, USA.

COST Unknown

TITLE Design of Ventilated Improved Latrines (The)

AUTHOR Mara, D.D.

BIBLIOGRAPHICAL REFERENCE Mara, D.D. *The Design of ventilated improved latrines*. Washington, DC: The World Bank, 1984. 73p. (TAG technical note; no.13).

ANNOTATIONS This paper is one of a series of technical notes prepared by TAG (Technical Advisory Group - UNDP/World Bank) on aspects of water supply and sanitation in developing countries. Its main purpose is to discuss general design criteria for the ventilated improved latrine and to review developments in its design. It draws on experience with the use of VIP latrines in several countries. Information is provided on criteria for the design of single-pit and double-pit VIP latrines. Aspects related to applicability and constraints observed with the use of the VIP latrines are described and discussed. It provides advice on how to build and maintain this type of installation and is probably one of the best reviews of the subject. Of special interest are the case studies included as annexes with information on VIP latrine types that have been constructed in Botswana, Brazil, Ghana, Tanzania and Zimbabwe.

CONTENT

Ventilated improved latrines: general description; odour control; insect control; component parts.

Single-pit VIP latrines: design and construction details; fabrication of vent pipes; relocation and emptying of pits.

Alternating twin-pit VIP latrines: design and construction details; multicompartment units; emptying of pits.

Applicability and constraints: housing density; water supply service level; ground conditions; groundwater pollution; sociocultural factors.

Design selection criteria.

Costs.

Annexes: soil stability criteria and case studies for five countries.

APPLICATION This is a valuable reference for professionals and technicians responsible for sanitation programmes/projects in low-income urban and rural areas. It contains useful information for those dealing with environmental health institutions, in rehabilitation and reconstruction after disaster and in refugee situations.

SOURCE The World Bank, 1818 H Street NW, Washington, DC 20433, USA.

COST Unknown

TITLE Disaster History: Significant Data on Major Disasters Worldwide, 1900 - May 1988.

AUTHOR The Office of US Foreign Disaster Assistance, Agency for International Development

BIBLIOGRAPHIC REFERENCE United States, Office of the US Foreign Disaster Assistance. *Disaster history: significant data on major disasters worldwide, 1900-May 1988*. Washington, DC: US Agency for International Development, 1988. 217p.

ANNOTATIONS The OFDA Disaster History provides information on major disasters which have occurred around the world since 1900. It includes information on the date of the disaster, its type, region and country, the number of people killed, affected and homeless and the estimated cost of damage.

CONTENT

Data on major disaster, with disaster number: strike month/day, region, country, type (earthquake and volcano, weather, drought and accidents), number of people killed, affected, made homeless, estimated damage and comments.

APPLICATION The information available may be of use to professionals at the planning level, dealing with emergency preparedness and disaster relief.

SOURCE The Office of US Foreign Disaster Assistance, Agency for International Development, 320 Twenty-first Street NW, Washington, DC 20523, USA.

COST Unknown

TITLE Disaster Management - Comprehensive Guidelines for Disaster Relief

AUTHOR Spirgi, E.H.

BIBLIOGRAPHIC REFERENCE Spirgi, E.H. *Disaster management: comprehensive guidelines for disaster relief*. Bern: Hans Huber Publications, 1979. 118p.

ANNOTATIONS This publication outlines the common aspects of natural and man-made disasters and the priorities of a rational management scheme aimed at saving more lives. It reviews approaches to the assessment of urgent and long-term needs in terms of mass community management. Emphasis is placed on medical and medical-care aspects but some references are made to environmental health and related issues.

CONTENT

General information on disaster management.

Emergency medical care: organization of medical services; communicable diseases and sanitation; control measures; sanitation; epidemiologic surveillance.

Disaster planning: disaster prevention measures; manpower; equipment.

Training in disaster management: training in first-aid for physicians; paramedical personnel and the public.

Mass casualty management: introduction and definitions; general principles; community and regional pre-disaster planning; hospital pre-disaster planning; triage; resuscitation and delayed wound closure.

41 references.

APPLICATION These guidelines are intended primarily for health workers who may become involved in disaster relief activities. The chapters on disaster management may be of interest to environmental health personnel.

SOURCE Hans Huber Publishers, Bern, Switzerland.

COST Unknown

TITLE Disaster Prevention and Mitigation: A Compendium of Current Knowledge, Volume 2: Hydrological Aspects

AUTHOR United Nations, Office of the Disaster Relief Co-ordinator (UNDRO).

BIBLIOGRAPHIC REFERENCE United Nations, Office of the Disaster Relief Co-ordinator. *Disaster prevention and mitigation - A compendium of current knowledge: hydrological aspects*. New York: United Nations, 1978. 98p. (Disaster prevention and mitigation series; volume 2).

ANNOTATIONS This compendium is the second volume in the series entitled "Disaster Preparedness and Mitigation"; the aim of these UNDRO publications is to provide the international community with a comprehensive review of existing knowledge of the causes and characteristics of natural phenomena and of the measures which may be taken to reduce or eliminate their impact on disaster-prone developing countries. This volume concentrates mainly on flood prevention and preparedness. It reviews the causes, kinds and nature of flooding, the various types of control, the current level of technology and describes temporary as well as permanent measures for the prevention of floods and their associated problems. Attention is given to methodology, data monitoring, warnings and flood fighting; areas needing further research and action are specified. Information is provided on control of land use and flood plain occupation.

CONTENT

Introduction: storms and flood causes; disaster prevention.

Permanent controls: flood hazards; engineering control, control of land use and flood plain occupation.

Emergency measures: flood forecasting methodology; data monitoring; management and organization; flood fighting.

Permanent control.

Emergency measures.

Hydrological personnel.

APPLICATION All the publications in the series "Disaster Prevention and Mitigation" address a broad range of users, including high-level government officials, administrators, technical experts in the field and specialists in the various areas of disaster prevention. Professionals and technicians responsible for environmental health management in emergency preparedness programmes may also find this volume useful. Available in English, French and Spanish.

SOURCE United Nations, Distribution and Sales Section, Palais des Nations, 1211 Geneva 10, Switzerland or United Nations, New York, NY 10017, USA.

COST US\$20.000

ENVIRONMENTAL HEALTH MANAGEMENT IN NATURAL DISASTERS

TITLE Disaster Prevention and Mitigation: A Compendium of Current Knowledge, Volume 5: Land Use Aspects

AUTHOR United Nations, Office of the Disaster Relief Co-ordinator (UNDRO)

BIBLIOGRAPHICAL REFERENCE United Nations, Office of the Disaster Relief Co-ordinator. *Disaster prevention and mitigation - A compendium of current knowledge: land use aspects*. New York: United Nations, 1978. 69p. (Disaster prevention and mitigation series; volume 5).

ANNOTATIONS This compendium is the fifth volume in the series entitled "Disaster Prevention and Mitigation"; the aim of these UNDRO publications is to provide the international community with a comprehensive review of existing knowledge of the causes and characteristics of natural phenomena and of the measures which may be taken to reduce or eliminate their impact on disaster-prone developing countries. This volume examines the spatial aspects of disaster prevention and, in particular, land-use planning. It describes and evaluates measures designed to steer development away from hazardous areas and demonstrates how physical planning, and especially land-use control, can contribute to reducing both the number of disasters and the vulnerability of human settlements. The volume describes the aim and principles of comprehensive risk analysis, reviews land development practices and how they relate to the occurrence of disasters, and prescribes land-use policies and measures which are most relevant to disaster prevention and mitigation, including legal controls, fiscal and financial incentives, and direct government action.

CONTENT Vulnerability analysis: natural hazard assessment; risk mapping; damage probability assessment.

Comprehensive land development and disaster prevention: national and regional policies; rural and urban policies; integration of land-use planning in a comprehensive planning process.

Land-use policy and measures applicable to disaster prevention and mitigation: land-use policies; zoning controls; fiscal and financial incentives; direct government action; public land development.

Land-use measures for the prevention and mitigation of floods and earthquakes. Floods and land-use control: zoning, building codes; re-location of vulnerable settlements; land use planning in earthquake-prone areas.

Conclusions and recommendations.

Selected bibliography.

APPLICATION All the publications in the series "Disaster Prevention and Mitigation" address a broad range of users, including high-level government officials, administrators, technical experts in the field and specialists in the various areas of disaster prevention. Professionals and technicians responsible for environmental health management in emergencies may also find this volume useful. Available in English, French and Spanish.

SOURCE United Nations, Distribution and Sales Section, Palais des Nations, 1211 Geneva 10, Switzerland or United Nations, New York, NY 10017, USA.

COST US\$20.00

TITLE Disaster Prevention and Mitigation: A Compendium of Current Knowledge, Volume 8: Sanitation Aspects

AUTHOR United Nations, Office of the Disaster Relief Co-ordinator (UNDRO) (Dr J. McDonald and Professor D. Bradley)

BIBLIOGRAPHICAL REFERENCE United Nations, Office of the United Nations Disaster Relief Co-ordinator. *Disaster prevention and mitigation - A compendium of current knowledge: sanitation aspects*. New York: United Nations, 1982. 76p. (Disaster prevention and mitigation series; volume 8).

ANNOTATIONS Volume 8 of the "Disaster Prevention and Mitigation" series published by UNDRO deals specifically with environmental health issues. The aim of these UNDRO publications is to provide the international community with a comprehensive review of existing knowledge of the causes and characteristics of natural phenomena and of the measures which may be taken to reduce or eliminate their impact on disaster-prone developing countries. This compendium covers the most relevant aspects of environmental health in the event of disaster. Information is provided on water supply and waste disposal, covering organizational and planning aspects and providing specific information on alternative solutions to water supply and waste disposal problems in areas stricken by disaster and other emergency situations. It describes the most common disasters and the risks they pose to water supply and waste disposal systems. It also reviews the matter of vector control in emergencies, providing information on the role of vectors in disease transmission, on vector control equipment, and on techniques in the use of insecticides. The compendium covers mostly water supply, excreta disposal and vector control.

CONTENT

Hazards and health: natural hazards; sanitary risks.

Resisting and containing damage to water supply and waste disposal systems: choice of systems; earthquake and flood resistance; long-term measures; maintenance to reduce vulnerability.

Water supply: excreta and waste disposal; reconstruction programmes.

Water supply and waste disposal in emergency camps: water supply; excreta disposal; community action.

Organizational and planning aspects; sanitary relief measures; planning; data requirements; maintenance; materials and equipment; training and personnel.

Vector control: general considerations; arthropod vectors, their infections and control; insecticides in common use for public health; vector control equipment and techniques.

Rodents and their control.

A bibliography with 52 references.

APPLICATION The volume addresses professionals and technicians responsible for emergency and disaster relief, refugee camps, etc. It is of interest to trainers and a valuable reference for courses on emergency preparedness and disaster relief. It should be seen more as a source of general information on the subject than as a reference on technological alternatives for water supply, waste disposal and vector control. Available in English, French and Spanish.

SOURCE United Nations, Distribution and Sales Section, 1211 Geneva 10, Switzerland or United Nations, New York, NY 10017, USA.

COST US\$20.00

TITLE Disaster Prevention and Mitigation: A Compendium of Current Knowledge, Volume 10: Public Information Aspects

AUTHOR United Nations, Office of the Disaster Relief Co-ordinator (UNDRO)

BIBLIOGRAPHIC REFERENCE United Nations, Office of the Disaster Relief Co-ordinator. *Disaster prevention and mitigation - A compendium of current knowledge: public information aspects*. New York: United Nations, 1979. 142p. (Disaster prevention and mitigation series; volume 10).

ANNOTATIONS This compendium is the tenth volume in the series entitled "Disaster Prevention and Mitigation"; the aim of these UNDRO publications is to provide the international community with a comprehensive review of existing knowledge of the causes and characteristics of natural phenomena and the measures which may be taken to reduce or eliminate their impact on disaster-prone developing countries. This volume deals with information policy and procedures; it examines the public information responsibility of various levels of government, as well as the possible participation of the public in the implementation of preparedness and prevention. It identifies actions to be taken regarding public information and training and provides insights into aspects related to technology and public information. Emphasis is placed on mediated information systems, personal communications and the strategy and procedures for public information messages. Examples are given of information and public education programmes in China and the United States of America. The volume includes bibliographical references to a considerable number of studies on the subject.

CONTENT

The event: types of disaster and information needs; disasters and public information.

The public: cultural attitudes and human behaviour in disasters; the public as an information resource.

Governments and their public information functions: areas and levels of government; the warning process; government services.

Non-governmental organizations and their public information functions.

Public information - theory and practice: communication and planning; dealing with the mass media.

Public education and training: needs, what can be done.

Technology and public information: telecommunication systems; community media and mass media systems; future technology.

Word of mouth: communication chains; family networks; community settings; use of folk media messages: message strategies; rumour and misinformation.

Future needs.

Annexes with information on warning systems, information and education programmes in China and in the United States of America.

Several bibliographical references.

APPLICATION All the publications in the series "Disaster Prevention and Mitigation" address a broad range of users, including high-level government officials, administrators, technical experts in the field and specialists in the various areas of disaster prevention. Professionals and technicians responsible for environmental health management in emergencies may also find this volume useful. Available in English, French and Spanish.

SOURCE United Nations, Distribution and Sales Section, Palais des Nations, 1211 Geneva 10, Switzerland or United Nations, New York, NY 10017, USA.

COST US\$20.00

TITLE Disaster Prevention and Mitigation: A Compendium of Current Knowledge, Volume 11: Preparedness Aspects

AUTHOR United Nations, Office of the Disaster Relief Co-ordinator (UNDRO)

BIBLIOGRAPHICAL REFERENCE United Nations, Office of the Disaster Relief Co-ordinator. *Disaster prevention and mitigation - A compendium of current knowledge: preparedness aspects*. Geneva: United Nations, 1984. 217p. (Disaster prevention and mitigation series; volume 11).

ANNOTATIONS This publication is the eleventh volume in the series entitled "Disaster Prevention and Mitigation"; the aim of these UNDRO publications is to provide the international community with a comprehensive review of existing knowledge of the causes and characteristics of natural phenomena and the measures which may be taken to reduce or eliminate their impact on disaster-prone developing countries. This volume presents a general review of the causes and characteristics of phenomena which can lead to disasters and the measures which can be taken to reduce or eliminate their impact. It is an elaborated résumé of current practice in disaster prevention and mitigation, based on international experience. It includes a detailed analysis of general preparedness measures and the recommended action to be taken in different types of natural and man-made disaster. Information is also provided on indicators for disaster assessment and flow charts for relief phases. The importance of interventions in the environmental health field is highlighted, principally water supply, waste disposal and shelter. It serves also to point the way to other, more detailed sources of information which should be readily available to emergency planners.

CONTENT

General preparedness measures: emergency plans; legislation; predictions; forecasts and warnings; public information; assessment for the post-disaster phase; emergency health care; evacuation; training and education.

Special measures according to type of disaster: earthquake; flood; drought; volcanic eruption; accidents involving hazardous material; marine pollution; forest and bush fires.

Special types of assistance: military assistance; search and rescue; space technology.

Annexes dealing with indicators for disaster assessment, food aid; flow charts for assessment and relief phases (medical services, water, waste disposal, shelter, food and transport); syllabus for a course in disaster management.

APPLICATION A compendium of current knowledge that may be of great use to decision-makers, professional staff and technicians involved in emergency preparedness and disaster relief operations. A must in any basic library on the subject. A valuable reference for those at the planning level and for planning training activities in disaster prevention and mitigation. Available in English, French and Spanish.

SOURCE United Nations, Distribution and Sales Section, Palais des Nations, 1211 Geneva 10, Switzerland or United Nations, New York, NY 10017, USA.

COST US\$40.00

TITLE Disaster Prevention and Mitigation: A Compendium of Current Knowledge, Volume 12: Social and Sociological Aspects

AUTHOR United Nations, Office of the Disaster Relief Co-ordinator (UNDRO)

BIBLIOGRAPHICAL REFERENCE United Nations, Office of the Disaster Relief Co-ordinator. *Disaster prevention and mitigation - A compendium of current knowledge: social and sociological aspects*. Geneva: United Nations, 1986. 48p. (Disaster prevention and mitigation series; volume 12).

ANNOTATIONS This compendium is the twelfth volume in the series entitled "Disaster Prevention and Mitigation"; the aim of these UNDRO publications is to provide the international community with a comprehensive review of existing knowledge of the causes and characteristics of natural phenomena and the measures which may be taken to reduce or eliminate their impact on disaster-prone developing countries. This volume examines the social and sociological aspects of natural disasters and sets out some basic principles of social analysis and planning which might assist in mitigating the impact of natural disasters. Information is provided on the main elements to be considered in a general framework for analysis and evaluation of the social aspects of the disaster. Emphasis is placed on behaviour patterns resulting from disasters, at the level of the community, the family and the individual.

CONTENT

Context and objectives: scope, audience, focus.

Disaster overview: the changing trends; damage and loss; patterns.

Definition: the concept of disaster; the disaster process; social science units.

Disaster-related behaviour patterns: review of disaster myths in the emergency period; planning assumptions about disaster behaviour.

Group and organizational considerations in emergency situations: myths; planning assumptions; organizational patterns; coordination guidelines.

Social considerations in pre-disaster planning: social principles; planning and development; priorities; disaster preparedness plans; training and public awareness.

Social considerations in forecasting and warning.

Social considerations in pre-impact evacuation planning.

Conclusions.

APPLICATION All publications in the series "Disaster Prevention and Mitigation" address a broad range of users, including high-level government officials, administrators, technical experts in the field and specialists in the various areas of disaster prevention. Professionals and technicians responsible for environmental health management in emergencies may also find this volume useful. Available in English, French and Spanish.

SOURCE United Nations, Distribution and Sales Section, Palais des Nations, 1211 Geneva 10, Switzerland or United Nations, New York, NY 10017, USA.

COST US\$20.00

TITLE Emergency Health Management after Natural Disaster (PAHO Scientific Publication No.407)

AUTHOR Pan American Health Organization

BIBLIOGRAPHIC REFERENCE Pan American Health Organization. *Emergency health management after natural disaster*. Washington, DC: Pan American Health Organization, 1981, 74p. (PAHO scientific publication; no.407).

ANNOTATIONS This comprehensive guide provides a general overview of the public health problems that arise after natural disasters and of the recommended criteria for relief procedures. It does not elaborate on the technical aspects of the relief procedures since detailed technical guidelines on specialized topics are covered by other publications of the same series. The guide is divided into two sections. The first presents a summary of experience concerning the public health problems that commonly appear as a result of natural disasters. The second section deals with specific health topics and relief procedures. One chapter deals specifically with environmental health management, setting priorities and providing information on emergency relief measures in relation to water supply, waste disposal, vector control, personal hygiene, burial of the dead and general public information. This publication also provides a comprehensive analysis of subjects such as epidemiological surveillance, planning and layout of temporary settlements, disaster preparedness, and the re-establishing of normal programmes that relate directly to environmental health management.

CONTENT

The effects of disaster on health and an approach to relief: health problems common to all disasters; health problems related to the type of disaster.

Emergency relief procedures: coordination of national relief and assessment of health needs; management of mass casualties; epidemiological surveillance and disease control; environmental health management, priorities, water supply, basic sanitation, vector control, personal hygiene, burial of the dead, general public information; food and nutrition; management of health relief supplies; planning, layout and management of temporary settlements and refugee camps; communication and transport; management of international relief assistance.

Re-establishing normal programmes.

Disaster preparedness, vulnerability analysis, training of health personnel.

Annexes with information on external support agencies providing health relief. Bibliography.

APPLICATION This guide is intended for use by decision-makers and senior administrators responsible for providing health and related services after natural disasters and emergencies. It may be very useful for those developing national manuals covering local circumstances. It may be of value also for training activities. Available in English and Spanish.

SOURCE Pan American Health Organization, 525 Twenty-third Street NW, Washington, DC 20037, USA or PAHO/WHO authorized sales agents.

COST US\$6.00

TITLE Emergency Management USA

AUTHOR Federal Emergency Management Agency (FEMA)

BIBLIOGRAPHICAL REFERENCE United States, Federal Emergency Management Agency. *Emergency Management USA*. Washington, DC: Federal Emergency Management Agency, 1986. (Home study; number 2).

ANNOTATIONS This publication is a home-study course for the US citizen based on the comprehensive emergency management approach. It leads the reader through the development of personal emergency preparedness plans and encourages participation in the overall emergency effort. The course is self instructional. It describes, in simple language, the various natural and technological hazards and suggests steps for development of an emergency plan at the household level. The course contains eight units, a pre-test and a final examination. There are several intermediate tests to cover the wide spectrum of subjects dealt with by the course. The tests are self-administered. The course addresses the US audience but the approach and much of the material may be of use in other countries.

CONTENTS

Introduction and pre-test

Unit 1 The four phases of emergency management: review.

Unit 2 Analysing the risks: review.

Unit 3 Emergency conditions: applying the four phases; natural hazards; technological hazards; review.

Unit 4 Developing an emergency plan: a family plan.

Unit 5 The risk of nuclear attack: review.

Unit 6 Developing an emergency plan for nuclear attack: review.

Unit 7 Personal action plans: where to go next; review.

Unit 8 Emergency management review: summary.

Final examination.

APPLICATION A useful tool for educating the population in some basic principles of emergency management. Would need to be adapted for use in developing countries but the approach and the information available can be of value. It may be of special interest to those responsible for education campaigns and public information on aspects related to disaster management. Even if it does not directly address the issues of environmental health management the information available may also be of interest to engineers, sanitarians and community workers, who have to act in emergency situations.

SOURCE Federal Emergency Management Agency, P.O. Box 70274, Washington, DC 20024, USA.

COST Unknown

TITLE Emergency Planning for Water Utility Management

AUTHOR American Water Works Association, Emergency Planning Committee

BIBLIOGRAPHICAL REFERENCE American Water Works Association. *Emergency planning for water utility management*. Denver: American Water Works Association, 1984. 69p. (American Water Works Association Manual M19).

ANNOTATIONS This AWWA manual provides a detailed analysis of the effects of disaster on water supply systems and recommends protective measures. The concept of vulnerability assessment is discussed and examples presented. Information is provided on protective measures, emergency operations planning and training requirements. An outline of an emergency operations plan is presented. The publication has appendices on dealing with threats to add chemicals and biologicals to a municipal water supply and on procedures for recording such threats and other anonymous telephone calls.

CONTENTS

Introduction: emergency planning.

Effects of disaster on a water utility: effects of earthquakes, hurricanes, tornadoes, floods, tsunamis, riots, vandalism, civil disorder, strikes, hazardous material spills and nuclear attack.

Vulnerability assessment: vulnerability analysis; water requirements under disaster conditions; functional operation and examples of vulnerability analysis.

Protective measures: effects and countermeasures; contamination; power outages and communication disruption; transportation failures; plant damage; protection of personnel; cost considerations.

Emergency operations planning: basic principles; contribution to a guide to making and implementing an emergency operations plan; security.

Planning and training: training elements and requirements.

Appendices: dealing with threats to add chemicals and biologicals to a municipal water supply, most commonly used "10" signals; procedures for recording bomb threats or other anonymous phone calls.

Numerous useful tables and an extensive bibliography.

APPLICATION A publication of major interest to staff of water supply agencies and professionals in the health sector responsible for water quality control and disaster relief. The manual is based mostly on experience and conditions in the United States of America but can be used as a reference by professionals of other countries. It contains very good material for use as reference in training events dealing with the subject.

SOURCE American Water Works Association, 6666 W. Quincy Ave, Denver, CO 80235, USA.

COST US\$16.20

TITLE Emergency Vector Control after Natural Disaster

AUTHOR Pan American Health Organization

BIBLIOGRAPHICAL REFERENCE Pan American Health Organization. *Emergency vector control after natural disaster*. Washington, DC: Pan American Health Organization, 1982. 108p. (PAHO scientific publication; no.419).

ANNOTATIONS This manual is intended to call attention to the insect, rodent, pest and related problems that may occur after a natural disaster. It provides guidelines for the planning, implementation and evaluation of vector control in disaster and emergency situations. It contains information on vector and rodent-related diseases and suggests control measures for mosquitos, flies, rodents and other vectors. It covers also the issues of equipment, supplies and the use of pesticides for vector control.

CONTENTS

Overview: disaster preparedness; post-disaster action; vector and rodent-related diseases.

Control measures for specific vectors: *Aedes aegypti*; anopheline vectors of malaria; *Culex quinque-fasciatus* and other pest mosquitos; flies, rodents and other vectors.

Consultants: role of consultants in vector control, recommendations and reports, training.

Annexes: bibliography; equipment and supplies; pesticides; guide to insecticides, rodenticides and equipment.

APPLICATION A valuable reference for professionals and technicians responsible for environmental health interventions in emergencies and disaster situations. It may serve as a basis for national guidelines on the subject; also for training events related to emergency preparedness and disaster relief. Available in English and Spanish.

SOURCE Pan American Health Organization, 525 Twenty-third Street NW, Washington, DC 20037, USA or PAHO/WHO authorized sales agents.

COST US\$6.00

TITLE Environmental Engineering and Sanitation

AUTHOR Salvato Jr., J.A.

BIBLIOGRAPHICAL REFERENCE Salvato Jr., J.A. *Environmental engineering and sanitation*. 2nd edition. New York: John Wiley and Sons, 1972. 919p.

ANNOTATIONS This compendium emphasizes practical applications of sanitary and engineering theory and principles for environmental control in urban and rural areas. Design, construction, maintenance and operating details are provided. Several areas of interest are covered, addressing issues related to water supply, waste disposal, food protection, vector control, water pollution control, radiation use and protection, and housing. Numerous tables, forms, plates and figures are included. The book also includes a chart of the characteristics and control of 55 water-borne and food-borne diseases.

CONTENT

Control of communicable and certain non-infectious diseases.

Environmental engineering planning.

Water supply: water quality; disease transmission; water treatment; water systems design; pumps; disinfection; emergency water supply and treatment.

Wastewater treatment and disposal: disease hazard; small water-borne sewage disposal systems; sewage works design; excreta disposal - privies and latrines; industrial wastes.

Solid waste management: composition; storage and collection; treatment and disposal of solid wastes; incineration; sanitary landfill.

Air pollution control: health and economic effects; sources and types of air pollutants; sampling and measurement; air quality standards; programme and enforcement.

Radiation uses and protection.

Food protection: food handling quality and storage.

Recreation areas and temporary residences.

Vector and weed control: pesticide use; insect and rodent control.

Housing and the residential environment: health, economic and social effects; appraisal of quality of living; housing; plumbing; ventilation.

Administration: environmental control programme planning; programme supervision; emergency sanitation.

Several appendices on data, units of management and planning models.

APPLICATION This book may be useful to practitioners in environmental health, professionals and technicians. It may also be of value to teachers and students of environmental health, civil and sanitary engineering. The detailed information available as well as the specific references on emergency water supply and treatment and emergency sanitation may be of interest to national and international officials dealing with emergency preparedness, disaster relief, reconstruction and rehabilitation, and refugee situations.

SOURCE Wiley-Interscience, Eastern Distribution Centre, 1 Wiley Drive, Somerset, NJ 08873, USA.

Cost: Unknown

TITLE Environmental Health Engineering in the Tropics: An Introductory Text

AUTHOR Cairncross, S., Feachem, R.G.

BIBLIOGRAPHICAL REFERENCE Cairncross, S., Feachem, R.G. *Environmental health engineering in the tropics: an introductory text*. Chichester: John Wiley and Sons, 1983. 298p.

ANNOTATIONS A comprehensive review of the available know-how and technology for environmental health interventions in developing countries. It emphasizes the use of environmental health engineering methods for the control of disease based on the fact that many major infectious diseases in tropical and developing countries are amenable to control through environmental management. The book describes in detail these infections and the interventions that may be used against them. The environmental health interventions that receive most attention are water supplies and excreta disposal; the relationship between these interventions and some infectious diseases are covered in detail.

CONTENTS

Health and pollution: engineering and infectious disease; health and water chemistry; water quality and standards.

Water supply: water supply in developing countries; rural water supply; urban water supply and water treatment.

Excreta and refuse: treatment; disposal and re-use; types of excreta disposal system; planning a sanitation programme; wastewater treatment; refuse collection and disposal; composting; health hazards of waste re-use.

Environmental modifications and vector-borne diseases; control of arthropods; dams; irrigation and health.

Several appendices, including biological classification conventions; a glossary and a check-list of water-related and excreta-related diseases.

Each chapter lists references and readings.

Extensive bibliography on the subjects covered.

APPLICATION The book is intended for those from an engineering, medical or public health background. It may be a very useful reference for professionals and technicians responsible for environmental health management in emergencies, disaster relief and refugee situations.

SOURCE John Wiley and Sons Ltd., Distribution Centre, Shripney Rd., Bognor Regis, Sussex PO22 9SA, United Kingdom.

COST £10.45

TITLE Environmental Health Management after Natural Disaster (PAHO Scientific Publication; No.430)

AUTHOR PAHO, with acknowledgement to the cooperation provided by Pierre Leger and David Donaldson

BIBLIOGRAPHIC REFERENCE Pan American Health Organization. *Environmental health management after natural disaster*. Washington, DC: Pan American Health Organization, 1982. 68p. (PAHO scientific publication; no.430).

ANNOTATIONS This manual is intended to provide a framework that may assist planners in the health and other sectors to incorporate environmental health measures into their strategies and actions to protect the population from the effects of natural disasters. The recommended environmental health measures are listed in the order of priority in which they should be undertaken during an emergency. In the first section the manual addresses the effects of natural disasters on environmental health conditions and services. The second section describes environmental health measures that should be undertaken in each of three time frames: the pre-disaster, disaster and post-disaster periods. Of special interest is a matrix detailing the potential effects of natural disasters such as earthquakes, hurricanes, floods and tsunamis, on environmental health services, in particular water supply and wastewater disposal services, solid waste handling, food handling, vector control and house sanitation. It is probably one of the best documents available on environmental health management in emergencies/natural disasters and a fundamental text to help understanding of how environmental health services relate to disaster.

CONTENT

The effects of disaster on environmental health: overview; effects of disaster on conditions and services.

The management of disaster-created environmental health conditions: factors to consider for effective management; pre-disaster health measures, civil engineering structural damage, contamination of food and water supplies; measures taken during disaster and in the aftermath; immediate post-disaster emergency period, water supply, sanitation, shelter, food sanitation, vector control, personal hygiene, public information; consolidation period; rehabilitation measures, water quality, food supplies, sanitation.

Annexes: developing an environmental health emergency operations plan; guidelines for use of tablet, powder and liquid disinfectants in emergency situations; technical guide to environmental health measures taken in response to natural disaster.

Bibliography.

APPLICATION This manual is a valuable reference for planners, administrators, technical and auxiliary personnel responsible for emergency preparedness and disaster relief programmes/activities. It may be of value for training activities and for those officials responsible for the preparation of national guidelines for environmental health management in emergencies. It should be read jointly with the other manuals of the same series produced by PAHO. Available in English and Spanish.

SOURCE Pan American Health Organization, 525 Twenty-third Street NW, Washington, DC 20037, USA or PAHO/WHO authorized sales agents.

COST US\$6.00

TITLE Epidemiologic Surveillance after Natural Disaster

AUTHOR Western, K.A.

BIBLIOGRAPHICAL REFERENCE Western, K.A. *Epidemiologic surveillance after natural disaster*. Washington, DC: Pan American Health Organization, 1982. 106p. (PAHO scientific publication; No.420).

ANNOTATIONS This manual summarizes the scientific basis for, and the experience with, the surveillance and control of communicable disease after disaster. It is a companion to the guide *Emergency Health Management after Natural Disaster* (PAHO scientific publication No. 407, 1981). The manual discusses the relation of disease to certain types of disaster and proposes public health measures. Attention is given to procedures for setting up surveillance systems for communicable and selected noncommunicable diseases. The importance of environmental health management in control of communicable disease is highlighted and a summary of sanitation requirements during disasters is presented.

CONTENTS

Epidemiological surveillance and disaster control after natural disaster: risk factors for communicable diseases after disasters; post-disaster potential of communicable disease epidemics; surveillance systems; operational aspects of disease surveillance after disaster; control of communicable disease after disaster, environmental health management, immunization, quarantine and isolation.

Several annexes, including one with a summary of sanitation requirements during disasters.

Bibliography.

APPLICATION The manual is directed to senior officers involved in disaster relief, particularly epidemiologists, medical officers and sanitary engineers. A useful reference for those responsible for the preparation of national manuals and organization of training events in emergency preparedness and disaster relief. Available in English and Spanish.

SOURCE Pan American Health Organization, 525 Twenty-third Street NW, Washington, DC 20037, USA or PAHO authorized sales agents.

COST US\$6.00

TITLE Ferrocement Water Tanks and their Construction

AUTHOR Watt, S.B.

BIBLIOGRAPHICAL REFERENCE Watt, S.B. *Ferrocement water tanks and their construction*. London: Intermediate Technology Publications, 1978. 118p.

ANNOTATIONS This publication describes in detail methods for constructing water storage tanks. These tanks, constructed with wire-reinforced cement-mortar are widely used in many parts of the world to collect and store water for domestic, stock, irrigation and industrial purposes. The construction method is simple and can easily be learnt by local people; the basic materials used for the construction of the tank (water, sand, cement and reinforced wire) are generally available in most developing countries. These types of tank are very cheap and can be used in rehabilitation works and in temporary settlements and refugee camps; self-help tank building programmes can be organized with community participation. The handbook describes how tanks are planned and designed, gives standard and recommended methods of constructing both small and large tanks, describes construction methods used in different parts of the world and provides references on sources for further information on the subject.

CONTENT

Planning and designing the tank; water storage and costs of construction; effects of storage on water quality; designing the tank; construction materials and equipment.

Standard methods of construction: summary of methods; small tanks for domestic use; large tanks.

Alternative designs: experience in Thailand, New Zealand, UK, Mali, USA.

Additional information on calculated stresses and on catching and using rainwater from the roof.

Sources of additional information, references.

APPLICATION A very useful reference for professionals and technicians who have responsibility for small water supply systems in developing countries. The information provided may be of interest to those dealing with rehabilitation works after emergencies and in refugee camps.

SOURCE Intermediate Technology Publications Ltd., 9 King Street, London WC2E 8HW, United Kingdom.

COST £4.95

TITLE Flood Emergency and Residential Repair Handbook

AUTHORS Federal Emergency Management Agency (FEMA)

BIBLIOGRAPHICAL REFERENCE United States, Federal Emergency Management Agency. *Flood emergency and residential repair handbook*. Washington, DC: Federal Emergency Management Agency.

ANNOTATIONS This manual describes procedures for dealing with flood hazards and damage to homes and their contents. It describes emergency actions to be taken where a flood is imminent, steps for immediate clean-up and repair when re-entering a flood damaged home and preventive measures home owners can take to reduce losses in a future flood. In addition it contains a discussion of how flood damage is caused. The manual deals with three distinctive flood periods; flood emergency, post-flood clean-up and preventive actions. Easy to understand instructions are given for preventive measures and repair. Among the several subjects covered, the question of drinking water and sewage disposal is also addressed. Instructions are given for water supply disinfection and preventive measures to avoid backflow of sewage.

CONTENT

Purpose and scope of the manual.

Introduction, floods, general features of floods.

Emergency actions: utilities; electrical system; sea water; fuel tanks; sewer and drainage lines.

Clean up and repair: before and after entering a flood area; drinking water; food; walls and ceilings; appliances; clothing and household items.

Planning against future floods: building homes in flood areas; diversion of water.

Community action.

APPLICATION The purpose of the manual is to provide home owners and local government officials with procedures for controlling and dealing with flood hazards and damage to homes. It may be of special interest to technicians and community workers who will eventually deal with floods. Although the material is addressed to the US audience the information available may be useful in other countries.

SOURCE Federal Emergency Management Agency, 500 C Street SW, Washington, DC 20472, USA.

COST Unknown

TITLE Guide to Food and Health Relief Operations for Disasters (A)

AUTHOR Protein Calorie Advisory Group of the United Nations System

BIBLIOGRAPHIC REFERENCE Protein Calorie Advisory Group of the United Nations System. *A Guide to food and health relief operations for disasters*. New York: United Nations, 1977. 202p.

ANNOTATIONS The object of this guide is to provide practical information and clear instructions pertaining to aspects of food and health relief for victims of disasters in developing countries. Although various kinds of disaster, as well as short and long-term relief operations, are considered, greater emphasis is laid on long-term relief efforts. Chapter 8 discusses water supply and waste disposal and, as indicated in the preface, is mainly an extract from the WHO Guide to Sanitation in Natural Disasters (see next entry of this bibliography). Information in other parts of the guide, on planning for disaster preparedness and prevention, general relief procedures, and post-disaster rehabilitation and development, may be of particular relevance to environmental health personnel.

CONTENT

Introduction with general information on disasters and on the objectives of the guide.

Planning for disaster preparedness and prevention.

Notes on general relief procedures.

Assessment and surveillance of nutrition and health problems: rapid assessment; detailed assessment; assessment methodology; data processing.

Organization of food and health relief; feeding programmes; medical care.

Water supply and environmental sanitation: personnel; sanitary measures during evacuation; water supply; excreta disposal; solid waste disposal; wastewater disposal; vermin control; burial of the dead; disinfection and disinfestation.

Post-disaster rehabilitation and development.

Several appendices including one on water treatment.

SOURCE United Nations, New York, NY 10017, USA.

COST Unknown

TITLE Guide to Sanitation in Natural Disasters

AUTHOR Assar, M.

BIBLIOGRAPHIC REFERENCE Assar, M. *Guide to sanitation in natural disasters*. Geneva: World Health Organization, 1971. 135p.

ANNOTATIONS This guide provides a comprehensive overview of the essential measures for environmental health interventions under disaster conditions. It emphasizes the need for planning and advance preparation to deal with environmental health problems which may arise in a disaster situation. Detailed information is provided on planning and administrative aspects as well on technological alternatives for environmental health activities in emergencies and natural disasters. Emphasis is given to water supply and sanitation and related subjects. It includes several annexes covering issues of general interest, as well as specific subjects such as disinfection of water mains and data collection. Although the guide addresses, for the most part, environmental health in natural disasters much of the material presented can also be applied to man-made disasters and other emergency situations. Probably one of the most complete guides on the subject; published in 1971 it remains one of the best references available, mainly for the integrated approach proposed.

CONTENT

General considerations: definition of natural emergencies; types of disasters and their consequences.

Emergency action: pre-disaster, disaster and post-disaster measures.

Planning and administration of environmental health activities: coordination; planning; organization; personnel, equipment and supplies; transport, rules and regulations.

Environmental health measures: shelter; water supply; waste disposal; food sanitation; vermin control; burial of the dead; miscellaneous installations; rehabilitation and reconstruction.

Annexes on: emergency sanitation at home; relations between agencies; stockpile of equipment and supplies; sanitarians equipment; questionnaires for water works superintendents; disinfection of water mains; data for vector control.

APPLICATION This guide is intended primarily to assist health authorities and relief agencies. It is of especial interest to engineers, sanitarians and other personnel responsible for emergency preparedness and disaster relief interventions. It may be highly useful as a basis for the preparation of national guidelines for environmental health management in emergencies. It was not designed as a training course or as a textbook but it may be of value for training activities. Available in English, French, Spanish and Russian from WHO. Has also been translated into Farsi.

SOURCE World Health Organization, Distribution and Sales, 1211 Geneva 27, Switzerland or WHO authorized sales agents.

COST SwF16.00

TITLE Guide to Simple Sanitary Measures for the Control of Enteric Diseases

AUTHOR Rajagopalan, S., Shiffmann, M.A.

BIBLIOGRAPHIC REFERNECE Rajagopalan, S., Shiffman, M.A. *Guide to simple sanitary measures for the control of enteric disease*. Geneva: World Health Organization, 1974. 102p.

ANNOTATIONS This guide provides a compendium of knowledge on simple measures that can be implemented with limited resources to control enteric diseases. Emphasis is given to environmental health and related interventions, water supply, collection and disposal of wastes and food sanitation. The guide includes a chapter on "Action in an emergency". It provides guidance and technical information on water supply and sanitation in urban and rural areas; details on procedures for water disinfection are given in the chapter on water supply and in the annexes. The issue of training personnel is also considered and a course curricula for a training programme, with emphasis on environmental health, is provided.

CONTENT

Mode of transmission of enteric diseases; short-term and emergency control measures.

Organizational and operational needs; health education.

Water supply: urban water supply systems; rural water supply systems; sanitary surveys; emergency provision; disinfection of water.

Wastes collection and disposal: human excreta disposal; wastewater disposal; solid wastes management.

Institutional and camp sanitation.

Food sanitation; food protection methods; food-borne diseases in emergencies.

Training of personnel.

Action in an emergency: pre-invasive phase; invasive phase; post-invasive phase.

Several annexes on public participation; sanitary surveys; inventory of rural communities; water disinfection; food hygiene and course curricula for a training programme.

Bibliography with 25 references.

APPLICATION The guide is intended for the use of professional personnel responsible for public health and sanitary services in developing countries, such as health administrators, medical officers, municipal, public health and sanitary engineers, public health inspectors/sanitaricians, sanitary chemists/bacteriologists and other water and sewerage works personnel. It is highly useful for professional and technical personnel responsible for emergency and disaster relief, refugee camps, etc. It may be of interest also for trainers and as a reference material for courses on emergency preparedness and disaster relief. Available in Arabic, English, French, Russian and Spanish.

SOURCE World Health Organization, Distribution and Sales, 1211 Geneva 27, Switzerland or WHO authorized sales agents.

COST SwF32.00

TITLE Guidelines for Disaster Prevention, Volume 1: Pre-disaster Physical Planning of Human Settlements

AUTHOR United Nations, Office of the Disaster Relief Co-ordinator (UNDRO)

BIBLIOGRAPHICAL REFERENCE United Nations, Office of the Disaster Relief Co-ordinator. *Guidelines for disaster prevention: pre-disaster physical planning of human settlements*. Geneva: United Nations, 1976. 93p. (Guidelines for disaster prevention series; volume 1).

ANNOTATIONS This publication, as well as the other two in the same series, represents an effort to produce a clear statement of general principles and a basic set of guidelines in the field of disaster prevention in developing countries. The cross-referencing between the three volumes in the series will help the reader to understand the full scope of the proposed guidelines covering the three stages in the evolution of a settlement: the planning stage, the building stage and the long-range stage during which the settlements are being used, maintained, expanded or renewed. Emphasis is given in this publication to the importance of pre-disaster physical planning as a way to reduce or eliminate the effects of disaster on human settlements. Regarding the infrastructure networks of human settlements, attention is drawn to the desirable forms of water supply and waste disposal. Information is provided on land-use patterns and zoning regulations.

CONTENT

Background: disasters; aspects of settlements; physical planning against disaster.

General aims and measures: purposes and objectives; measures at physical planning level.

Physical planning against disasters: international and national action.

Local action level for physical planning against disasters: areas of potential natural and man-made risk; major kinds of physical planning and development task; land-use patterns; role of open spaces; infrastructure networks (road and rail network, water supply, sewage and drainage, power supply).

Detailed design level of physical planning against disasters: safety standards and norms; buildings; road network; open spaces.

Evacuation and emergency preparedness: evacuation system and facilities.

The challenge and responsibility of reconstruction.

A selected bibliography with 59 references.

APPLICATION This series is addressed to a wide spectrum of potential users, such as policy-makers, administrators, technicians and community leaders in urban and rural areas at the national, regional and local level. It is especially intended for government officials who have responsibility for developing projects in high-risk areas. Available in English, French and Spanish.

SOURCE Distribution and Sales Section, United Nations, Palais des Nations, 1211 Geneva 10, Switzerland or United Nations, New York, NY 10017, USA

COST US\$10.00

TITLE Guidelines for Disaster Prevention, Volume 2: Building Measures for Minimizing the Impact of Disasters

AUTHOR United Nations, Office of the Disaster Relief Co-ordinator (UNDRO)

BIBLIOGRAPHICAL REFERENCE United Nations, Office of the Disaster Relief Co-ordinator, *Guidelines for disaster prevention: building measures for minimizing the impact of disasters*. Geneva: United Nations, 1976. 59p. (Guidelines for disaster prevention series; volume 2).

ANNOTATIONS This volume, as well as the other two in the same series, is intended to produce a clear statement of general principles and a basic set of guidelines for disaster prevention in developing countries. The cross-referencing between the three volumes in the series will help the reader to understand the full scope of the proposed guidelines covering the three stages in the evaluation of a human settlement: the planning stage, the building stage and the long-range stage during which the settlements are being used, maintained, expanded or renewed. Emphasis is given in this volume to the special attention that must be paid to the design and construction of building and other civil engineering structures in disaster-prone areas, and to the importance of corrective action through education, legislation and effective supervision. Guidelines are proposed for building measures for different types of disaster: tropical storm, flood, fire, earthquake and landslide. References are made to some protective measures regarding civil engineering structures and public services including water supply and sewerage systems.

CONTENT

General: education; building legislation; building supervision.

Tropical storms: effects on buildings; protection measures; maintenance; precautionary measures.

Floods: defence systems; protection of human settlements; protection of houses and buildings.

Floods resulting from the destruction of large dams: design of large dams; observation of dams; protection of the population.

Floods resulting from tsunamis: protection of buildings.

Fire: minimizing fire risk; rescue; preventing the spread of fire.

Earthquakes: damage rating; aseismic design and construction; building practice; low-cost housing; civil engineering structures; education and training.

Landslides: effect on building.

A selected bibliography with 14 references.

APPLICATION This series is addressed to a wide spectrum of potential users, such as policy-makers, administrators, technicians and community leaders in urban and rural areas at the national, regional and local level. It is especially intended for government officials who have responsibility for the development and supervision of projects in high-risk areas. Available in English, French and Spanish.

SOURCE Distribution and Sales Section, United Nations, Palais des Nations, 1211 Geneva 10, Switzerland or United Nations, New York, NY 10017, USA.

COST US\$10.00

TITLE Guidelines for Disaster Prevention, Volume 3: Management of Settlements

AUTHOR United Nations, Office of the Disaster Relief Co-ordinator (UNDRO)

BIBLIOGRAPHIC REFERENCE United Nations, Office of the Disaster Relief Co-ordinator. *Guidelines for disaster prevention: management of settlements*. Geneva: United Nations, 1976. 84p. (Guidelines for disaster prevention series; volume 3).

ANNOTATIONS This volume, as well as the other two in the same series, is intended to provide general principles and a basic set of guidelines for disaster prevention in developing countries. The cross-referencing between the three volumes in the series will help the reader to understand the full scope of the proposed guidelines which cover the three stages in the evolution of a human settlement; the planning stage, the building stage and the long-range stage during which the settlement is used, maintained, expanded and renewed. This volume addresses the third stage, the management of existing settlements suggesting administrative principles and criteria for disaster prevention. The central part is organized in terms of individual types of disaster, and the differences in the major measures to be undertaken have been emphasized. The matter of research and education is also highlighted, considering that disaster prevention programmes should necessarily be based in public education and on the findings of research projects at regional, national and international level. Several areas of interest for research are suggested.

CONTENT

Types of major disaster: disaster and prevention.

The administration of disaster prevention: administrative principles; levels of administration.

Floods: flood plain zoning, land use regulations and legal measures; cost/benefit analysis.

Earthquakes and land movements: building codes and their implementation; relocation; vulnerability.

High winds and heavy rainfall: effects and locations; warnings.

Miscellaneous disasters: fires; forest fires; mining operations; design and maintenance of public works and of industrial installations.

Preparedness and post-disaster activities: preparedness; post-disaster.

Relocation of existing settlements and public land acquisition: population distribution policies; urban scale and village relocation; controlled settlement expansion.

Finance and taxation.

Research and education: research; locational and scientific research; training and education.

Self-built houses.

Building codes.

Selected bibliography.

APPLICATION This series is addressed to a wide spectrum of potential users such as policy-makers, administrators, technicians and community leaders at the national, regional and local level. It is especially intended for government officials who have responsibility for the development and supervision of projects in high-risk areas. Available in English, French and Spanish.

SOURCE United Nations, Distribution and Sales Section, Palais des Nations,
1211 Geneva 10, Switzerland or United Nations, New York, NY 10017, USA.

COST US\$10.00

TITLE Guidelines for Drinking-Water Quality

Vol 1: Recommendations

Vol 2: Health Criteria and Other Supporting Information

Vol 3: Drinking-Water Quality Control in Small-Community Supplies

AUTHOR World Health Organization

BIBLIOGRAPHIC REFERENCES World Health Organization, *Guidelines for drinking water quality: recommendations*. Geneva: World Health Organization, 1984. 130p. (Guidelines for drinking water quality; volume 1).

World Health Organization. *Guidelines for drinking water quality: health criteria and other supporting information*. Geneva: World Health Organization, 1985. 335p. (Guidelines for drinking water quality; volume 2).

World Health Organization. *Guidelines for drinking water quality: drinking-water quality control in small-community supplies*. Geneva: World Health Organization, 1985. 121p. (Guidelines for drinking water quality; volume 3).

ANNOTATIONS The guidelines for drinking water quality have been developed by WHO to describe the quality of water that is suitable for drinking purposes under all circumstances. It is intended that the proposed guidelines should serve as reference for the development of national standards, in urban and rural areas, not only for community piped-water supplies but also for water used for drinking purposes obtained from community public taps and wells and drinking water distributed by tankers or in bottles.

Volume 1 provides guideline values for microbiological, biological, chemical, organoleptic and radiological quality of drinking-water together with the information essential to understanding the basis for the recommended values. Suggestions are included regarding measures to ensure compliance with water quality requirements.

Volume 2 sets out health criteria for drinking-water quality and provides information regarding water quality surveillance and water quality control. It contains a review of the toxicological, epidemiological and clinical evidence vis-à-vis the recommended guideline values.

Volume 3 deals specifically with drinking-water quality for small communities. It contains information on sanitary surveys, simple methods for sampling and analysis and other means of investigating and controlling drinking-water quality in small communities, especially those located in rural areas.

CONTENT

Volume 1: Recommendations

Introduction on drinking-water quality, application of the guidelines; microbiological aspects, bacteriological quality of drinking-water, virological quality, monitoring, accuracy of analysis, emergency water supplies, cost-benefit aspects; biological aspects, protozoa, helminths, free-living organisms; chemical and physical aspects, health-related inorganic constituents, organic contaminants, aesthetic and organoleptic aspects, monitoring, remedial measures; radioactive materials in drinking-water, radiological surveillance.

As an annex, tables for determining the most probable number (MPN) of particular organisms present in 100 ml of water.

Volume 2: Health Criteria and Other Supporting Information

Microbiological aspects, bacteriological quality of drinking-water, virological quality of drinking-water; biological aspects, protozoa, helminths, free-living organisms; health-related inorganic constituents; health-related organic constituents; aesthetic constituents and characteristics; radioactive materials.

Volume 3: Drinking-Water Quality Control in Small-Community Supplies

Water quality, application of guideline values, microbiological, biological, chemical and physical aspects.

Planning for water quality surveillance and control, assessment of existing situation, sanitary inspections and water sampling, handling and use of information.

Sanitary inspections, organization and methodology.

Collection of water samples, requirements, sampling point selection, equipment, dispatch of samples.

Bacteriological analysis, indicator organisms, methods of analysis, multiple-tube method, membrane-filter method.

Determination of residual chlorine, methods.

Remedial and preventive measures, control of biological hazards.

Community education and involvement, training rural community volunteers, community health education.

Annexes on sanitary inspections, collecting water samples for microbiological examination, field testing for bacteriological analysis, multiple-tube method, membrane-filter method, determinations of residual free-chlorine.

Bibliography.

APPLICATION The WHO Guidelines for Drinking-Water Quality address a wide audience, practically all those concerned with drinking-water quality in urban and rural areas. As an information source and reference material, the guidelines are useful not only to laboratory staff, field workers in surveillance programmes and those directly engaged in water quality surveillance but also to administrators and other officials responsible for the planning and implementation of national water supply programmes or other programmes/interventions related to water supply. The guidelines are highly useful to officials responsible for water supply activities in emergencies, evacuation camps and in refugee areas. Available in Arabic, Chinese, English, French, Russian and Spanish.

SOURCE World Health Organization, Distribution and Sales, 1211 Geneva 27, Switzerland or WHO authorized sales agents.

COST Vol. 1: SwF20.00
Vol. 2: SwF38.00
Vol. 3: SwF17.00

TITLE Guidelines for Rural Centre Planning

AUTHOR Economic and Social Commission for Asia and the Pacific (ESCAP)

BIBLIOGRAPHIC REFERENCE United Nations, Economic and Social Commission for Asia and the Pacific. *Guidelines for rural centre planning*. New York: United Nations, 1979. 376p.

ANNOTATIONS These guidelines are intended to help the systematic planning of rural centres and to provide guidance for policy-making and programme planning for rural resources development. It proposes a methodology for the analysis of rural centre profiles and the planning is analysed not only in its physical aspects but in a much broader, theoretical and practical, framework. Emphasis is given to the importance of environmental health-related activities in the overall context of physical planning, mainly regarding aspects of water supply, sanitation and refuse disposal. Information is also provided on aspects related to health and nutrition vis-à-vis sectoral planning. The information is relevant to all aspects of rural physical planning, including rehabilitation and reconstruction after disaster and planning of refugee settlements.

CONTENTS

Rural centre planning, regional approach.

Theoretical considerations: general theories of development and planning; spatial organization and central places.

Planning procedures and techniques: project development; regionalization and decentralization; the system of rural centres.

Sectoral planning: water supply and sanitation; garbage disposal; implementation; operation and maintenance.

Rural electrification and development options: biogas-fuelled stations; solar energy; wind driven generators; costs and benefits.

Transport and communication.

Health and nutrition: the health care system; manpower training; food production and management.

Education, planning criteria.

Economic services, agricultural extension and veterinary services.

Rural industrialization.

Community development and physical planning, labour intensive programmes.

Physical planning of rural centres: regional considerations and policies; environmental conditions; land use and capability; settlement sizes; scattered or gathered settlements.

Planning standards and norms: water supply, sewerage and garbage disposal; health; education; housing; transportation and communications.

Layout of settlements, development schemes.

APPLICATION This publication is intended for use by national officials and planners involved in regional development, and physical planning and design of rural settlements. The information presented may be of interest to professionals at the planning level, responsible for rehabilitation and reconstruction after natural disaster and to those planning refugee settlements. The publication is primarily intended for use in the countries of ESCAP (Asia and the Pacific) but the approaches and methodology proposed may also be of use in other regions of the world.

SOURCE United Nations, New York, NY 10017, USA.

COST Unknown

TITLE Hand Pumps

AUTHOR McJunkin, F.E.

BIBLIOGRAPHIC REFERENCE McJunkin, F.E. *Hand pumps for use in drinking water supplies in developing countries*. Rijswijk: International Reference Centre for Community Water Supply (IRC), 1980. 167p. (IRC Technical paper series; No.10).

ANNOTATIONS A state of the art report. This handbook provides information on the rationale for the use of handpumps in developing countries, types of handpumps, (including reciprocating, diaphragm, rotary, chain and various traditional water lifting devices). There is also information on the administration of handpump programmes with emphasis on installation and maintenance practices and on research and development of handpumps. A chapter is included on local manufacture of handpumps, describing different possibilities for local production of water lifting devices.

CONTENT

Introduction, sources of information.

Types of handpumps (reciprocating, diaphragm, rotary, bucket, chain, etc.); traditional water lifting devices.

Handpump state of technology; pump components.

Administration of a handpump programme.

Research and development of handpumps.

Local manufacture of handpumps.

An extensive bibliography.

APPLICATION The document is intended to serve public health officials, engineers and field staff who have responsibility for the planning and implementation of water supply programmes using handpumps. The information presented may be useful for professionals, technicians and community health workers dealing with water supply in emergencies and refugee camps.

SOURCE International Reference Centre for Community Water Supply and Sanitation, P.O. Box 93190, 2509 AD The Hague, The Netherlands.

COST US\$15.00

TITLE Health Principles of Housing

AUTHOR World Health Organization

BIBLIOGRAPHIC REFERENCES World Health Organization. *Health principles of housing*, Geneva: World Health Organization, 1989. 44p.

ANNOTATIONS Elaborates eleven basic principles governing the relationship between features of the housing environment and the health of inhabitants. Primarily concerned with conditions in developing countries, the book serves as both an alert to the range of housing-related factors that influence health and a plea to consider these factors in development schemes. Throughout, statements and recommendations take their authority from evidence documenting the direct links between poor housing conditions and increased risks of death, disease, and injury. The opening chapter explains the main reasons why most existing human dwellings fail to protect inhabitants from well-documented hazards of the physical and social environments. Against this background, the book presents eleven health principles of housing subdivided into two main parts. The first sets forth the relationship between housing conditions and health in a series of six major principles. These serve to define basic housing requirements compatible with health needs while also giving development planners a checklist of essential structural and environment criteria. Whether concerning safeguards against disease transmission or housing for groups at special risk, each principle acknowledges that the impact of housing depends as much on human behaviour as on the physical features of site, structure, design, and social amenities. Details range from a list of the most common sources of indoor air pollution to five features of a dwelling environment that can reduce unhealthy psychosocial stresses to a minimum. Principles in the second half of the book define several public health approaches needed to ensure that maximum health benefit is obtained from housing improvements. Approaches outlined include advocacy for the health value of adequate housing, changes in economic and social policies, the improvement of norms for housing design and construction, and the use of community organizations in alliance with outside assistance. Readers are also given examples of common errors in the design of housing projects known to have an adverse effect on the health and safety of dwellings and neighbourhoods.

CONTENT

Introduction: the principles; background; conditions and constraints.

Principles related to health needs: protection against communicable diseases; protection against injuries, poisonings and chronic diseases; reducing psychological and social stresses to a minimum; improving the housing environment; making informed use of housing; protecting populations at special risk.

Principles related to health action: health advocacy; economic and social policies; intersectoral action for development, planning and management; education on healthy housing; community cooperation and self-help.

APPLICATION Of major interest to planners and officials at a decision-making level and also of use to those responsible for policy-making for housing and urban and rural development. May also be of interest to those dealing with rehabilitation and reconstruction after disaster and to officials responsible for assistance to refugees and displaced persons. Available in English, French and Spanish.

SOURCE World Health Organization, Distribution and Sales, 1211 Geneva 27, Switzerland or WHO authorized sales agents.

COST SwF11.00; US\$8.80.

TITLE Health Services Organization in the Event of Disaster

AUTHOR Pan American Health Organization

BIBLIOGRAPHIC REFERENCE Pan American Health Organization. *Health services organization in the event of disaster*. Washington, DC: Pan American Health Organization, 1983. 112p. (PAHO scientific publication; no.443).

ANNOTATIONS This manual, which complements a series of scientific publications on disaster preparedness published by the Pan American Health Organization, provides general guidelines for the organization of health services and technical standards for mass care of disaster victims. It covers the main issues related to medical care in disaster situations in urban and rural areas and gives special emphasis to aspects of organization of hospital services in emergencies. The manual provides technical information necessary for the preparation of plans to enable health services to provide an effective response in disaster situations. In a chapter on the organization of medical care centres for disaster situations, specific references are made to basic services such as water supply, waste disposal, electric energy and gas.

CONTENT

Organization of the health system: classification of medical care centres for disaster situations.
 Organization of medical care units in the disaster area: mobile hospitals; evacuation procedures.
 Organization of rural health services in disaster situations: resources and infrastructure; the community.
 Organization of medical centres for disaster situations: general hospital planning; organization of the plan, physical structure, basic services (water supply, drains and sewer outlets, electric energy, gas); technical and administrative organization.
 Implementing the plan of the hospital; medical and support services.
 Updating and evaluating the hospital disaster management plan.
 Several annexes and a bibliography.

APPLICATION The manual is primarily aimed at the physician, the paramedic and the health administrator and is based on the traditional organization of health services in Latin America and the Caribbean but its technical concepts are also applicable to countries of other regions. Since there is a close relation between health services organization and environmental health management, this publication is a valuable reference for professionals responsible for environmental health in emergencies. Available in English, French and Spanish.

SOURCE Pan American Health Organization, 525 Twenty-third Street NW, Washington, DC 20037, USA or PAHO authorized sales agents.

COST US\$6.00

TITLE Housing - The Implications for Health

AUTHOR Report of a WHO Consultation (Geneva, 9-15 June 1987)

BIBLIOGRAPHIC REFERENCE Report of a WHO Consultation. *Housing - The implications for health*, Geneva: World Health Organization, 1987. 70p. (Unpublished document WHO/EHE/RUD/87.2).

ANNOTATIONS The consultation reviewed the global situation with respect to health and housing and proposed principles which can help to identify factors in housing that influence the health of inhabitants. The report highlights the serious health risks arising from inadequate and inappropriate housing. Emphasis is given to the importance of water supply, the availability of facilities for disposal of excreta, sewage and solid wastes, the quality of air and structure of the dwelling. The Health Principles of Housing proposed by the consultation provide guidance on basic housing requirements compatible with health needs, setting forth the relationship between housing conditions and health and on public health approaches to attaining health objectives in relation to housing. A document that provides a very good overview of the health and housing relationship and draws from the experience of a group of experts in the subject. The Health Principles of Housing are available as a separate publication. (See p.50 of this bibliography).

CONTENT

Review of current global situation with respect to health and housing: global review; relevant policies and programmes of international organizations.

Health and housing principles: principles of health and needs; principles of health action.

Recommended action lines.

Health principles of housing.

APPLICATION A document of major interest to planners and officials at a decision-making level and also of use to those responsible for policy-making for housing and urban and rural development. May also be of interest to those dealing with rehabilitation and reconstruction after disaster and to officials responsible for assistance to refugees and displaced persons.

SOURCE: Environmental Health Unit, World Health Organization, 1211 Geneva 27, Switzerland.

COST Unknown

TITLE Improving Environmental Health Conditions in Low-Income Settlements - A Community-Based Approach to Identifying Needs and Priorities

AUTHOR World Health Organization. Acknowledgement is made to Dr W. Hassouna, Dr Peter Ward and others who helped to prepare this publication

BIBLIOGRAPHIC REFERENCE World Health Organization. *Improving environmental health conditions in low-income settlements: a community-based approach to identifying needs and priorities*. Geneva: World Health Organization, 1987. 68p. (WHO offset publication; no.100).

ANNOTATIONS This publication offers guidance on how to identify and gather information about environmental factors affecting health in low-income settlements. Various survey techniques, which are inexpensive and do not require sophisticated knowledge or expertise, are described in detail, as are the principal means of analysing and collating the information obtained. Information is provided on the relationship between poverty, housing, the environment and health, emphasis being placed on requirements for healthy housing such as safe water supply, sanitary excreta disposal, adequate surface water drainage, solid wastes management, adequate structural features of the shelter, food hygiene, protection against pollution and access to community services. Community participation is highlighted. A methodology is proposed for information gathering and data analysis and for specific actions to improve environmental health at local level. Information is also provided on how to organize survey teams and on resources required to make a survey of an environmental health issue.

CONTENT

Urbanization and environmental health: urbanization and housing problems; the relationship between poverty, housing, the environment and health housing policies and the need for methodology to help improve environmental health. A programme to improve environmental health: the approach adopted; the target users; the importance of community participation; the upgrading process. Recommended methods for a community-based survey: the survey phase; discussion of draft report. Action to improve environmental health at the local level. Annexes on designing a questionnaire, sampling, training interviewers, coding and cross-tabulation by hand. Several references.

APPLICATION This publication addresses a wide audience and may be of special interest to professional and technical personnel responsible for rehabilitation and reconstruction after disasters, planning and improvement of refugee settlements, etc. It should be seen more as a source of information on a methodology to identify needs and priorities regarding housing and environmental health. It has the advantage of being a community-based approach. Available in Arabic, English, French and Spanish.

SOURCE World Health Organization, Distribution and Sales, 1211 Geneva 27, Switzerland or WHO authorized sales agents.

COST SwF12.00; US\$9.60

TITLE Major Hazard Control: A Practical Manual

AUTHOR International Labour Office

BIBLIOGRAPHIC REFERENCE International Labour Office. *Major hazard control: a practical manual*. Geneva: International Labour Office, 1988. 296p.

ANNOTATIONS This manual is designed to provide a systematic approach to avoiding major disasters, such as fires, explosions and release of toxic gases. It deals mainly with the safety aspects of siting, planning, design, construction and operation of industrial plants. It helps to identify installations which pose potentially major hazards and describes all the components of a major hazard control system. The system describes in detail the steps involved in developing a programme to control major hazards, including aspects of safety and health practice. It is a comprehensive text book which is based on the experience of ILO and of experts on the subject.

CONTENT

Introduction: major industrial hazards; components of a major hazard control system.

Identification of major hazard installations: typical major hazard installations.

The role of management: assessment of hazards; causes of major industrial accidents; safe operation of major hazard installations; mitigation of consequences; reporting to authorities.

The role of the authorities: inventory of major hazard installations; safety reports; mitigation of consequences; inspection programme.

The role of workers and workers' organizations.

Emergency planning: scope and objectives; on-site emergency planning; off-site emergency planning.

Implementation of major hazard control systems: identification of major hazards; setting priorities.

Prerequisites for a major control system.

Several appendices on: dangerous substances and threshold quantities; ranking method for the classification of units/plant elements; guide to hazards and operability studies, example of a safety report and land-use near major hazards work.

Several figures and tables.

APPLICATION This manual addresses all those concerned with on-site and off-site safety in major hazard installations. It is of special interest for national authorities as well as for health workers, fire stations and trade unions. It is a valuable reference for emergency preparedness normative and executive bodies and agencies. Although it addresses itself primarily to emergency preparedness in major industrial plants it may be of use in other situations because of the large amount of information provided, part of which relates to environmental health, and the systematic approach proposed.

SOURCE International Labour Organisation (ILO), 1211 Geneva 22, Switzerland.

COST SwF45.00

TITLE Management of Solid Wastes in Developing Countries

AUTHOR Flintoff, F.

BIBLIOGRAPHIC REFERENCE Flintoff, F. *Management of solid wastes in developing countries*. 2nd ed. New Delhi: World Health Organization, 1984. 237p.

ANNOTATIONS This book provides an ample review of the experience available in the collection and disposal of solid wastes in developing countries. It covers a wide spectrum of aspects relating to solid wastes management including health, economic and environmental implications. Information is provided on sampling methods and on the alternative methods of storage, collection, treatment and disposal of refuse. Emphasis is placed on low-cost solutions to refuse disposal, sanitary landfill and composting. It also deals with aspects relating to human resources development and training for solid waste management.

CONTENT

Sampling methods: refuse storage and collection; elements of refuse collection; frequency of collection; refuse storage methods; refuse collection vehicles; access and point of collection; basic collection systems; primary and secondary collection; economics of refuse collection; street cleansing; treatment and disposal; sanitary landfill (planning, design and operation); urban wastes as a source of compost; principles and economics of composting; elements of compost plants; outline designs of typical systems; financial evaluation of composting; planning a compost plant.

Annexes on planning and organization of solid waste management and on training in solid waste management.

APPLICATION The book is designed to guide municipal officers who are responsible for the collection and disposal of solid wastes. The information available may be useful to professionals and technicians dealing with solid waste management in emergencies, natural disasters and in refugee camps. Available in Arabic and English.

SOURCE WHO Regional Office for South-East Asia, World Health House, Indraprastha Estate, Mahatma Gandhi Road, New Delhi 110002, India or World Health Organization, Distribution and Sales, 1211 Geneva 27, Switzerland.

COST SwF20.00

TITLE Natural Disasters and Vulnerability Analysis

AUTHOR United Nations, Office of the Disaster Relief Co-ordinator (UNDRO)

BIBLIOGRAPHIC REFERENCE Report of an Expert Group Meeting. *National disasters and vulnerability analysis*. Geneva: United Nations Office of the Disaster Relief Co-ordinator, 1980. 40p.

ANNOTATIONS This publication is the report of an Expert Group Meeting convened by UNDRO on 9-12 July 1979 to provide further guidance on defining concepts and developing methodologies for applying vulnerability analysis to practical physical planning and building techniques in disaster-prone areas. The report presents an overview on aspects of vulnerability analysis, recommending the types of information required and a description of meteorological and hydrological phenomena which should be taken into account for vulnerability analysis studies. Special attention is given to approaches to such studies in areas prone to earthquakes and volcanic action. A methodology is proposed for risk analysis.

CONTENT

Clarification of concepts and terms.

Types of information required: natural hazard; vulnerability; elements at risk.

Methodological and hydrological phenomena: cyclones; tornadoes; floods; storm surges; avalanches, landslides.

Earthquakes: seismic aspects; hazards during earthquakes; landslides.

Volcanoes: hazard zoning; risk assessment and mitigation; methods of hazard assessment.

Risk analysis - a methodology: factors affecting impact; method of approximation; simulated impacts.

Risk analysis and physical planning.

Recommendations.

Annexes - several questionnaires for use in assessment of damage.

APPLICATION A publication of interest to planners, scientists, engineers and developers. It may be useful to staff of environmental health agencies interested in vulnerability analysis studies.

SOURCE United Nations, Distribution and Sales Section, Palais des Nations, 1211 Geneva 10, Switzerland or United Nations, New York, NY 10017, USA.

COST Unknown

TITLE Oxfam's Sanitation Unit - The Design and Testing of a Sanitation and Sewage Treatment Unit for Disasters and Long-term Use

AUTHORS Howard, J., Lloyd, B., Webber, D.

BIBLIOGRAPHIC REFERENCE Howard J., Lloyd B., Webber D. *Oxfam's sanitation unit: the design and testing of a sanitation and sewage treatment unit for disasters and long-term use*. 2nd ed. Oxford: Oxfam, 1975. 8p.

ANNOTATIONS This pamphlet describes a compact sanitation unit designed and developed by OXFAM for use in disaster situations and reports on the results of the tests carried out to evaluate the efficiency of the unit in reducing pathological species. According to the authors the unit was originally conceived as a short-term solution for disaster situations but the results of the research indicate that the unit can also be considered for long-term use, particularly in poorer parts of the world. Details are provided on the conditions that a sanitation unit must satisfy in disaster situations.

CONTENT

Introduction: criteria for sanitation units.

Installation of the unit: latrine area, sewage containment or treatment; percolating filters.

Methods for evaluation: sampling procedures; microbiological methods; sample analysis; physical and chemical test methods.

Results, discussion.

Figure with the general layout of the unit.

Several tables with data on removal of indicators and pathogens.

APPLICATION This publication may be of interest to those having to decide on types of sanitation units to be used in disaster areas and in refugee camps.

SOURCE OXFAM, 274 Banbury Rd., Oxford OX2 7DZ, United Kingdom.

COST Unknown

TITLE Post-Disaster Assessment: A - Management, B - Field Survey

AUTHOR Campbell, J.R., Chung, J.

BIBLIOGRAPHIC REFERENCE Campbell, J.R., Chung, J. *Post-disaster assessment: A - Management, B - Field survey*. Honolulu: East-West Centre, 1986. (Pacific disaster preparedness and mitigation manual series).

ANNOTATIONS These two manuals are the product of a workshop on Post-Disaster Survey and Assessment held at the East-West Centre in Honolulu, Hawaii, USA in 1985. The breakdown into two separate parts reflects two very important issues, that of managing disaster information at the central or emergency headquarters level and that of collecting information in a post-disaster field survey. Part A deals specifically with the problems faced at the management level, in the identification and management of information requirements in a disaster situation. Part B provides a basic set of guidelines relating to post-disaster field survey procedures. Emphasis is placed on the decision-making process in disaster situations and on the need for certain types of information to help in the decision-making process. There is a synthesis of possible sources of information, and information requirements. Attention is drawn to the importance of information in several subject areas, including medical assistance and public health, water supply, shelter and housing. It includes guidelines on factors involved in the decision to provide water (Part A) and orientation on how to conduct a field survey on water supply after disaster.

CONTENT

Part A - Management

Decision-making, disaster information and coordination.

Identifying information needs: research and rescue, evacuation; medical assistance and public health; water supply; food and agriculture; shelter and housing; governmental services; communications and transportation.

Compilation of information.

Appendices on situation report, sample format and list of other useful documents.

Part B - Field Survey

Introduction.

Preparation for field surveys.

Medical assistance and public health, medical surveys.

Water supply, water supply surveys.

Food and agriculture.

Housing and shelter.

Government services, communications and transportation.

Reporting.

APPLICATION The two publications address government officials involved in all aspects of disaster preparedness and mitigation. Part A is of special interest to those at management level whereas Part B is intended primarily for use by people conducting surveys of damage to communities that have been affected by disaster.

SOURCE East-West Centre, Honolulu, Hawaii, USA.

COST Unknown

TITLE Public Standpost Water Supplies

AUTHOR International Reference Centre for Community Water Supply

BIBLIOGRAPHIC REFERENCE International Reference Centre for Community Water Supply (IRC). *Public standpost water supplies*. The Hague: International Reference Centre for Community Water Supply, 1979. 104p.

ANNOTATIONS This publication provides insights into economic and financial aspects of the planning of public standposts as well as to social, organizational and managerial issues related to their use. It also deals with community participation in technology selection, operation and maintenance. Information is provided on general criteria for the use of public standposts in low-income urban and rural areas, cost of standpost systems and selection of design standards. Emphasis is given to operation and maintenance, and suggestions are made regarding institutional arrangements; aspects relating to establishment of a legal framework for public standposts, financing and training of technicians are also covered. The publication deals mostly with the operational aspects of public standposts but some technical aspects are also included.

CONTENT

Introduction, general concepts.

Economics and finance: cost of standpost systems; selection of design standards; financing and social aspects; social appropriateness; planning and social acceptability; social organization.

Organization and management: institutional structure; staff requirements and training; operation management; maintenance; supervision; revenue collection.

Community participation: participation in the planning and implementation; participation in operation and maintenance; use of water and improvement of health; community organization.

Technical aspects: choice of technology; water consumption; hydraulics and capacities; standposts and layout.

Annexes with a check-list for integrated programme development, figures and procedures for standpost design.

APPLICATION This publication is of particular interest for decision-makers, planners, administrators, public health workers, engineers and sanitarians responsible for the planning and implementation of water supply services in low-income areas. The information available may be useful to professionals and technicians responsible for water supply in emergencies, reconstruction and rehabilitation after disasters and to those dealing with water supply for refugees.

SOURCE International Reference Centre for Community Water Supply and Sanitation (IRC), P.O. Box 93190, 2509 The Hague, The Netherlands.

COST US\$14.00

TITLE Safe Water and Waste Disposal for Rural Health - A Programme Guide

AUTHOR This book is part of the "Water for the World" series prepared by the National Demonstration Project under contract to the US Agency for International Development. An editorial advisory board oversaw the entire project and reviewed the materials prepared as part of it.

BIBLIOGRAPHIC REFERENCE US Agency for International Development. *Safe water and waste disposal for rural health: a programme guide*. Washington, DC: US Agency for International Development, 1982. 231p.

ANNOTATIONS A comprehensive compendium on water supply and waste disposal in rural areas prepared with the cooperation of several specialists in the subject. The book provides an overview of the relationship between water supply, sanitation and health and basically defines the problems that safe water and waste disposal interventions can help to solve. It proposes solutions and technologies in water supply and waste disposal which are considered appropriate for use in the rural areas of developing countries. It covers aspects relating to the establishment and implementation of a rural water supply and sanitation programme, including assessment, planning, selection of alternatives, community participation and human resources development.

CONTENT

Water supply and world health: the problem in the developing nations; a survey of water-related diseases; development and use of water quality standards.

Water supply and waste disposal: water supply systems; water treatment; operation and maintenance.

Waste disposal systems: excreta disposal; wastewater disposal; solid waste management; stabilization ponds.

Environmental health programmes: collection of data; selection of alternatives; evaluation; community participation.

Development of human resources: assessment of human resources needs; training programmes; economics of water supply and sanitation programmes; water rates.

As appendices, a glossary of common terms used in water supply and waste disposal and a list of "Water for the World" technical notes.

APPLICATION This guide addresses professionals and technicians who have responsibility for developing and implementing water supply and sanitation programmes for rural areas. It is a good reference source for those dealing with emergencies, evacuation camps and refugee areas; it should also prove useful as background material for training activities. Of special interest are the glossary and the information on "Water for the World" technical notes which are included as appendices (see p.79 of this bibliography).

SOURCE Agency for International Development, 320 Twenty-first Street NW, Washington, DC 20523, USA.

COST Unknown

TITLE Safety and Survival in an Earthquake

AUTHOR American Red Cross

BIBLIOGRAPHIC REFERENCE American Red Cross. *Safety and survival in an earthquake*. Los Angeles: American Red Cross, 1982. 43p.

ANNOTATIONS This publication is part of an earthquake preparedness course entitled "Safety and Survival in an Earthquake". The American Red Cross has developed the book to promote individual awareness and response to disaster. It is intended for wide-scale distribution to the public in earthquake-prone areas. Written in language that can be easily understood by the public, emphasis is placed on explaining the possible effects of an earthquake on a community and on the household. Reference is made to water supply, sanitation, food planning and other aspects of home preparedness.

CONTENT

Earthquakes: general information.
Home emergency supplies: food planning; food storage.
Safe drinking-water in an emergency.
Principles of psychological first aid.
Family disaster plan, instructions for water, gas and electricity.
After an earthquake - check-list.
Earthquake survival test.
Bibliography.

APPLICATION Useful to promote awareness and as an educational tool in earthquake-prone areas. Provides valuable information but needs adaptation for use in developing countries.

SOURCE American Red Cross, 2700 Wilshire Blvd, Los Angeles, Ca 90057, USA.

COST US\$3.00

TITLE Sanitation and Disease - Health Aspects of Excreta and Wastewater Management

AUTHOR Feachem, R.G., Bradley, D.J., Garelick, H., Mara, D.D.

BIBLIOGRAPHIC REFERENCE Feachem, R.G., Bradley, D.J., Garelick, H., Mara, D.D. *Sanitation and disease: health aspects of excreta and wastewater management*. Chichester: John Wiley and Sons, 1983. 528p. (World Bank studies in water supply and sanitation, 3).

ANNOTATIONS This book arises out of a World Bank research project on appropriate technologies for waste disposal and addresses itself mainly to the public health, microbiological and parasitological aspects of sanitation. It presents a comprehensive overview with detailed information on the interaction of human excreta and health, dealing with epidemiological issues of disease protection through improved excreta disposal, and the effect of excreta disposal and re-use technologies on the survival and dissemination of particular pathogens. The book presents a distillation of available knowledge about excreta and wastewater and their risks to public health, and about detection, survival and removal of pathogens in the environment. Health aspects of excreta and sewage systems, and the re-use of excreta and discharge of effluents are also dealt with. Detailed information is provided on the biology and epidemiology of specific excreted pathogens, viruses, bacteria, protozoa and helminths and on the efficacy of various waste disposal processes in reducing or eliminating the pathogen. There is also a section on insects and excreta which includes methods of mosquito, fly and cockroach control.

CONTENT

Part I

Health hazards of excreta: theory and control; elements and health risks of excreta and wastewater; environmental classification of excreta-related infections; the risks of excreta to public health; detection, survival and removal of pathogens in the environment; health aspects of excreta and night soil systems; health aspects of sewage systems; re-use of excreta and discharge of effluents; the human elements in sanitation systems.

Part II

Environmental biology and epidemiology of specific excreta pathogens: excreted viruses; excreted bacteria; excreted protozoa; excreted helminths; insects and excreta.

Each chapter has its own list of references cited.

APPLICATION The book is intended for the wide spectrum of professionals concerned with sanitation and public health: health planners, public health administrators, environmental hygienists, sanitary engineers, public health workers, health educators, epidemiologists, microbiologists and parasitologists. It is written in such a way that it may be absorbed by people from different professional backgrounds. It is an excellent reference and source of information for professionals and technicians responsible for environmental health interventions in emergencies, disaster relief and rehabilitation work and refugee camps.

SOURCE John Wiley and Sons Ltd., Distribution Centre, Shripney Rd., Bognor Regis, Sussex PO22 9SA, United Kingdom.

COST £55.00

TITLE Sanitation Aspects of Mass Evacuation

AUTHOR Public Health Service, US Department of Health, Education and Welfare

BIBLIOGRAPHIC REFERENCE United States. Public Health Service, Department of Health, Education and Welfare. *Sanitation aspects of mass evacuation*. Washington, DC: US Department of Health, Education and Welfare, 1955.

ANNOTATIONS The guide consists basically of an outline presentation of environmental health problems which may arise during mass evacuation (the organized, timed and supervised dispersal of civilians from dangerous and potentially dangerous areas and their reception and care in safer areas). The guide addresses primarily the problem of mass evacuation as a result of warfare, principally nuclear, but the information may also be useful in other types of population movement. Information is also provided on aspects of radioactive fall-out and on environmental health issues such as water supply, food handling, waste disposal, vector control and personal hygiene.

CONTENT

Definition of terms related to mass evacuation.

Outlines on radioactive fall-out, water supply, sanitation of food handling, excreta disposal, handling of refuse, personal hygiene, disinfection and vermin control.

Also a set of forms for physical inventory, water supply, excreta disposal, refuse handling, insect and rodent control.

APPLICATION This publication may be useful to health and civil defense officers responsible for emergency preparedness and disaster relief. Also to professionals and technicians dealing with mass movements in refugee situations.

SOURCE Public Health Service - US Department of Health, Education and Welfare.

COST Unknown

TITLE Sanitation in Developing Countries

AUTHOR International Development Research Centre

BIBLIOGRAPHIC REFERENCE International Development Research Centre. *Sanitation in developing communities: proceedings of a workshop on training held in Lobatse, Botswana, 14-20 August 1980.* Ottawa: International Development Research Centre, 1981. 172p.

ANNOTATIONS These proceedings include papers presented at the meeting, summaries of the discussions, description of the field visits, resolutions and action plans. Subjects covered by the papers presented at the workshop are related mostly to technology, information exchange and training. Information is provided on community experience in the use of low-cost technologies for sanitation and wastewater disposal and on approaches used to foster health education and community participation. Emphasis is given to training aspects of low-cost technologies and specifically of sanitation-related issues. The value of the publication lies principally in the insights into sanitation experiences in African countries.

CONTENT

Use of latrines in rural and urban areas; housing sanitation; anaerobic digestion as a rural sanitation option; experience with aqua privies; septic tanks; sewerage and low-cost sanitation; sludge disposal in urban centres.

APPLICATION This publication largely addresses professionals, technicians and health community workers responsible for sanitation-related projects and activities. The information provided may be useful to those responsible for environmental health in emergencies and refugee camps.

SOURCE International Development Research Centre, Box 8500, Ottawa, Canada K1G 3H9.

COST Unknown

TITLE Sanitation Without Water

AUTHORS Winblad, U., Kilama, W.

BIBLIOGRAPHIC REFERENCE Winblad, U., Kilama, W. *Sanitation without water*. London: MacMillan Educ., 1985. 174p.

ANNOTATIONS This monograph provides practical information on a range of possible technical solutions for excreta disposal. The emphasis is on simple measures that can be carried out with limited funds, equipment and materials. Examples are given of solutions adopted for sanitation without water in several countries. Comprehensive information is provided on criteria for selecting the right type of latrine, location and components. Details are given on how to build a pour-flush latrine, a ventilated improved pit-latraine (VIP) and a compost latrine. Emphasis is given to operation and maintenance aspects for different types of installation. Information is also provided on fly and mosquito control in connection with the use of latrines. A glossary of terms used in connection with sanitation/excreta disposal is included. A large list of references is provided.

CONTENT

Sanitation and disease: most important diseases connected with poor sanitation.

Examples of sanitation without water: Algeria, Bhutan, Botswana, China, Egypt, Federal Republic of Germany, Guatemala, India, Mexico, South Africa, Sweden, Tanzania, USA, Vietnam, Yemen and Zimbabwe.

Selecting the right latrine: criteria for selection; flush system; drop system; pit latrine; compost latrine; use of decomposed human excreta as fertilizer; costs.

Location, criteria for location.

Latrine components, description of the different components.

How to build a pour-flush latrine and a ventilated improved pit-latraine (VIP). Composting and how to build a compost latrine.

Operation and maintenance: instructions for compost and pit latrines; pour-flush latrines.

Appendices on how to build a soak pit and on fly and mosquito control.

A large list of references.

A glossary of terms commonly used in connection with sanitation/excreta disposal.

APPLICATION A simple, readable and well illustrated manual for health officers, sanitarians and community health workers. It should also be of value to planners, civil and sanitary engineers concerned with appropriate technology. It is of special interest to professionals and technicians responsible for sanitation interventions in emergencies, reconstruction and rehabilitation after disaster and in refugee areas.

SOURCE MacMillan Distribution Ltd, Brunel Rd., Houndmills, Basingstoke, Hampshire, RG21 2XS, United Kingdom.

COST £10.95; £3.50 (paperback)

TITLE Self-Help Wells

AUTHOR Koegel, R.G.

BIBLIOGRAPHIC REFERENCE Koegel, R.G. *Self-help wells*. Rome: Food and Agriculture Organization of the United Nations, 1977. 78p. (FAO Irrigation and drainage paper series; no.30).

ANNOTATIONS The purpose of this publication is to review the methods for well drilling and digging which can be carried out with local materials by local people and ensuring a water supply which is dependable, safe and in a convenient location. Emphasis is placed on the use of simple low-cost techniques; these techniques should be low-capital, labour-intensive and suitable for self-help projects. Information is provided on advantages and disadvantages of small and large diameter wells. Details are given on techniques for the construction of different types of wells, equipment needed, well development and finishing, and health aspects during all phases of the well construction and operation. The publication also addresses the issue of skills and materials for self-help projects.

CONTENT

Ground water occurrence.

Comparison of large and small diameter wells.

Small diameter wells: bored or augered wells; driven wells; jetted wells; percussion; hydraulic rotary; casing and screens; well development and finishing; problem solving.

Large diameter wells: rationale for construction of large diameter wells; excavation; limiting; moulds; concrete work; finishing large diameter wells.

Hybrid wells, non-vertical wells.

Health aspects.

Availability of skills and materials.

APPLICATION This FAO publication is intended for engineers, agronomists, and health officers who wish to help people obtain a better water supply mainly through self-help construction projects. The publication may be useful to professionals and technicians responsible for solving water supply problems in emergencies, evacuation camps and refugee areas.

SOURCE Food and Agriculture Organization of the United Nations, Via delle Terme di Caracalla, 00100 Rome, Italy.

COST Unknown

TITLE Setting Environmental Standards: Guidelines for Decision-making

AUTHOR de Koning, H.W. (Editor)

BIBLIOGRAPHIC REFERENCE de Koning, H.W. (Ed.) *Setting environmental standards: guidelines for decision-making*. Geneva: World Health Organization, 1987. 105p.

ANNOTATIONS This publication discusses the various aspects of the decision-making process for the development of environmental standards, from the standpoint of health. Several sections deal with the definition of appropriate health objectives or norms while other sections discuss the strategies and legislative instruments by which to achieve these norms. An attempt has been made throughout the text to provide examples and illustrations of how individual countries have done this. There are several annexes including one with a summary of WHO water quality guideline values and another with a summary of air quality guidelines, as well as a large list of references.

CONTENT

Introduction; identification of priority pollution issues; information on health effects; assessment of exposure; strategies for prevention and control; legal framework; consequences of different approaches to environmental health protection; decision-making process.

Annexes on WHO Environmental Health Criteria documents; examples from the legal file of the International Register of Potentially Toxic Chemicals; monographs on the evaluation of the carcinogenic risks of chemicals and pesticides; summary of WHO water and air quality guidelines.

APPLICATION This is a publication of interest to a wide spectrum of professionals, decision-makers, university teachers and others responsible for the development of environmental protection policies and implementation of pollution control. Although the publication does not address specifically emergency and disaster relief issues the information available is a valuable reference for professionals dealing with disasters in which air and water pollution are problems to be dealt with. It may also be of interest to planners dealing with policies for emergency preparedness. Available in English, French and Spanish.

SOURCE World Health Organization, Distribution and Sales, 1211 Geneva 27, Switzerland.

COST SwF17.00; US\$13.60

TITLE Shelter after Disaster

AUTHOR Davis, I.

BIBLIOGRAPHIC REFERENCE Davis, I. *Shelter after disaster*. Oxford: Oxford Polytechnic Press, 1978. 144p.

ANNOTATIONS This publication provides insights into the overall problem of shelter after disaster. Based on a study of information on several natural disasters, the author emphasizes the importance of emergency preparedness and analyses in diagrammatic form concepts related to vulnerability, social attitudes, shelter needs, reconstruction and provision of aid. Comments are offered on diverse strategies that are likely to be pursued in the immediate aftermath in relation to shelter and housing needs. In the appendix information is provided on six major disasters due to earthquakes and hurricanes, mainly regarding shelter and overall reconstruction policy.

CONTENT

Housing and vulnerability: disaster, poverty and urbanization; cultural values; casualties and damages.

Myth and reality: vulnerability; social attitudes; shelter needs; reconstruction; the provision of aid.

Filling the gap, strategies.

Historical perspective.

Appendix A - Summary charts on disasters: Skopje; Yugoslavia; Managua, Nicaragua; Hurricane Fifi, Honduras; Lice, Turkey; Guatemala; Friuli, Italy.

Appendix B - Map on the incidence of disasters and on vulnerability to disasters.

APPLICATION A publication of interest to planners, administrators and technicians responsible for emergency preparedness and disaster relief.

SOURCE Oxford Polytechnic Press, Headington, Oxford OX3 OBP, United Kingdom.

COST £4.75

TITLE Simplified Procedures for Water Examination; Including Supplement on Instrumental Methods.

AUTHOR American Water Works Association

BIBLIOGRAPHIC REFERENCE American Water Works Association. *Simplified procedures for water examination - including supplement on instrumental methods*. Denver: American Water Works Association, 1978. 190p.

ANNOTATIONS This is a laboratory manual aimed at filling a need for information on procedures for water examination for workers in the field. It presents methods which can be used to check day-to-day variations in water quality, utilize inexpensive, readily available apparatus and depend on simple, easy-to-follow techniques. The manual provides guidance for chemical, bacteriologic and biologic examination. Details are given on the purpose of the tests, apparatus and reagents needed and procedures to be followed. Of special interest to those dealing with water supply in emergencies and refugee camps are the chapters on control of residual chlorine and on bacteriologic examination.

Content

General introduction: equipment; laboratory supplies; records; sampling conversion factors.

Chemical examination: alkalinity; aluminium; ammonia nitrogen; calcium; carbon dioxide; chloride; chlorine; colour; turbidity; taste and odour, etc.

Bacteriologic examination: membrane filter method; multiple-tube fermentation method.

Biologic examination: apparatus and reagents; collection of samples; examination of samples; identification of plankton; counting procedures; significance and application of results.

APPLICATION This manual is a valuable reference for those responsible for water quality control at laboratory and field level. May be useful for professionals and technicians involved in water supply interventions in emergencies and refugee camps.

SOURCE American Water Works Association, 6666 W. Quincy Ave., Denver, CO 80235, USA.

COST US\$20.40

TITLE Small Community Water Supplies: Technology of Small Water Supply Systems in Developing Countries

AUTHOR Hofkes, E.H. (Editor)

BIBLIOGRAPHIC REFERENCE Hofkes, E.H. (Ed.) *Small community water supplies: technology of small water supply systems in developing countries*. Chichester and New York: John Wiley and Sons, 1983. 442p. (IRC technical paper series; no.18).

ANNOTATIONS This handbook aims to provide an introduction to the technology of small community water supplies. It is an ample review of the subject prepared with the contribution of several specialists. The information in the handbook covers a wide spectrum of technological aspects of small water supplies as well as subjects related to programme planning and implementation. Emphasis is given to technologies compatible with the prevailing economic, environmental and sociocultural conditions of developing countries. Reference is made to the operation of water supply systems in emergencies and to disinfection of water in emergency situations. The chapter on disinfection may be of special interest to those dealing with water supply in emergency situations.

CONTENT

Introduction: water and human health; water supply and development.
Planning and management: manpower and training; community involvement; emergency operation.
Water quantity and quality.
Water resources: water source selection.
Rainwater harvesting: roof catchments; ground catchments; storage.
Springwater tapping.
Groundwater withdrawal: infiltration galleries; dug wells; tube wells.
Surface water intake: typical water intakes; small drains and village ponds.
Artificial recharge.
Pumping: types of pumps.
Water treatment: water quality and treatment.
Aeration: aerators.
Coagulation and flocculation: coagulants; rapid mixing; flocculators.
Sedimentation: settling tanks; plate and tube settlers.
Slow sand filtration: slow sand filters.
Rapid filtration: rapid filters.
Disinfection: chlorination; disinfection in emergency situations.
Water transmission.
Water distribution.
Appendices on sanitary surveying, water well drilling, and chemicals for use in water treatment.
A bibliography is given at the end of each chapter.

APPLICATION This handbook is directed at engineers and technical staff involved in water supply programmes and projects. It is a useful reference for those responsible for solving water supply problems in emergencies, post-disaster relief, rehabilitation and reconstruction (mainly in rural areas), and refugee camps.

SOURCE John Wiley and Sons Ltd., Distribution Centre, Shripney Rd., Bognor Regis, Sussex PO22 9SA, United Kingdom or International Reference Centre for Community Water Supply and Sanitation, P.O. Box 93190, 2509 AD The Hague, The Netherlands.

COST £18.95; US\$29.00

TITLE Small Water Supplies

AUTHOR Cairncross, S., Feachem, R.G.

BIBLIOGRAPHIC REFERENCE Cairncross, S., Feachem, R.G. *Small Water Supplies*. London: The Ross Institute, 1978. 78p. (Bulletin no.10).

ANNOTATIONS This monograph provides a summary of simple technological alternatives for small water supplies. It describes methods for building water supply systems to serve small communities ranging in size from an individual household to a community of about one thousand people. Information on different types of wells, raising devices and simple methods of water treatment is given as well as on storage techniques, pipes and options for water distribution. Of special interest is the chapter on purification of water on a domestic scale which covers different alternatives for improvement and/preservation of water quality at the household level, a subject of interest to those dealing with emergencies, disaster relief and refugee situations.

CONTENT

Sources of water: rain; springs; wells (different types); well disinfection; surface water infiltration; river intakes.

Raising water: pumps; dams; other devices.

Water treatment: storage and sedimentation; filtration; disinfection; aeration.

Storage, dams.

Pipes, design and buying.

Water distribution, house connection, public water points.

Purification on a domestic scale: canvas filter; household sand filter; ceramic and paper filters; chemical disinfectants; boiling; desalination; storage in the house.

Appendices on bacterial analysis of drinking water, units.

APPLICATION This publication is not aimed at those engaged in large-scale water supply programmes but rather at health officials and community health workers dealing with small communities. The information may be of interest to technicians responsible for water supply in emergencies and in refugee situations.

SOURCE The Ross Institute of Tropical Hygiene, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, United Kingdom.

COST Unknown

TITLE Surface Water Treatment for Communities in Developing Countries

AUTHORS Schulz, C.R., Okun, D.A.

BIBLIOGRAPHIC REFERENCE Schulz, C.R., Okun, D.A. *Surface water treatment for communities in developing countries*. Chichester and New York: John Wiley and Sons, 1985. 312p.

ANNOTATIONS This text addresses the treatment of surface waters for communities in developing countries and proposes alternative low-cost technologies and practices which minimize the use of mechanization, instrumentation and automation and rely on local human resources for operation and maintenance. The solutions proposed also advocate the design of installations which are labour intensive, have low capital and recurrent costs and are tailored to the prevailing social and economic conditions. Ample information is provided on pre-treatment processes, mixers, flocculators, settling basins, rapid and slow sand filters; also on experiences with small modular water treatment plants. The compendium covers aspects related to costs of water treatment plants in developing countries and includes a chapter on human resources development. There are several appendices, references and a selected bibliography.

CONTENT

Introduction; examples of inappropriate technology.
 Basic considerations: design guides; water quality criteria; choice of source; choice of treatment processes; construction materials and practices.
 Pre-treatment: storage, roughing filtration; grit removal.
 Chemicals and chemical feeding: jar-test; primary coagulants; pH control; coagulant aids; disinfection; chemical feeding.
 Hydraulic rapid mixing: design criteria; rapid mixing devices.
 Hydraulic flocculation: design criteria for flocculators; surface-contact units.
 Sedimentation: horizontal flow sedimentation; inclined-plate and tube settling; upflow sedimentation.
 Filtration: rapid filtration; upflow-downflow filtration; slow sand filtration.
 Modular and package design for standardized water treatment plants: package plants; modular water treatment plants.
 Costs of water treatment plants in developing countries: construction costs; operation and maintenance costs.
 Human resources development: manpower development in developing countries; plant personnel; training.
 Appendices on chemicals; hydraulic calculations; checklists for treatment processes; jar testing; simplified procedures for water quality analysis.
 References and a selected bibliography.

APPLICATION This book addresses design engineers in national water supply agencies, teachers and students of sanitary engineering and consulting firms in developing countries. It may be a useful reference for engineers responsible for the design of water supply systems for temporary settlements and refugee camps as well as for rehabilitation works.

SOURCE John Wiley and Sons Ltd., Distribution Centre, Shripney Rd., Bognor Regis, Sussex PO22 9SA, United Kingdom.

COST £14.50

TITLE Traditional Water Purification in Tropical Developing Countries - Existing Methods and Potential Application

AUTHOR Al Agharia Jahn, S.

BIBLIOGRAPHIC REFERENCE Al Agharia Jahn, S. *Traditional water purification in tropical developing countries: existing methods and potential application*, Eschborne, Federal Republic of Germany: German Agency for Technical Cooperation (GTZ), 276p.

ANNOTATIONS This manual provides a comprehensive description of native technologies, results of assessment of promising methods and materials, and practical advice for improvement of water quality at household and community levels. It highlights simple purification techniques based on simple and inexpensive methods which have been proven useful and emphasizes the importance of preserving traditional knowledge and improving it for the benefit of the users themselves. A review is made of information available regarding traditional water purification methods in use in developing countries, including filtration practices, purification by storage and methods of disinfection. Of special interest, particularly for those responsible for water supply in emergencies, refugee camps and temporary settlements, are the chapters on water purification methods at household level and on construction of small treatment facilities in villages. The book also addresses the question of the participation of women in solving the water supply problem and the important role they can play in preserving water quality. The book contains very valuable information on current practices, users' attitudes and community participation.

CONTENT

Introduction, historical background.

Types of raw water treated by traditional methods: users' attitudes towards water quality; assessment of traditional water sources.

Traditional methods of water purification: methods to clarify water, methods for disinfection and removal of micro-pollutants.

Criteria for choice of method: users' assessments of different methods; assessment of traditional water treatment.

General public health considerations.

Research on traditional water coagulation, natural coagulants, water purification methods at household level, construction of small treatment plants in villages.

Each chapter has a list of references.

APPLICATION The book is written for a wide range of readers with different interests and experiences including scientists, students, planners, technical personnel and volunteers. Regarding personnel engaged in emergency preparedness and relief activities, it may be useful to professionals and technicians as well as to community workers responsible for public health and environmental health interventions.

SOURCE German Agency for Technical Development (GTZ), Postfach 5180, D-6236. Eschborn 1, Federal Republic of Germany.

COST Unknown

TITLE Ventilated Improved Pit Latrines: Guidelines for the Selection of Design Options

AUTHOR Mara, D.D.

BIBLIOGRAPHIC REFERENCE Mara, D.D. *Ventilated improved pit latrines: guidelines for the selection of design options*. Washington, DC: World Bank, 1985. 18p. (TAG discussion paper; no.4).

ANNOTATIONS This discussion paper seeks to clarify the current situation with regard to design of the ventilated improved latrine, which includes several options such as single and twin pits, emptiable or non-emptiable, lined or unlined and unraised or raised above ground level. It provides guidelines to selection of the most appropriate VIP latrine design option according to the social and economic conditions of the householder. The paper assumes that a VIP latrine of some sort is the most appropriate and affordable solution for on-site excreta disposal in low-income urban and rural areas and that it is possible to select a type of VIP that is compatible with available resources as well as with the prevailing physical, sociocultural, institutional, economic and financial conditions. The paper focuses on the design options for the basic types of VIP latrine and indicates that construction options are covered in other World Bank Publications (TAG Technical Note no.13).

CONTENT

VIP latrine design options: relative cost and affordability; pit emptying; alternating pits; lining the pits; raising; in-house latrines; selection algorithm.

Annexes on latrine emptying costs and soil stability criteria.

APPLICATION This discussion paper is useful reading for anyone concerned with sanitation in low-income urban and rural areas, including those national and international officials responsible for mass evacuation in case of disaster and for refugee camps. It is of special interest to community health workers and sanitarians.

SOURCE The World Bank, 1818 H Street NW, Washington, DC 20433, USA.

COST Unknown

TITLE Wastewater Treatment and Excreta Disposal in Developing Countries

AUTHOR Bauman, W., Karpe, H.J.

BIBLIOGRAPHIC REFERENCE Bauman, W., Karpe, H.J. *Wastewater treatment and excreta disposal in developing countries*. Dortmund: German Appropriate Technology Exchange/German Agency for Technical Cooperation (GTZ), 1980. 167p.

ANNOTATIONS This manual was developed by a research project carried out by the Institute of Environmental Protection (INFU), University of Dortmund. It is based on an analysis of literature on the subject, discussions with experts, project travels and collection of data in developing countries. The manual presents a wide selection of installations, starting from the pit latrine up to compact sewage treatment plants and gives general planning and practical advice. Many of the technologies described in the manual have been developed, and have proved to be appropriate, for developing countries. Each technology has been assessed on the basis of technological requirements, possibility of realizing the project, hygiene effects, financial expenditure and institutional and cultural effects. More than sixty typical examples have been chosen for complementary exposition in the manual and are intended to serve as a practical guideline and enable the user to select the most appropriate technology.

CONTENT

Necessity for the treatment of wastewater and faecal substances in developing countries.

Technologies.

Excreta disposal in single stage plants.

Pit latrines.

Composting toilets.

Aqua privies and septic tanks.

Biogas plants.

Communal sanitation facilities.

Bucket latrines/vault toilets.

Sewage treatment in communal sanitation facilities.

Wastewater transportation system.

Waste stabilization ponds.

Aerated lagoons.

Aspects of settlement and population structure in the planning of sewage plants in developing countries.

Institutional and organization aspects.

Summary and recommendations.

An extensive list of references.

APPLICATION This document is intended to serve engineers and field staff who have responsibility for planning, design and operation of wastewater treatment installations and excreta disposal programmes in developing countries. The information given may be of interest to professionals and technicians responsible for emergencies, rehabilitation works and refugee camps. Available in English and German.

SOURCE German Agency for Technical Cooperation (GTZ), Postfach 5180, D-6236 Eschborn 1, Federal Republic of Germany.

COST Unknown

TITLE Water and Human Health

AUTHOR McJunkin, F.E.

BIBLIOGRAPHIC REFERENCE McJunkin, F.E. *Water and human health*. Washington, DC: US Agency for International Development, 1983. 134p.

ANNOTATIONS This publication is intended to provide an overview of the relationship between water and human health. Emphasis is given to issues related to water and health in developing countries vis-à-vis the availability of safe, accessible and reliable drinking-water supplies. Attention is also given to diseases associated with contact with polluted water and with vectors of disease which live or breed in water habitats. Detailed information is provided on the water and health aspects of specific water-borne, water hygiene, water contact and water habitat vector-borne diseases. An extensive bibliography on the relationship between water supply and specific diseases is included. The publication also addresses issues related to public health effectiveness of water treatment and of excreta and wastewater treatment and disposal. A chapter on the health impact of community water supplies deals with the benefits, in terms of disease prevention and reduction, deriving from provision of community water supplies. A glossary related to water and health is included.

CONTENT

Water and human health: water supply and disease; transmission of water-related diseases; water as a basic human need.

Water-borne diseases: amoebiasis; shigellosis; enteritis; cholera; diarrhoeal diseases; viral diseases; giardiasis; typhoid fever; salmonellosis; guinea worm; leptospirosis; tularaemia; cardiovascular disease and hardness of drinking water; carcinogens in drinking water.

Water hygiene diseases: enteric diseases; skin diseases; house-borne diseases; non-venereal treponematoses; trachoma and conjunctivitis.

Water contact diseases: schistosomiasis; diseases associated with swimming.

Water habitat vector-borne diseases: snail vector diseases; mosquito vector diseases.

Methods of evaluating the quality of drinking-water as to the risk of transmission of microbiological diseases: use of indicator organisms; coliforms; other indicators; bacterial plate counts; measurements of residual chlorine.

Public health effectiveness of water treatment: evaluation of water quality; goals of water treatment; protection from bacterial pathogens and viruses; reduction in organic and inorganic chemical content.

Public health effectiveness of excreta and wastewater treatment and disposal: potential health impacts; mechanisms for reducing health risks; systems to minimize discharge to surface waters; disinfection; advanced wastewater treatment.

Health impact of community water supplies; field studies of water supply/disease impacts; impacts on nutrition and on non-diarrhoeal diseases; summary of studies.

Annexes: a glossary and a summary analysis of selected field studies.

All chapters have a bibliography on specific subjects.

APPLICATION This comprehensive compendium, probably one of the best information sources on water and human health, addresses a wide audience, and is of special interest to public health workers, sanitary engineers and other environmental health staff. It may be highly useful, both as a reference and an information source, to professionals and technicians responsible for

emergency and disaster relief as well as for those dealing with environmental health management in refugee situations. It is also of interest for trainers and as a reference material for courses on emergency preparedness and disaster relief.

SOURCE US Agency for International Development, 320 Twenty-first Street NW, Washington, DC 20523, USA.

COST Unknown

TITLE Water for the World - Technical Notes

AUTHOR Produced for the US Agency for International Development by the National Demonstration Project, Institute for Rural Water and National Environmental Health Association.

BIBLIOGRAPHIC REFERENCE US Agency for International Development. *Water for the World: technical notes*. Washington, DC: US Agency for International Development, Development Information Centre, 1982.

ANNOTATIONS The Technical Notes, of which there are about 160, are part of a set of "Water for the World" materials. The notes are intended to provide up-to-date information on village water supply and waste disposal methodologies. Each technical note addresses a specific aspect and a broad range of subjects are covered, including community participation, design and construction features of water supply and sanitation facilities, operation and maintenance and human resources development. Notes are also available on solid waste management and control of disease. The notes include useful definitions and very well-prepared figures which make their use and understanding accessible to non-specialized personnel. The notes are not prepared specifically for emergencies but they are an excellent source of information on interventions to solve water supply and waste disposal problems in temporary settlements. Each Technical Note is a separate leaflet which makes their usage very practical.

CONTENT

There are 9 Technical Notes on Introduction and Human Resources subjects, 87 on Water Supply, 49 on Sanitation, 11 on Solid Wastes Management and 9 on Control of Diseases. The main subjects covered are as follows.

Overview of water and sanitation system development: community participation; training.

Overview of rural water supply: design; construction; operation and maintenance; water treatment (for surface and ground water); pumping stations; installation of pipes; leakage control; water storage.

Overview of sanitation: planning; design; construction; maintenance; septic tanks; stabilization ponds.

Solid wastes management: landfill; composting systems; biogas systems.

Control of disease: disease transmission; control of schistosomiasis; trypanosomiasis; enteric diseases; onchocerciasis.

APPLICATION The Technical Notes may be a useful reference source for professional and technical personnel responsible for emergency and disaster relief, refugee camps, etc. They may be of interest also as a reference material for courses and training activities on environmental health management in emergencies. The publication has the advantage of including general information on the subjects and specific information on technological alternatives for water supply and waste disposal.

SOURCE Development Information Centre, Agency for International Development, 320 Twenty-first Street NW, Washington, DC 20523, USA.

COST Unknown

TITLE Water Pumping Devices: A Handbook for Users and Choosers

AUTHOR Fraenkel, P.

BIBLIOGRAPHIC REFERENCE Fraenkel, P. *Water pumping devices: a handbook for users and choosers*. London: Intermediate Technology Publications, 1986. 196p. (FAO Irrigation and drainage paper series).

ANNOTATIONS This handbook, published by arrangement with the Food and Agriculture Organization of the United Nations (FAO), surveys water-lifting technologies and produces detailed guidance on the suitability of different methods of water lifting in different situations. The primary purpose of the publication is to provide a basis for comparing and choosing options for lifting water for irrigation purposes but the material available may also be useful for those seeking technical information on lifting water for other purposes e.g. water supply. Details are provided on mechanical capability, costs, reliability and availability of different types of water-lifting devices. Human and animal power, internal and external combustion, electricity, wind, solar energy and hydro-power are all analysed as alternatives for water-lifting systems.

CONTENT

Irrigation: small scale irrigation and development.

Water lifting for irrigation: general principles of water lifting; outline of principles of small irrigation.

Pumps: reciprocating and cyclic direct lift devices; rotary direct lift devices; reciprocating pumps; rotary pumps; rotodynamic pumps; air-lift pumps; impulse devices; gravity devices.

Power for pumping: human power; animal power; internal and external combustion engines; electrical power; wind power; solar power; hydro-power; biomass fuel and coal.

Choice of pump systems: financial and economic considerations; practical considerations.

References.

APPLICATION Although it addresses primarily professionals and technicians dealing with water lifting for irrigation purposes, this handbook may also be useful for those responsible for water supply schemes. It is a valuable reference for engineers and technicians selecting water lifting devices for temporary settlements, refugee camps and rehabilitation works.

SOURCE Intermediate Technology Development Group, 9 King Street, London WC2E 8HW, United Kingdom.

COST £12.00

TITLE Water, Wastes and Health in Hot Climates

AUTHOR Feachem, R.G., McGarry, M., Mara, D.D. (Editors)

BIBLIOGRAPHIC REFERENCE Feachem, R.G., McGarry, M., Mara, D.D. (Eds.). *Water, wastes and health in hot climates*. Chichester and New York: John Wiley and Sons, 1977. 416p.

ANNOTATIONS This book covers several types of problem associated with water supply and waste disposal in hot climates, particularly those of the tropical developing countries. Emphasis is placed on the need for innovation, use of non-conventional solutions and the importance of a multidisciplinary approach. There are contributions on subjects related to health and water quality, water supplies for low-income communities, institutional development, and sanitation and effluent re-use and reclamation. Information on solid wastes in hot climates is also available. Most of the contributors included references for the specific subject they covered.

CONTENT

Health and water quality: health aspects of water supplies in tropical countries; the health implications of irrigation schemes and man-made lakes in tropical environments; microbiological criteria for tropical water quality; surface water quality criteria for tropical developing countries.

Water supplies for low-income communities: water supplies for low-income communities, resource allocation; planning and design for a crisis situation; patterns of domestic water use in low-income communities; water supply and community choice; the economics of community water supply; water treatment in developing countries.

Institutional development: institutional development for sanitation and water supply; progress in the rural water programmes in Latin America.

Sanitation: sanitation and low-cost housing; waste collection in hot climates; wastewater treatment in hot climates; entomological and helminthological aspects of sewage treatment in hot climates; problems of village sanitation in India; solid wastes in hot climates.

Effluent re-use and reclamation: domestic wastes as an economic resource; bio-gas and fish culture; public health considerations in wastewater and excreta re-use for agriculture; planning and construction of wastewater reclamation schemes as an integral part of water supply.

APPLICATION The book is intended for professionals concerned with water supply and waste disposal, principally health planners, sanitary engineers and health educators. It can also be used as a reference and source of information for those responsible for environmental health in emergencies, disaster relief and rehabilitation and refugee camps.

SOURCE John Wiley and Sons Ltd., Distribution Centre, Shroton Rd., Bognor Regis, Sussex PO22 9SA, United Kingdom

COST £40.00

TITLE Water Works Engineering in Disaster

AUTHOR US Office of Civilian Defense

BIBLIOGRAPHIC REFERENCE United States. Office of Civilian Defense. *Water works engineering in disaster*. Washington, DC: Office of Civilian Defense, 1943. 147p.

ANNOTATIONS The purpose of this manual is to bring to the attention of waterworks engineers some of the special problems that may arise as a result of acts of sabotage or natural disaster and to provide them with information that may be of value in meeting these problems. It deals with technical aspects of emergency operation and maintenance of plant and distribution systems, the establishment of emergency water services in the event of interruption of the supply, the repair and disinfection of water mains and appurtenances, and the augmentation of the water supply for fire protection. Other information included and of importance in planning to meet disaster situations concerns the improvement of distribution system maps and records, the location of pipes and detection of leaks, possible causes of contamination of water mains and laboratory control. It is an old publication but still a valuable reference.

CONTENT

Emergency waterworks operation; waterworks maintenance; distribution system maps and records; pipe location and leak detection; repair of water mains; contamination of the water supply; disinfection of water supply systems; water supply for fire protection; distribution system hydraulics; temporary water services; wartime laboratory control; waterworks plant protection. Several appendices, including: improvised solution feeders; determination of residual chlorine; procedures for chlorine demand tests. Several references.

APPLICATION This book is intended for use by waterworks engineers and technicians, principally those responsible for operation and maintenance of water supply systems. It is a very good reference for waterworks engineers who have to deal with emergency situations.

SOURCE Office of Civilian Defense, Washington 25, DC, USA.

COST Unknown

APPENDIX I

ADDITIONAL REFERENCES

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World Health Organization. WHO Scientific Group Report. *Vector control in primary health care*. Geneva: World Health Organization, 1987. (WHO technical report series; no.755).

World Health Organization. *The community health worker: working guide; guidelines for training; guidelines for adaptation*. Geneva: World Health Organization, 1987. 464p.

World Health Organization/United Nations Environment Programme. *Selected methods of measuring air pollution*. Geneva: World Health Organization, 1976. 112p.

World Health Organization. *WHO Emergency health kit: standard drugs and clinic equipment for 10 000 persons for 3 months*. Geneva: World Health Organization, 1984. 43p.

Wijkman, A., Timberlake, L. *Natural disasters: acts of God or acts of man*. London: Earthscan, 1978.

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Zeballos, J.L. *Guia para actividades de salud en desastres naturales*. La Paz, Bolivia: Ministerio de Salud Publica, 1979. 40p.

APPENDIX II

JOURNALS, PERIODICALS AND NEWSLETTERS

Note: Each entry is followed by the address of the publisher.

Abstracts on Health Effects of Environmental Pollutants (monthly)

BIOSIS -- Biological Abstracts Inc.,
2100 Arch Street,
Philadelphia, Pennsylvania 19103-1399
USA

Caribbean Disaster Preparedness Newsletter (quarterly)

Pan Caribbean Disaster Preparedness and Prevention Centre,
P.O. Box 1207,
St. John's,
Antigua

Disaster Preparedness in America Newsletter

Pan American Health Organization,
525 Twenty-third Street NW,
Washington, DC: 20037,
USA

***Disaster - The Journal of the Relief and Development Institute
(International Disaster Institute)***

Foxcombe Publications,
High Park,
Broadworthy, Devon EX22 7SH,
United Kingdom

Earthquake Information Bulletin (bi-monthly)

US Geological Survey,
904 National Center,
Reston, VA 22092.
USA

Emergency Planning Digest (quarterly)

Emergency Preparedness Canada,
Ottawa, Canada K1A 0W6

Emergency Preparedness News (bi-weekly)

Business Publishers Inc.,
951 Persling Dr.,
Silver Springs, MD 20910-4464
USA

Environmental Health and Pollution Control

Excerpta Medica Abstracts Journals,
1 Molenwerf, 1014 AG Amsterdam,
P.O. Box 1527, 1000BM Amsterdam,
The Netherlands

Environmental Monitoring and Assessment

Kluwer Academic Publishers,
P.O. Box 322,
3300 AH Dordrecht,
The Netherlands

Environmental Pollution and Control (Abstract Newsletter)

National Technical Information Service (NTIS),
US Department of Commerce,
Springfield, VA 22161,
USA

EPA Journal (bi-monthly)

US Environmental Protection Agency,

For subscription: Superintendent of Documents,
GPO, Washington, DC: 20402,
USA

IDI (International Disaster Institute) News

International Disaster Institute
85 Marylebone High Street,
London W1M 3DE,
United Kingdom

Journal of Environmental Management (monthly)

Academic Press,
24-28 Oval Road,
London NW1 7DX,
United Kingdom

Journal of the American Water Works Association

American Water Works Association,
6666 West Quincy Avenue,
Denver, CO 80235,
USA

*Journal of the Institution of Water and Environmental Management
(bi-monthly)*

The Institution of Water and Environmental Management,
15 John Street,
London WC1N 2EB
United Kingdom

Journal of the Water Pollution Control Federation (monthly)

Water Pollution Control Federation,
601 Wythe Street,
Alexandria, VA 22314-1994,
USA

Natural Hazard Observer (bi-monthly)

Natural Hazards Research and Applications Information Center,
Institute of Behavioral Science #6,
Campus Box 482,
University of Colorado,
Boulder, CO 80309,
USA

Pest Control (monthly)

Edgewell Communications Inc.,
1 East First Street,
Duluth, Minnesota 55802,
USA

The Management of World Wastes (monthly)

Communications Channels Inc.,
6225 Barfield Road,
Atlanta, GA 30328,
USA

Unscheduled Events (quarterly)

Disaster Research Center,
College of Social and Behavioral Sciences of the Ohio State
University,
127-129 West 10th Avenue,
Columbus, Ohio 43201
USA

Water and Waste Treatment

DR Publications Ltd.,
Faversham House,
111 St. James's Road,
Croydon CR9 2TH,
United Kingdom

Water, Air and Soil Pollution

Klumer Academic Publishers Group,
P.O. Box 17,
3300 AA Dordrecht,
The Netherlands

World Water (monthly)

World Water,
P.O. Box 24,
Liverpool L69 2LQ,
United Kingdom

APPENDIX III

FILMS AND SLIDE LECTURES

Bacteriological Analysis of Water Supply Sources in Disaster Situations

Prepared by CEPIS - Pan American Centre for Sanitary Engineering and Environmental Sciences - Pan American Health Organization.

A slide programme and brief manual illustrating the use of the membrane filter method for bacteriological analysis of drinking-water. Intended to help train professionals and technicians in the use of equipment in emergency situations where routine laboratory procedures may not be available.

Available in English from:

PCDPPP,
P.O. Box 1207,
St. John's,
Antigua,
West Indies

Available in Spanish from:

CEPIS,
Casilla Postal 4337,
Lima 100,
Peru

Disaster and Public Health

Produced by CRED - Centre for Research on Epidemiology of Disasters.

Slide sets (mixed text and photos; guide book for each set).

- Set 1 Introduction.
- Set 2 Earthquake, Italy, 1980.
- Set 3 Hurricane David, Dominica, 1979.
- Set 4 Cabinda Refugees.
- Set 5 Khmer Rouge Refugees.
- Set 6 Khmer Serei Refugees.
- Set 7 Refugees, Implementation (1).
- Set 8 Refugees, Implementation (2).

Available from:

Centre for Research on Epidemiology of Disasters,
University of Louvain,
Belgium

Emergency Health Management after Natural Disaster

Slide series produced by the Pan American Health Organization.

- Set 1 Variable Effects of Disaster upon Health.
- Set 2 Epidemiologic Assessment and Surveillance.
- Set 3 The Management of Mass Casualties.
- Set 4 Environmental Health Following Natural Disasters.

- Set 5 Nutritional Aspects of Emergency Health Relief.
- Set 6 Relief Supplies and Transport
- Set 7 Setting Priorities and Mobilizing Assistance.
- Set 8 A Summary of Relief Procedures.

Available in English and Spanish from:

Pan American Health Organization
Emergency Preparedness and Disaster Relief Coordination Program,
525 Twenty-third Street NW,
Washington, DC 20037,
USA

Cost: US\$25.00 individual sets.
US\$200.00 complete series.

Emergency Management of Environmental Health and Water Supply

Slide series produced by the Pan American Health Organization (mixed photos and text for each set).

- Set 1 General Overview: A Case for Preparedness.
- Set 2 Planning Techniques.
- Set 3 Vulnerability Analysis.
- Set 4 Prevention Measures.
- Set 5 Preparing for Floods.
- Set 6 Preparing for Earthquakes.
- Set 7 Preparing for Hurricanes.
- Set 8 Environmental Health in Temporary Camps and Settlements.
- Set 9 Monitoring Water Quality.

Available in English and Spanish from:

Pan American Health Organization
Emergency Preparedness and Disaster Relief Coordination Program,
525 Twenty-third Street NW,
Washington, DC 20037,
USA

Cost: US\$25.00 individual sets.
US\$200.00 the complete series.

Handbook for Emergencies

Prepared by the United Nations High Commissioner for Refugees - UNHCR.

Slide and tape presentation on management of refugee situations which complements UNHCR's Handbook for Emergencies. Major topics covered include information on UNHCR operational procedures, organization of refugee camps, food and nutrition services, health care, logistics of camp selection and establishment, water supply and sanitation and field level management. Although addressed to refugee situations this slide and tape presentation can be useful for professionals and technicians dealing with other types of emergency situation, mass evacuation, rehabilitation after natural disaster, etc.

Available in English and Spanish from:

United Nations High Commissioner for Refugees (UNHCR),
Palais des Nations,
CH-1211 Geneva 10,
Switzerland

Information and Training for Low-Cost Water Supply and Sanitation

Training modules produced by the Water Supply and Urban Development Department, The World Bank.

A comprehensive set of training materials on low-cost water supply and sanitation prepared with the support of bilateral and international development agencies. A large number of training modules and sub-modules are available covering aspects such as: Introduction to low-cost water supply and sanitation; management and community participation; health and hygiene; water supply; sanitation; case studies and training information. The modules and sub-modules include instructor's and participants' notes, slides and cassettes.

Available in English and French (Spanish and Portuguese under preparation) from the:

Water Supply and Urban Development Department,
The World Bank,
1818 H Street NW,
Washington, DC 20433,
USA

Myths and Realities of Natural Disaster

Released by the Pan American Health Organization.

This video analyses myths concerning disaster - myths that exacerbate post-disaster problems and hamper disaster management. It presents these in the context of recent disasters in the Americas and offers a chance to examine post-disaster realities.

Available in English and Spanish from:

Pan American Health Organization,
Emergency Preparedness and Disaster Relief Coordination Program,
525 Twenty-third Street NW,
Washington, DC 20037,
USA

Cost: US\$25.00.

PAHO - Pan American Health Organization Training Materials on Emergency Preparedness and Disaster Relief

Self-instruction modules prepared by the University of Wisconsin - Disaster, Management Centre, Wisconsin, USA.

The modules were designed to complement and reinforce the concepts presented in the PAHO scientific publications on health aspects of emergency preparedness and disaster relief. Modules consist of a self-study guide, a final exam and an answer key.

Modules are available on:

- Emergency Health Management after Natural Disaster.
- Emergency Vector Control after Natural Disaster.
- Epidemiologic Surveillance after Natural Disaster.
- Environmental Health after Natural Disaster.
- Health Service Organization in the Event of Disaster.

Available in English and Spanish from:

Pan American Health Organization,
Emergency Preparedness and Disaster Relief Coordination Program,
525 Twenty-third Street NW,
Washington, DC 20037,
USA

Preventing Pesticide Poisoning in Developing Countries

Slide series prepared by the Office of Environmental and Scientific Affairs, The World Bank, 1984.

Fifty-one slides with instructor's guide, background text, proposed teaching curriculum, descriptive text for each slide, discussion questions and application problems. Discusses the importance of pesticides as a health problem in developing countries, describes the ways in which pesticide poisoning may occur and recommends measures for proper use. The information provided may be of interest to professionals and technicians responsible for insect and rodent control in emergencies.

Available in English from:

The World Bank,
1818 H. Street NW,
Washington, DC 20433,
USA

Vector Control after Natural Disasters

Slide programme prepared by the Pan American Health Organization.

A set of 49 slides and accompanying text.

Available in English and Spanish from:

Pan American Health Organization,
Emergency Preparedness and Disaster Relief Coordination Program,
525 Twenty-third Street NW,
Washington, DC 20037,
USA

Cost: US\$25.00

APPENDIX IV

ANNOTATED BIBLIOGRAPHIES WITH SELECTED ABSTRACTS

American Water Works Association. *Bibliographies on the water supply industry: emergency planning*. Denver, Colorado: AWWA, 1983. 16p.

Sixty-eight selected abstracts on emergency planning and response by the water supply industry in multiple disaster situations leading to inadequate water supply and storage capacity, contamination, inadequate distribution systems and treatment and facilities.

Available from:

American Water Works Association,
6666 West Quincy Avenue,
Denver, CO 80235,
USA

Davis, I. et al. *Homelessness and disaster response*. Newcastle-Upon-Tyne: Open House International, 1987. (Vol.12. no.3 pp. 66-71)

Follain, J. et al. *Annotated bibliography of housing characteristic demand studies*. Washington, DC: The World Bank.

International Reference Centre for Community Water Supply and Sanitation (IRC). *List of basic publications on community water supply and sanitation: a selected bibliography and glossary of expressions*. The Hague: IRC, 1987. 63p.

Morton, D.R. *A selected bibliography on disaster planning and sanitation*. Boulder, Colorado: Natural Hazards Research and Applications Information Center, 1981. 55p.

This annotated bibliography includes mainly the publications published by the Center. It covers earthquakes, floods and coastal storms hazards, planning for general hazards and disaster, and disaster simulation. Abstracts and other information provided.

Pan American Health Organization. *Disaster preparedness update: a computerized index of an emergency preparedness and disaster relief bibliography*. Washington, DC: Pan American Health Organization. (8 volumes).

The eight issues of the PAHO Disaster Preparedness Update offers about 4000 cross-indexed references of published and unpublished documents and reports on health-related aspects of emergency preparedness and disaster relief. A specialized disaster-thesaurus is included in each issue of the update. A disaster-preparedness indexing manual is also available.

Available from:

Pan American Health Organization,
Emergency Preparedness and Disaster Relief Coordination Program,
525 Twenty-third Street NW,
Washington, DC 20037,
USA

Pan American Health Organization. *Selected abstracts from publications, films and slides: disaster preparedness in the Americas*. Washington, DC: Pan American Health Organization, 1985. 35p.

Pan American Health Organization. *Selected bibliography series:*

- No.1 Communicable Diseases and Disaster Preparedness - A Selected Bibliography. October 1985.
- No.2 Emergency Care And Disaster Preparedness - A Selected Bibliography. October 1985.
- No.3 Disaster Training - A Selected Bibliography. October 1985.
- No.4 Hospitals and Disaster Preparedness - A Selected Bibliography. October 1985.
- No.5 Disaster Planning - A Selected Bibliography. October 1985.
- No.6 Chemical, Industrial and Nuclear Accidents - A Selected Bibliography. October 1985.

The objective of the Selected Bibliography is to gather, under specific subject areas, references that may be of assistance to those individuals and institutions working on health-related aspects of disaster planning, preparedness and relief assistance programmes.

Available from:

Pan American Health Organization,
Emergency Preparedness and Disaster Relief Coordination Program,
525 Twenty-third Street NW,
Washington, DC 20037,
USA

Rybezynski, W., Polprasert, C., McGarry, M. *Low-cost technology options for sanitation: a state of the art review and annotated bibliography*. Washington, DC: The World Bank.

A comprehensive technology review and annotated bibliography covering subject areas related to collection, treatment, reuse and disposal of human wastes and wastewater.

Available from:

The World Bank,
Publications Unit,
1818 H. Street NW,
Washington, DC 20433,
USA

The World Bank. *World Bank research in water supply and sanitation: summary of selected publications*. Washington, DC: The World Bank, 1980.

This summary includes publications prepared by the World Bank under the following series titles: World Bank Studies in Water Supply and Sanitation, and Appropriate Technologies for Water Supply and Sanitation.

Available from:

The World Bank,
Publications Unit,
1818 H. Street NW,
Washington, DC 20433,
USA

United States. Federal Disaster Assistance Administration. *Directory of disaster-related technology*. Washington, DC: US Government Printing Office, 1975.

The Directory is a compendium of studies, investigation and research efforts undertaken since 1970 and related to disaster preparedness, assistance and mitigation and hazard reduction of natural disasters in the United States.

Available from:

Federal Disaster Assistance Administration,
Department of Housing and Urban Development,
Washington, DC 20410
USA

Water and sanitation for Health Project - WASH. *Women's role in water supply and sanitation in developing countries: a four-part bibliography*. Arlington: US Agency for International Development, 1984. (WASH technical report; no.21).

This bibliography includes over one-hundred documents relevant to women's involvement in water supply and sanitation activities and in related health education activities. This bibliography is presented by author, subject, phase of development and country. Some of the information available may be of interest to professionals and technicians dealing with post-disaster rehabilitation programmes and refugee situations.

Whyte, A.V., Seviour, C. *Rural water supply and sanitation in less-developed countries: a selected and annotated bibliography*. Ottawa: International Development Research Centre, 1974. 81p.

A comprehensive annotated bibliography covering a wide-spectrum of water supply and sanitation-related subjects. The annotations are presented under the following categories: general, technology, health and disease, and bibliographies.

Available from:

International Development Research Centre,
P.O. Box 8500,
Ottawa, Canada K1G 3H9

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