



# training and information materials of water supply and sanitation programmes: socio-cultural considerations

interim report  
INT/89/044 UNDP/UNESCO

Regional Project for Cultural Heritage and Development UNDP/UNESCO





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**Final Report**  
INT/89/044 UNDP/UNESCO



TRAINING AND INFORMATION MATERIALS  
OF WATER AND SANITATION PROGRAMMES:  
SOCIO-CULTURAL CONSIDERATIONS

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## TRAINING AND INFORMATION MATERIALS OF WATER AND SANITATION PROGRAMMES: SOCIO-CULTURAL CONSIDERATIONS

### EXECUTIVE SUMMARY

The INT/89/044/A/01/13 Project "Socio-Cultural Aspects of Training and Information Materials of Water and Sanitation Programmes" is being executed through the UNDP/UNESCO Regional Project for Cultural Heritage and Development - RLA/83/002, Lima, Peru. The first phase of the project (six months) has the objective to carry out an assessment of the socio-cultural aspects of training and information materials used by governmental, bilateral, multilateral and non-governmental organizations in water and sanitation programmes and to prepare an interim report, including recommendations and guidelines, for the incorporation of a socio-cultural consideration in project design, training and information materials. In preparing the interim report special attention was to be paid to different communication techniques and the type of media used to transmit or exchange ideas about techniques, technologies or methodologies and to the role of women.

On the basis of the interim report, future scope and duration of the second phase of the project is to be decided.

This report is the result of the first phase and is the "interim report".

A survey was carried out of training and information materials used in drinking water and sanitation programmes. Attention was given to the primary health care context of such programmes.

Socio-cultural aspects of water and sanitation projects were interpreted to mean those training and information materials that assisted planners to implement the concept of community management, the development of culturally appropriate educational materials and social marketing.

### Conclusions

The main conclusions of the review are:

1. Training and information materials on water supply and sanitation are difficult to identify and obtain because of the lack of a comprehensive guide to the literature. What is needed is a guide to the entire field of materials that can be used by anyone interested in the subject.
2. Good examples of materials for training of trainers, extension workers and communities exist, although all may not specifically be on the topic

of community water supply and sanitation. These examples can be used to develop culturally appropriate materials for local use.

3. Most materials are in English. More attention needs to be paid to translating materials into other major languages.
4. A major gap was noted in the literature obtained on water supply and sanitation for urban and peri-urban areas. Very probably this literature exists and a user's guide to the entire sector would assist in identifying such materials.
5. The literature does not provide good models for government agencies to adopt in order to facilitate the concept of community management and the creation of educational materials for local use.

### Recommendations

The main recommendations of the review are:

1. The second phase of the project should aim to produce a user's guide to the best training and information materials.

2. The project should address the issue that most materials are published only in English and should seek ways to have these translated into major languages.
3. The project should address the problem of lack of some particularly good materials and serve as a reproduction and distribution point for certain special items.
4. The project should make a special effort to collect training and information materials for urban and peri-urban areas. If they are not sufficient for the sector, some effort should be made to develop materials for these areas.
5. The project could begin the development of working models for government agencies to exchange from top-down approaches to the concept of community management. The second phase could take on "case studies" to document government agencies where successful change has occurred and begin to build models for the sector.

## I. BACKGROUND

The International Drinking Water Supply and Sanitation Decade is drawing to a close at the end of 1990 and yet the challenge to provide all of the world's people with clean, safe drinking water and good sanitation has only been partially met. New efforts will continue "Beyond the Decade". The challenge of the next few years is to shift responsibility for water supply and sanitation from government agencies to communities so that greater sustainability of these systems can be achieved.

Over the past Decade international organizations have facilitated the development of a philosophy and tools for greater community involvement in planning, implementing, operating, maintaining and evaluating their water supply and sanitation systems. These developments have been lumped under the rubric of "socio-cultural aspects" of water supply and sanitation programmes.

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organizations in water and sanitation programmes and to prepare an interim report, including recommendations and guidelines, for the incorporation of a socio-cultural consideration in project design, training and information materials. In preparing the interim report special attention was to be paid to different communication techniques and the type of media used to transmit or exchange ideas about techniques, technologies or methodologies and to the role of women.

On the basis of the interim report, future scope and duration of the second phase of the project was to be decided.

The immediate beneficiaries of the project are government agencies, multi-lateral and bilateral agencies and NGOs. The ultimate beneficiaries are the inhabitants of poor rural and urban communities in need of safe water and sanitation.

This report is the culmination of the first phase and is the "interim report" referred to in the project document.



## II. PROJECT METHOD

A survey was carried out of existing training and information materials used in drinking water and sanitation programmes. Attention was given to the primary health care context of such programmes.

In order to obtain materials for review, letters were sent to various agencies, and two research assistants travelled to Washington D.C., New York City, the Hague, Netherlands, and London, to collect materials and hold discussions. Materials were obtained from a variety of sources including WHO, UNESCO, UNICEF, CARE, Catholic Relief Services, Save the Children Fund, USAID/WASH Project, World Bank, the International Reference Center and from government agencies around the world. Agencies were asked their views on the use and usefulness of these materials.

Some difficulties were encountered in the collection of materials. Mail strikes in Peru impeded the flow of letters. Some agencies did not answer requests for information. A few materials were considered to be too costly to purchase only for purposes of review, notably the World Bank Information and Training Materials for Low-Cost Water Supply and Sanitation costing \$2500 for the printed materials and \$150 for the accompanying video cassette.

In the end more than three hundred pieces of material were collected, which represent probably only a fraction of what is available on the topic in the entire sector.

For purposes of this project, the term "socio-cultural aspects" was interpreted to mean those training and information materials used in watersupply and sanitation programmes that:

- a) explained and promoted the concept of community management of water and sanitation projects;
- b) assisted planners in developing culturally appropriate hygiene education materials; and
- c) explained the concept of social marketing and its usefulness for promoting community management, hygiene education, and appropriate low cost technologies.

In order to understand better the purpose of each item, all materials were classified according to the intended user. This proved more useful than classifying them by topic. In the end, all materials are for use by individuals or groups. They have different reading levels and interactive or teaching techniques, according to the intended audience. It was also easier to see

where gaps in training and information materials lie for different types of users when they were classified in this way. Four main categories of users were selected:

- a) decision-makers at higher levels,
- b) training of trainers,
- c) government of NGO paid extension workers in health and development, and
- d) community members, leaders, school teachers and others working at the community level, often unpaid, to bring about development.

Two more categories were created for videos, since many of them can be used for wide audiences.

Each material was read, each video was watched and a form was completed about each one.

### III. FINDINGS ON AVAILABILITY AND CONTENT OF MATERIALS

1. The researchers experienced some difficulty in obtaining materials by mail and thus they needed to travel to major cities of the world to collect them.
2. The current types of listings of materials produced by World Bank, IRC, IDRC and others were only partially adequate for identifying which types of materials may address "socio-cultural aspects" and for whom such materials may be intended.
3. There is no single clearing house for obtaining materials on socio-cultural aspects of water supply and sanitation.

As a result, there is no systematic mechanism for sharing materials developed for particular field projects with other similar projects at the field level within countries or between countries. (Hence we experienced difficulty in obtaining them.) Few items flow from the project level to the central level. In other cases, managers of field projects said they had no extra copies to send out or no budget to print more than the number they needed.

4. Publications rarely stated for whom the material is intended. Usually this could be understood after considerable study of the publication but was usually not discernable from the title and introductory pages. We frequently reclassified a publication two and three times before deciding upon its final resting place. This vagueness about for whom and for what a publication is intended serves to weaken its usefulness and may be seen as a weakness in the field as a whole.

5. There are materials for every type of user in the sector, but it appears that the great majority of materials produced are for planners and decision makers at the higher levels.

About ten times as many materials for planners and decision-makers as for trainers, extension workers and community leaders were sent to the project in response to the requests made. This may reflect the reality of the situation.

6. Agencies were unable to estimate the extent of use of their materials and their value to the field.
7. Few agencies interviewed have a concrete policy on taking into account socio-cultural factors in project development. Some agencies could not

say what policy their field offices were following but indicated that such policies may exist at the field level.

8. Guidelines and recommendations on the incorporation of "socio-cultural aspects" (a goal of this interim report) already exist if one defines socio-cultural aspects as implementing the concept of "community management", creating culturally relevant hygiene education materials through participatory techniques and the social marketing of water and sanitation products and hygienic behavior. The problem lies in identifying what reports are to be obtained and for whom they are intended. More guides to socio-cultural aspects do not need to be written; more understanding of and access to what exists is required.

The problem, in short, is that there is no single broad-based, up-to-date guide to what exists, for whom or what it is intended, where to get it, what it costs, and an assessment of its quality and usefulness. Some guides do exist, however.

Several agencies publish guides to their own publications, such as IRC, WHO, UNDP/World Bank, with some description included. Listings are usually done by author, title or topic.

AHRTAG publishes an excellent resource list on publications and materials for health education on diarrhoeal diseases (second edition published January 1990). Publications are arranged by topic, by type, including video, flannelgraphs and other visual teaching aids, and by country.

IRC published in 1987 a List of Basic Publications on Community Water Supply and Sanitation organized by users, by topic and by author, with descriptions of contents. This publication comes closest to providing information on all publications in the sector. Two user types are represented: Generalists (policy makers, decision makers and administrators) and Specialists (engineers, technicians and health specialists). It lists journals and newsletters and a glossary of commonly used expressions in the sector. It has a number of deficiencies, however. Notably absent are videos and other visual training and educational materials. Its presentation is academic, without photos of book covers or other illustrations that would further inform or interest potential users. In short, it is not a marketing tool but rather just a listing. While the bibliography is annotated, there is no analysis of the topic and the usefulness of some items over others in particular situations. Also notably absent are materials for extension workers and communities. This list would not be of interest, for example, to community leaders or school teachers who were searching for materials for local use.



The International Reference Centre in the Hague is attempting to address the problem of information flow and retrieval in the coming years by setting up a programme for Technical Information Exchange in Water Supply and Sanitation. The programme intends to assist countries in setting up computerized information centers where materials could be collected, stored and received. It plans to address the issue of most materials being available only in English and to be able to duplicate a limited amount of materials. To be completed on a country-by-country basis, this programme will take some time to complete.

IRC is currently producing an Inventory of Selected Training Materials in Water and Sanitation with annotations as to the content of materials. As an early draft of this inventory was not available to the consultant, its usefulness for meeting the needs we identified could not be ascertained.

The World Bank's International Training Network for Water and Waste Management trains and educates practicing engineers and field staff and informs decision-makers about low-cost appropriate water supply and sanitation, emphasizing socio-cultural and health considerations; and it supports the collection and dissemination of information. However, discussions with ITN professionals at the World Bank indicate that the Network does not address the basic problems encountered in this project of identifying, understanding and obtaining materials.

#### IV. SOCIO-CULTURAL ASPECTS AND THEIR IDENTITY IN NATIONAL WATER AND SANITATION PROGRAMMES

It is useful to review at this stage the meaning of "socio-cultural aspects" and where these aspects can be identified in national water and sanitation programmes.

Since the beginning of the Water and Sanitation Decade, there has been an awareness that water supply and sanitation projects should take into account socio-cultural factors. How to do this was often debated and even defining what it meant proved problematic.

At the beginning of the Decade, it was decided that communities should be asked to participate in the planning and design of their water and sanitation systems which would largely be implemented through a national program by government engineers. Various methods of surveying communities for relevant socio-cultural information were promoted, and the roles of anthropologists and sociologists were defined on project teams.

As the Decade proceeded, the concept of community participation evolved into the concept of "community management". With this concept, concern about socio-

cultural aspects began to dissolve and concern about how to involve communities, and particularly women, began to grow. Under the new philosophy of community management, government or NGO field staff, who may be engineers, sanitarians or technicians, are expected to be facilitators and support personnel, but communities are encouraged to direct their own development. Field staff or extension workers need to be trained as "facilitators", but not as social scientists. By definition under the concept of community management, communities will design projects and training materials that are socio-culturally appropriate because they are designing them for themselves.

Because communities are often not experienced with planning, managing and evaluating their own water supply and sanitation systems, and because women in many societies are not accustomed to the role of community decision-maker (or especially welcomed as decision-makers), new participatory techniques for involving communities and women have been developed and are being promoted. Participatory techniques are tools to enhance community participation in problem identification and solving and in the creation of materials for hygiene education. The PROWESS/UNDP project is one of the innovative leaders in this field.

A national ministry that wishes to adopt the concept of "community management", in theory, needs to undergo a series of steps to change their working methods. A very simplified model of these steps is given below. The "socio-cultural

aspects" of these steps are identified to the left with the kinds of inputs that are often required. These inputs are largely new methodologies that have been developed by the PROWESS Project and others involved in participatory methods, and by the new field of social marketing. (The model below is the consultant's view of how the change occurs in a national ministry from conventional working relationships to the new concept of community management and where the "socio-cultural aspects" lie. It does not necessarily represent a consensus in the field as a whole.)

## V. STEPS TO ACHIEVING COMMUNITY MANAGEMENT AS NATIONAL POLICY

### (Socio-Cultural Aspects Identified)

Step 1 Ministry takes the policy decision to adopt "community management" concept.

Step 2 Ministry defines approach and methods of working with communities.

S-C Aspect                      Train trainers who train extension workers on participatory methods of planning, implementation and evaluation  
(PROWESS-type input)

S-C Aspect                      Create social marketing programmes to:  
(Soc-Marketing input)

- educate the public and its own personnel about the concept of community management;
- create "demand" for water and sanitation "products", such as types of systems, hardware options, health, economic and social benefits.

**S-C Aspect**

(PROWESS-type input) Create hygiene education materials culturally appropriate for various ethnic groups through participatory methods

Create sample contracts for use between government and communities

**Step 3** New approach is field tested in pilot projects and lessons learned are used to refine all aspects of new programme.

**Step 4** Ministry creates courses for re-training all its personnel based on the new approach.

**Step 5** New approach is launched on a national scale but remains open and flexible to change and refinement; takes direction from communities. Government becomes "facilitator" and communities become "directors" of development.

The main problems facing countries wishing to adopt new policies of community management is how to obtain training and information materials that will assist them.

Materials produced by UN agencies and bilaterals, such as the USAID/WASH project, often are shared laterally with similar agencies, but rarely can such materials be found in government ministries and regional offices. In the consultant's experience, programmes and projects in many developing countries have a very limited library of materials, consisting usually of only a handful of items, mostly all in English. The extent of this problem is further verified by the difficulties this project faced in obtaining materials for review.



VI. ASSESSMENT OF SELECTED MATERIALS

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### A State-of-the-Art Brief Review

A sample of training and information materials available for the kinds of inputs identified in the above model (including the input that would be required initially to convince government officials that the concept of community management and participatory techniques should be adopted) are reviewed below. Taken as a whole, they represent the "guidelines" that exist in the field and that will be useful in the coming years.

The literature review below could serve as a prototype of the kind of catalogue that the sector requires:

- a) It lists publications by user-type: those intended for decision-makers, trainers, extension workers and community leaders and citizens.
- b) It begins with an introduction to the user about the types of materials listed.
- c) It contains only articles that are recommended because they have been judged to be more readable and useful than others.

- d) Each publication is reviewed for the reader as to its content, application and usefulness.
- e) It contains illustrations from some materials that may inform the reader more about its usefulness.

The sample was selected from those obtained by this project. There may be others recently published that, by chance, were not obtained by the project and thus not available to the consultant. This review, therefore, is a reflection more of the ideas than a review of all of the best materials available.

Annex A contains illustrations 1-19 mentioned in the text.

### Materials for Decision Makers

A great deal of recent literature exists for decision-makers and only a selection representing the main topics is included here. Three pieces concern the philosophy of community management, one publication addresses the issue of cost recovery, one on evaluation, one on women's participation, one on social marketing, one on primary school education and one on hygiene education. This type of literature is vast, reflecting the dynamic state of the art and

many agencies duplicate efforts in their publications. All, however, address the socio-cultural nature of the entire field and any decision-maker who had read this material should be informed about the socio-cultural aspects of the field.

1. Community Management of Water Supply in Developing Countries, by Dennis A. Rondinelli, Research Triangle Institute for WASH Project, Washington, D.C., 1990. This very important document is one of the latest additions to the concept of community management, and its main contribution is explaining how the process of community management can be institutionalized in developing countries. The report reviews experience with community management in rural and peri-urban communities and focuses on factors influencing the success of community management. It would be essential reading for central government officials considering the concept as a future operating principle and for donors and lenders who wish to assist in implementing the concept at the national level. Socio-cultural factors are not mentioned in the text because they are no longer an issue once communities direct their own development.
2. New Participatory Frameworks for the Design and Management of Sustainable Water Supply and Sanitation Projects, USAID/WASH and PROWESS/UNDP, 1987. This concept paper defines for decision-makers the meaning of community

participation where communities feel a sense of responsibility for their system. It emphasizes the shift in thinking that has to occur mainly at the highest levels to bring about change - how and why we have to change our methods of operation in the sector. The importance of the role of women is stressed.

3. Achieving Success in Community Water Supply and Sanitation Projects, WHO/ New Delhi, 1985. This document is an easy to read, delightfully illustrated guide to the concept of community participation and management. It has been the staple document for the last five years and is unlikely to lose its usefulness for some time to come. It is highly recommended.
4. What Price Water? User participation in paying for community-based water supply, by Christine van Wijk-Sijbesma, IRC Occasional Paper Series No 10, 1989. This book-length paper is aimed at providing a set of practical guidelines for project staff involved in planning water systems. It covers financing systems, such as community fund-raising, regular charges, water vending and taxation, as well as administration and accounting at the local level. While the focus is on small rural communities, some discussion of urban areas is included. It contains case examples from various countries. The socio-cultural dimension of financing is explained here. The book turns out to be a very academic treatment of the topic for highly educated

readers, and while intended for a wider audience, ends up classified with decision makers because of its mode of presentation.

5. Indonesia: Evaluating Community Management by Deepa Narayan-Parker, - PROWESS/UNDP, 1989. This short paper provides a good example of the basic methods and philosophy of PROWESS/UNDP project put into practice. Using a case study from Indonesia, it shows in practical terms how one project was evaluated using PROWESS methods. It provides the evaluation framework, the ways of measuring project achievement and the findings.
6. Women, Water and Sanitation or Counting Tomatoes as Well as Pumps, by Siri Melchior, PROWESS/UNDP, 1989. This discussion paper is about the role of women in water and sanitation. It is presented as a set of questions to which Ms. Melchior provides some of her insights based on working in over 1,000 communities. It could be used as a workshop or training discussion material or background reading for project planners and even extension workers with moderate skills in English.
7. Social Marketing and Water Supply and Sanitation: An Integrated Approach, by May Jacob and Robert Porter, WASH Field Report No 221, 1988. Social marketing is rather new in the water and sanitation sector even though it has been used with much success in the health sector for family planning,

immunization and oral rehydration. Its applicability to the water and sanitation sector is promising and overdue. This small publication introduces decision-makers to the topic and offers possibilities for its use. Expert consultants in social marketing are usually hired to design programs and the same would be true for water and sanitation. The steps involved in the marketing process are explained so that decision makers can interact meaningfully with experts.

8. Water Supply and Sanitation in Primary School Education in Developing Countries, IRC, 1988. While this publication is intended for use by management and technical staff for water supply in rural and urban fringe areas, its presentation lends it better to decision-makers. The paper is an analysis of over 200 teaching and reference materials on school hygiene education in developing countries. It suggests measures for the strengthening and improvement of hygiene education. Its appendices provide overviews of methods used in 17 countries of Asia, Africa, Latin America and the Caribbean. It contains examples of teaching materials and a list of organizations that can be contacted for further information.
9. Hygiene Education in Water Supply and Sanitation Programmes, IRC, 1988. This booklet presents an overview of current knowledge and experience in hygiene education. Its aim is not only to provide a wide audience with



the state-of-the-art but also to stimulate developments in hygiene education and further research on the topic. It is a useful reference manual and bibliography for persons who have access to a large library. It will be best used by researchers as a reference work and by project designers as sensitizing material. It contains a few photos and illustrations.

### Materials for Training of Trainers

Materials on the training of trainers and extension workers are often difficult to distinguish from materials intended to train extension or field personnel directly and from materials intended both for training and field use by workers. The publications reviewed here are those that most clearly seem to be for training purposes only and not field use after training, with the exception of the last one on training to make visual aids. However, this last one would, probably, in the end, not be used at the field level because of a higher reading level and relative complexity.

10. Tools for Community Participation: A Manual for Training Trainers in Participatory Techniques, PROWWES/UNDP, 1990, by Lyra Srinivasan (in English and being translated into French, Spanish and Portuguese). This manual explains methods of participatory teaching and learning developed by the PROWESS project.

A video, reviewed below, accompanies the manual. The manual is intended for anyone wanting to hold a workshop to teach the process and methods. It explains how to organize a workshop and it gives sample workshop activities. It is intended that trainers of extension workers can use these methods to teach modern concepts of community participation and develop teaching aids locally. Its presentation is fairly simple to understand and is well-illustrated. (Illustration 1).

11. A Workshop Design for Community Participation: Vol I. Starting Work with Communities and Vol II. Planning and Implementing Sustainable Projects. USAID/WASH Project, 1988. These two workshop manuals provide "canned" two-week training programs. Although based mostly on reading a story and leading a discussion, this classroom-oriented workshop does provide for some field activities. The workshop does not teach participatory techniques such as using flexiflans, pocket charts and the like found in the PROWESS training materials and thus is less interactive for the participants. The advantage of these manuals is their ease of use; anyone who can read English could run a workshop from these materials. Even the amount of time scheduled for each activity is suggested. The bulk of the manual is for the trainer and the last few pages of the manual are to be photocopied and distributed to participants during the course of the workshop as exercises.

12. Health Care Together: Training Exercises for Health Workers in Community Based Programmes, Teaching Aids at Low Cost, 1987. This training course develops the health worker's ability to work with communities in order to bring about "social preparation" before the implementation of any kind of development programme. It encourages the concept of community participation but it does not reach the concept of community management as it is now conceived for the sector. It strengthens skills of community-based health workers in communications and skills that enhance community participation in developing a community health programme. The skills addressed in this training course can easily be applied to the water and sanitation sector. (Illustration 2).
13. Teaching and Learning with Visual Aids: A Resource Manual for Community Health Workers, Health Trainers and Family Planning Workers in Africa and the Middle East, University of North Carolina Program for International Training in Health/TALC, 1987. This manual provides a participatory approach to the production of visual aids and thus should assist in producing culturally appropriate teaching materials. Although the book is intended for health trainers and community workers, it clearly requires a great deal of study and some prior sophistication to implement the ideas contained therein. It may be beyond the capability of many community workers to apply. Nonetheless the manual has excellent points. It contains both

teaching exercises and how to make the visual aids to accompany the lessons using ideas and reactions of the learners. It is a complete "how to" book that would be an important resource to have on hand for designers of hygiene education visual aids for low budget field projects. This work can provide many ideas for the water and sanitation sector. (Illustration 3).

14. A Training Guide on Hygiene Education, USAID/WASH Project, 1990. This manual provides a completely packaged 11-day workshop for health workers that anyone can use. It is easy to understand, provides all the lesson plans and reflects a modern philosophy for hygiene education. It requires two trainers and students with at least secondary education and a prior knowledge of hygiene education. It is intended to teach participants how to develop the capacity of the community to carry out hygiene activities and to develop the skills to sustain their own hygiene education program by themselves. The manual's drawback is that the producers did not draw upon the rich literature on interactive and participatory teaching and learning. The lessons are based upon stories, discussions and field observations rather than learning to use flexiflans, pocket charts and other innovative materials that have been developed for the sector. After the training workshop is over, it does not appear that the field workers would have the participatory tools to apply the concepts at the community level.

### Manuals for Extension Workers

The material for extension workers is a rich one and thus five are reviewed here. All reflect the concepts of community participation, if not community management. Four of them are basically field manuals on health and hygiene education with elements on water supply and sanitation, one of which is for water and sanitation only. The other one is a tool for evaluating development projects of any type. Any could serve as guides as to how field workers should work in communities, the types of things they can teach, good teaching methods, and the value of participatory techniques in whatever one wants to accomplish. The Nepal field manual is even a good model of how a field manual should be bound together, as a flexible ever-changing tool.

15. "Making the Links" Guidelines for Hygiene Education in Community Water Supply and Sanitation, IRC, 1990. The intention of this field manual is to improve hygiene behaviour at the community level with special attention to public standpost water supplies. It consists of four chapters on promoting health in the community, preventing water and sanitation related diseases, disease transmission routes and hygiene education audio-visual aids. It is illustrated with nice line drawings and would be a useful basic guide for anyone interested in the methods of hygiene education, from project designers to community workers. It could be understood by

anyone with moderate English skills and would be easy to translate into other languages. Its emphatic, down-to-earth approach makes it highly recommended.

16. Helping Health Workers Learn: A book of methods, aids and ideas for instructors at the village level. The Hesperian Foundation, Palo Alto, California, 1982, by David Werner and Bill Bower. This manual is an extremely innovative approach to teaching health workers to work at the community level, to be good communicators and teachers, to identify the actual health needs of the community and their underlying social causes and to take appropriate political action, when necessary, to bring about change. It encourages and teaches participatory methods of learning. This well-illustrated book also contains practical medical information and demystifies diseases. In addition to being a textbook it is also intended as a field manual for health workers, and while quite dense, is worth the effort it takes to read it. It is a revolutionary book and can serve as a model in the sector for preparing extension workers in water and sanitation. (Illustration 4).
17. Manual for Field Workers, UNICEF/UNFPA Nepal, 1985. This is by far one of the best training and field use manuals for extension workers available. First, its compilation into a three-ring binder with a sturdy plastic cover and colored subject tabs speak of its flexibility and utility. Whole units

can be added, subtracted and removed and updated as needed. The manual is very easy to read with large print (good in areas where eyeglasses are not common) and cheerfully illustrated. Topics covered are working and planning with communities, reporting, and maternal and child health. Although there is little on water supply and sanitation, more could be easily added as programs expand to underserved areas. The manual is an excellent model for the kind of field manual required in the sector. (Illustration 5).

18. Community Water Supply: A community participation training element for SPWP user beneficiaries, UNDP/ILO, 1987. This manual is intended for any type of field worker in water supply and sanitation. It is probably the most specific manual of the group to the water and sanitation sector. The manual is fairly culture-neutral and could be adapted to most any cultural setting. The introduction to the book states that "it is the purpose of these materials to provide users with the information and understanding that will give the incentive for necessary behavioural changes". It goes beyond that stated purpose and addresses not only needs but also solutions and responsibilities of the community. While the guide covers most of the topics on community participation, what is notably lacking is attention to financing the capital and recurrent costs of the system. An exercise at the end begins to address the issue without any discussion of fund raising methods. Although a recent publication, the guide could use some

updating in the areas of the concept of community management and various participatory methods, other than group discussion. (Illustration 6).

19. Partners in Evaluation: Evaluating Development and Community Programmes with Participants by Marie-Therese Feuerstein, MacMillan Pub./TALC, 1986. This excellent book describes very clearly and simply the process of participatory evaluation of a development project from the planning stage through to the use of the results. It provides useful examples and entertaining illustrations for every point made. It is a good, complete manual for participatory evaluation. It is suitable not only for project staff but also for community leaders and active citizens. It is perfectly compatible with the concept of community management for the water and sanitation sector (Illustration 7).

#### Materials for Communities and School Teachers

Six publications for community members serve as outstanding models for the water and sanitation sector. The first five were developed for specific local purposes, are culturally relevant for the intended users, and inexpensive to produce. The sixth one, produced by Associated Country Women of the World, is an example of a technical manual that could be adapted to a local situation



or used by anyone literate in English. These six were selected because they successfully combine messages for attitude change with messages for action. This was judged to be the best combination, as messages for attitude change alone, found in the majority of the materials reviewed, seemed inadequate. Also, a positive element found in the materials from Latin America, the first three reviewed here, is their humor. Humor is a good way to break through attitudinal barriers and may work just as well outside Latin America.

20. ¿Qué Hacer con las Excretas? (in Spanish), Ministry of Health of Nicaragua, 1981. This cartoon story is intended to promote the building and use of latrines. Its humor makes for irresistible reading, and its technical information is complete enough for anyone to build a latrine (Illustration 8).
21. Agua para los Pobladores (in Spanish), Centro de Estudios de la Realidad Económica y Social--CERES, Cochabamba, Bolivia. A cartoon novella, this small booklet describes and illustrates the manner in which an urban fringe (squatter) community, with the help of a revolving fund, succeeded in (1) creating an organizational capacity, (2) winning the battle for water - against local bureaucracy, (3) finding a dialogue with an academic research centre (CERES), and (4) proving that the experience can be repeated in any organized community. (Illustration 9).

22. And They Lived Healthily Ever After (in English and Spanish), Ministry of Health of Belize and CARE, 1987. This black and white "foto-novella", a very popular medium in Central and South America, contains a story intended to change attitudes about sanitation and promote the building and use of latrines. The story explains the concept of community organization and self-management to bring about the desired changes. It shows community members how to link with government agencies to obtain health and technical information. (Illustration 10).
23. Let Us Promote Sanitation: A Sanitation Handbook for Bharat Scout and Guide Leaders, Water and Environmental Section of UNICEF/India, 1987. This excellent booklet is intended for any community leader who wants to bring about change. While it does not develop the concept of community organization and management, it does explain why safe water supply and good sanitation are so important to health and the technical solutions to bring about change. It is well illustrated with colored drawings so that nearly anyone who can read English could implement the technologies described. While designed for use in India, it could be adapted for other cultures. (Illustration 11).

24. Buku Pegangan Kader: Penyuluhan Kesehatan Lingkungan (Manual for Cadres on Communication and Environmental Health) (in Indonesian only), UNICEF and the Government of Indonesia, 1987. This booklet is intended for use by community volunteers called "kadres" who are mostly women and who implement many of the government's health programs at the community level. The booklet is quite similar in style to the Scouts Guide (above) produced by UNICEF in India in that it is specifically designed to teach about water, sanitation and health. There are some differences. The manual begins with a discussion of community organization and participation to bring about positive changes. Nearly the entire text is line drawings with a few words of explanation beneath each picture. It would be extremely easy for someone with basic literacy to use. The manual is accompanied by a set of colorful cartoon leaflets, presumably intended for distribution to families. It is a beautifully produced (and perhaps costly) set of materials. (Illustration 12).
25. Water and Sanitation for All: Water and Sanitation for Villages - A Short Guide to Possibilities, the Associated Country Women of the World, by Elizabeth O'Kelly. This small booklet is intended for community leaders. The book could be used by anyone wanting a brief guide to the low cost water and sanitation sector. It contains many excellent line drawings illustrating all the various hardware options. The information given is not sufficient for carrying out

all techniques presented, but some are easy enough to be built even by a mechanically-oriented villager. The language in this booklet requires that the reader be highly literate in English, but it could be even further simplified and adapted to a variety of local cultures. (Illustration 13).

The three examples of teaching materials for school teachers vary widely in presentation but each has its merit. The first, from Gambia, is clearly the best model we located for developing countries. The second one, on guinea worm, is well organized, interesting and also a good model. The third, produced by the American Waterworks Association, is highly interactive and imaginative but would require adaptation for developing countries.

26. Learning About Water: Lessons in Water Sanitation for Primary School and Adult Groups, Health Education Unit of the Government of Gambia, 1984. This extremely low-cost mimeographed publication contains innovative and fun techniques for learning about water and sanitation and is a truly excellent teaching manual. It stresses learning through active participation and dramatic presentations. It is well organized and could be understood by almost any teacher with even a basic literacy. Its particular merit lies in the outlines of the eight lessons. Each lesson contains an enjoyable activity using materials that are easy to find even in a subsistence style rural setting. Also included are good suggestions for leading discussions. (Illustration 14).

27. Teaching About Guinea Worm Prevention: A Manual for Secondary School Teachers, USAID/WASH Project, 1988. This manual provides a very good and clear model of how to teach about a water-related disease. The guide is intended for training secondary school teachers who teach hygiene education. It was originally prepared as part of a program on Family Life Education in Nigeria, but it can be adapted by teachers in other countries. What makes this manual good is that it is well organized and clear. Its drawback is that the teaching method is based only on story-telling followed by discussions. Teachers are not given ideas about activities children could carry out in their own communities to learn more about the disease. (Illustration 15).
28. The Story of Water, The American Water Works Association, 1984. This beautifully designed and illustrated teacher's classroom teaching guide is intended for American students. It is produced for three levels of students: primary grades 1-3, intermediate grades 4-6 and advanced grades 7-9. This highly interactive guide has many activity pages for teachers to photocopy and hand out to students and many suggestions for field trips and experiments. The drawback of the guide for developing countries is that it does not have a health focus. The stress is on water as a resource that is not to be wasted. It teaches the hydrological cycle, properties of water, water treatment for cities and water conservation. The guide

for the upper grades sensitizes students to water supply problems faced by developing countries including water-related diseases. It is oriented toward schools that have photocopy machines, paper, crayons and resources for field trips, in short, for Western industrial countries. These teaching guides contain ideas for interactive teaching techniques about water that may be adapted to various developing country situations. (Illustration 16).

### Visual Aids

A great harvest of visual materials, mainly posters and flip charts for teaching purposes, have been produced during the Decade, and this project was able to collect only a sample of them. Four were selected for review because they are judged to be good models for materials to be produced in the future. They emphasize not only attitudinal change but also the action to be taken. Many materials had the flaw of containing too much information on the poster or flip chart. The ones selected had very clear and simple messages.

29. Prevention of Diarrhoea. C.M.C. Hospital, Vellore, India, is a flip chart with a clear message. It shows how diarrhoea is transmitted by vectors and behaviours and how to prevent it. How to use the flip chart effectively and what is to be said about each picture is printed on the reverse sides of the cards. (Illustration 17 - 2 cards).

30. The Kerala Water Authority has produced something between a flip chart and a poster. The series of ten half-size posters are probably intended to be attached to a wall for discussion purposes. However, each one stands on its own nicely and carries a visual message. It appears to be a versatile material, either for leading discussions or as a passive teaching aid. Some of its drawings are quite innovative, such as one showing drops of water falling into a pair of hands as being as precious as diamonds. (Illustration 18 - 3 posters).
31. Air Yang Bersih Membuat Anak Sehat dan Cerdas, Ministry of Health of Indonesia and UNICEF, is an attractive poster with a clear and simple message: clean water coming from a handpump is good for your children's health. Healthy, happy children are pictured at play as clean water flows from a handpump. (Illustration 19).
32. Keluarga Sejahtera Berkat Air Bersih (A Healthy Family Because of Clean Water) (in Indonesian) Ministry of Health of Indonesia and UNICEF, 1989. This free-standing flip chart promotes the concept of the importance of clean water for health, community participation with government workers to bring about change, types of low cost water systems to choose from, with emphasis upon the handpump. Siting, building, using, maintaining and repairing a handpump are all explained. It is an excellent material

for introducing the topic to a community and enhancing attitudinal change. (Illustration 20).

### Videos

The four videos selected for review reflect very well the current philosophy of community management, women's participation, and hygiene education.

33. Prescription for Health (in English), produced by IDRC, teaches the germ theory of disease, disease transmission routes and the importance of protected wells and well-sited latrines. It is very well illustrated, easy to follow and equally good for decision-makers and communities. Its appeal to such a wide audience makes this an excellent teaching resource.
34. A Handle on Health (in English), also produced by IDRC, describes advances in handpump technology and promotes the usefulness of the handpump and its adaptability to various local situations. The film also emphasizes the important aspect of community participation and management in the selection and maintenance of handpumps and the very vital role of women in this process. It appears to be intended for government and local decision-makers, for NGOs and others in leadership positions who want to work at the community level.



35. The Water of Ayole (1988, in English), produced by the USAID/WASH project, teaches the basic philosophy of community management, the role of extension workers, the role of women, and exposes why former top-down approaches failed and community management works. It emphasizes that community organizations and management of water supply and sanitation leads to other development activities. It is intended for decision-makers and extension workers and may even be useful at the community level.
36. Participatory Training for Water and Sanitation Projects (1988, in French and English) was produced by the PROWWESS/UNDP project to explain PROWWESS methods of training for trainers of extension workers to bring about community management and create culturally relevant materials for teaching. It illustrates some of the techniques and how these techniques work to involve trainers and communities in identifying their problems. The film is promotional rather than instructive and is useful for sensitizing decision-makers to the concept of participatory methods and the value of PROWWESS workshops.

## VII. SOCIO-CULTURAL CONSIDERATION IN TRAINING AND INFORMATION MATERIAL DESIGN\*

In preceding chapters, the main emphasis has been put on how socio-cultural consideration should be integrated in water and sanitation project design. This chapter instead will concentrate exclusively on basic concepts and guidelines for the design of socio-culturally appropriate training and information materials in water supply and sanitation programmes, specially in the context of hygiene education. Also, the totality of publications on how to design training materials, collected by INT/89/044 UNDP/UNESCO, will be reviewed and assessed.

In localizing the socio-cultural consideration in training and information material design, it is useful to start with the basic concepts of communication theory.

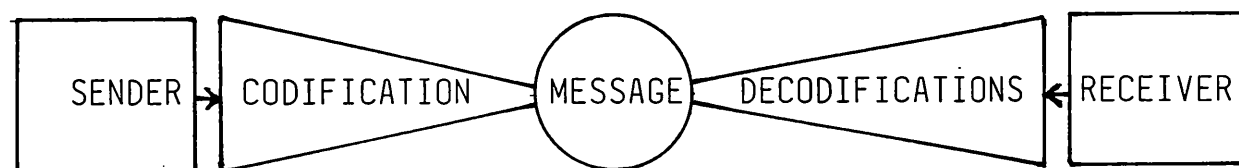
Training material design and use are parts of social communication, the basic actors of which are a) the source of information or sender, b) the receiver or the public, c) the message and d) the medium used, be it printed material, audiovisual, radio, TV etc.

The sender gives a form to the message. This form is an ensemble of signs (representations), and the process of giving form to a message is called "codification".

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\* This chapter was written by Maaria Seppanen

On the other hand, the receiver or the public has to decodify, or translate the message in order to understand it. These two processes can be visualized in the following way:



(Araujo, Helio V. de. Comunicacao social. CAEN - UNICEF. Natal 1976).

The intervening factors in this scheme are called "interference", or barriers of communication, like bad quality of sound or image, hunger or hurry of the public or an interruption during the communication process.

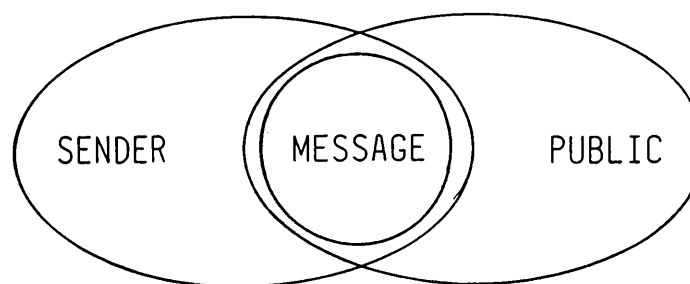
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SENDER    CODIFICATION    MESSAGE    DECODIFICATIONS    RECEIVER

(Araujo, Helio V. de. Comunicacao social. CAEN - UNICEF. Natal 1976).

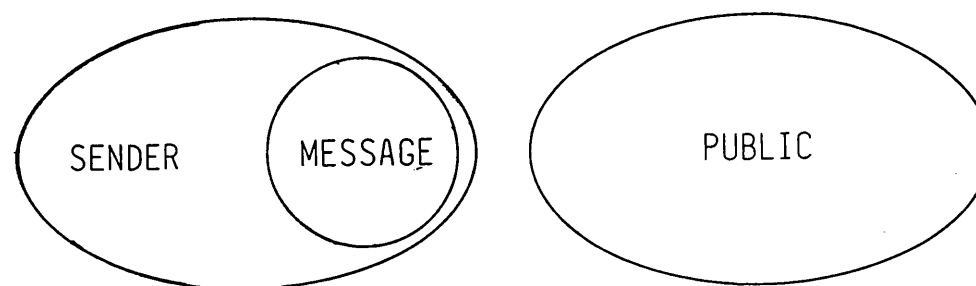
The intervening factors in this scheme are called "interference", or barriers of communication, like bad quality of sound or image, hunger or hurry of the public or an interruption during the communication process.

It is important to take into account that the public will understand the communication only if it is easy to decodify according to their own criteria, which in its turn depends on the previous experience the public have. This is exactly where the socio-cultural sphere is situated. The more overlapping the fields of experience of the sender and the public, the more efficient the communication. Like this:



(idem)

And if there is not any common field of experience, the communication will be impossible:



(idem)

It is important to take into account that the public will understand the communication only if it is easy to decodify according to their own criteria, which in its turn depends on the previous experience the public have. This is exactly where the socio-cultural sphere is situated. The more overlapping the fields of experience of the sender and the public, the more efficient the communication. Like this:

SENDER

MESSAGE

PUBLIC

(idem)

And if there is not any common field of experience, the communication will be impossible:

SENDER

MESSAGE

PUBLIC

(idem)

In fact, there isn't anything new in this. Every person who has written an article or given a speech, has had to think about how to make his/her message intelligible to the intended public.

The only reason to present the scheme of communication here is the way it permits to question and tentatively define the so-called socio-cultural aspects or factors: they are all the components of the field of experience of both the sender of the message and the public (in groups or individuals): traditions, knowledge, beliefs, habits, etc. But it should not be forgotten that in the antropological sense, also the message and the medium are cultural: the most important message in all hygiene education of water supply and sanitation programmes is, in one way or another, the germ and theory, a product of modern clinical medicine consolidated during European Enlightenment. The same applies to the media: they are culturally defined as instruments, representations and forms of interpersonal communication.

As a conclusion of the reflections above, it is more practical and operational and less deterministic to talk about "socio-cultural appropriateness" than about socio-cultural factors. The latter have become almost an academic question of definitions (what are the socio-cultural factors? - is it possible to embrace the totality of the field of experience of a group of persons and of all its

members under one rubric?) and helped us only to make lists of beliefs, traditions, landscape elements, social relationships and kinship which rarely have been able to go beyond the trivial, e.g. how to draw the dress the people wear.

Instead, the term socio-cultural appropriateness allows for a greater flexibility and operativeness because it takes into account the symbols or representations of the fields of experience of the "target" population and the sender of the message (process of codification-decodification) and thus recognized the need and capacity for creativity every human culture possesses: no one human group or culture has ever been static and without integrating new elements, not even the "sender culture". The socio-cultural as a sphere of human life is too complicated to be reduced to some factors or aspects - according to the author of these lines also not very useful.

There are many variations to the basic scheme of communication presented above. Different "schools" or paradigms have tried to resolve the problem of socio-cultural appropriateness (i.e. the overlapping or shared ways to codify and decodify) in different ways. In water supply and sanitation programmes and



training for hygiene the first approach during the early years of the International Decade was to gather socio-cultural data in order to draw training and information materials as true as possible to the reality of the "target" population. The concern about socio-cultural appropriateness embraced in the first place only the culture on the "target" community: the method was to acquire maximum amount of data through surveys and observation and then use this data to design training materials. In terms of the communication theory presented above, the sender of the message researched the public in order to use a type of codification intelligible to the public in the decodification process.

The other way to face the problem of socio-cultural appropriateness in water supply and sanitation programmes came with the participatory approach which later evolved into the community management strategy. The solution was to try to fuse the sender and the public in one: if the people design training materials for themselves, socio-cultural aspects and socio-cultural appropriateness cease to present themselves as a problem. Socio-cultural appropriateness is supposedly given automatically, because the processes of codification and decodification are identical, i.e. done by the very same persons.

## VII. CONCLUSIONS AND RECOMMENDATIONS

The main conclusions of this review on socio-cultural aspects of training and information materials are:

1. Training and information materials on community management, hygiene education and social marketing are difficult to identify and obtain because of the lack of comprehensive guide to the literature. Such guides that do exist usually do not cover all types of materials, but rather list titles of publications intended for decision-makers and specialists. What is needed is a guide to the entire field of materials that can be used by anyone interested in the field.
2. Good examples of materials for training of trainers, extension workers and communities exist, although all of them may not be specifically on the topic of community water supply and sanitation. These examples can be used to develop culturally appropriate materials for local use.

For the community, particularly appealing are cartoon-novellas and foto-novellas employing humor, such as those produced in Latin America. Foto-novellas are easy and inexpensive to produce. By taking photos of local people and their communities and filling in the dialogue with "bubbles", they are easily made to be culturally appropriate.

Flip charts and posters, such as ones created in Indonesia and India, contain simple messages and are easy for field workers to use.

Radio and T.V. are excellent media for social marketing messages, where possible, and good guidelines to social marketing techniques exist in the WASH publication as well as in many other excellent publications.

For extension workers, the Nepal field worker manual is an outstanding example of an effective and flexible tool. The other manuals reviewed are equally good for content and philosophy of working at the community level.

For the training of trainers, the PROWESS material stand out as being the most interactive and participatory, giving those trained the tools to pass on in the arts of flexiflans, pocket charts and other creative methods for encouraging community and women's participation.

In general, the more participatory, socially neutral and interactive a teaching method is, the more effective it will be. The PROWESS approach has the advantage of being all three. Materials developed for local use employing participatory tools will have the greatest likelihood of being socio-culturally relevant.

The use of videos, where possible, is an effective teaching tool. Since TVs and VCRs are becoming more popular and available worldwide, greater attention should be paid to developing good videos for the sector.

Videos and social marketing messages on radio, TV, and through posters and leaflets, while educational, are passive and serve to support the more interactive methods.

All educational materials on water supply and sanitation, whether for communities, teachers, extension workers, trainers or decision-makers need to be pre-tested on sample audiences and revised according to the results. Experts in social marketing and the development of educational materials should be employed whenever possible to carry out research, development, pre-testing and finalizing the finished product. An exception to this would be educational materials designed by communities through participatory methods for self-use.

3. Most materials available are in English. More attention needs to be paid to translating materials into other major languages.
4. A major gap was noted in the materials collected on water supply and sanitation for urban and peri-urban areas. Very probably, agencies working

in the urban sector, such as World Bank, Asian Development Bank and others do have well-developed philosophies concerning community management, cost-recovery, hygiene education and other aspects. Materials on these issues need to be gathered and included in a user's guide to the literature.

5. The literature does not provide good models for government agencies to change in order to facilitate the concept of community management and the creation of culturally appropriate educational materials. The model presented in this paper (above) is only the view of the consultant. Many other professionals, no doubt, work under other personal philosophies.

The main recommendations from this review are:

1. The second phase of this project should aim to produce a user's guide to the best training and information materials on the concept of community management in all its phases: planning, design, implementation, cost recovery, maintenance and evaluation; on culturally appropriate hygiene education and on social marketing. It should be presented in the form of a catalogue that could be purchased at low cost. Contained in the catalogue are only the most useful and obtainable materials, not every material. Thus, some judgment would have to be made as to what should be included.

The catalogue should be viewed as a marketing tool. Materials should be divided into categories according to intended users and each material should be described and the price given. Illustrations and quotations from materials should be included to further inform readers about its contents. It should include journals and newsletters, videos, and visual aids. Addresses of publishers should be included at the end. Only easily obtainable material should be listed. The catalogue should be equally readable and useful for decision-makers at the highest levels of governments or NGOs and community leaders who want to obtain materials for their own project.

The catalogue should feature materials that will be useful "Beyond the Decade". During the period of the Decade for water supply and sanitation, the field changed and became more refined. The philosophy of "community participation" has changed to "community management". We no longer ask communities to help design, decide, maintain, etc., but rather to take charge of their own project and use government workers as resources to help meet their own objectives. Not all materials on community participation reflect this newer view. Likewise, social marketing for water and sanitation is in its infancy and will no doubt change rapidly during the nineties. This catalogue needs to reflect current views and needs to change with the times, omitting materials no longer so useful and replacing them with state-of-the-art materials.

Given this circumstance, the place for the production and continued updating of this catalogue must allow for independent judgment of materials. Where the second phase of this project should sit is a major consideration.

2. The second phase of the project should also address what appear to be certain deficiencies in materials. Most materials are produced in English only. Either publishers should be encouraged to have their materials translated into French, Spanish, Portuguese, and Arabic, or they should give the rights to others to do so. Some smaller materials could be translated by the project and copied for distribution.
3. The second phase could also address the problem of lack of availability of particularly good items. In some cases, projects have produced very good materials for communities, but the project does not have the budget to send to all who request it. The second phase could take on this role and be a distribution point for some selected materials.
4. The second phase could address the problem of what appears to be the lack of materials on community management, hygiene education and social marketing for urban and peri-urban areas. These materials need to be included in the suggested catalogue.

5. The second phase could also begin the development of working models for government agencies to begin the process of change from top-down planning to community-management planning and execution of projects. Many countries have already made this transition at the central or regional levels, while other countries are still struggling with the concept. The second phase could take on "case studies" to document government agencies where successful change has occurred and begin to build models for the sector that could be examined by other countries.



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ILLUSTRATIONS



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Illustration 18. Flip chart/poster on water use. Kerala Water Authority, India.

Illustration 19. Poster on clean water-healthy chld. Ministry of Health, Indonesia/UNICEF-Indonesia.

Illustration 20. Free-standing flip chart on clean water-healthy family. Ministry of Health, Indonesia/UNICEF-Indonesia.



Illustration 1

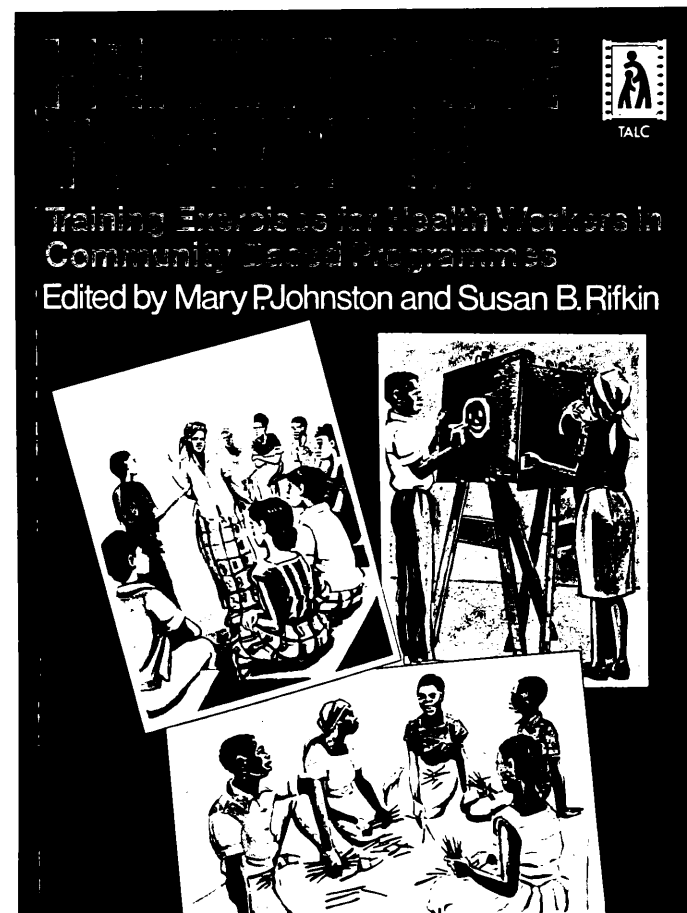


Illustration 2

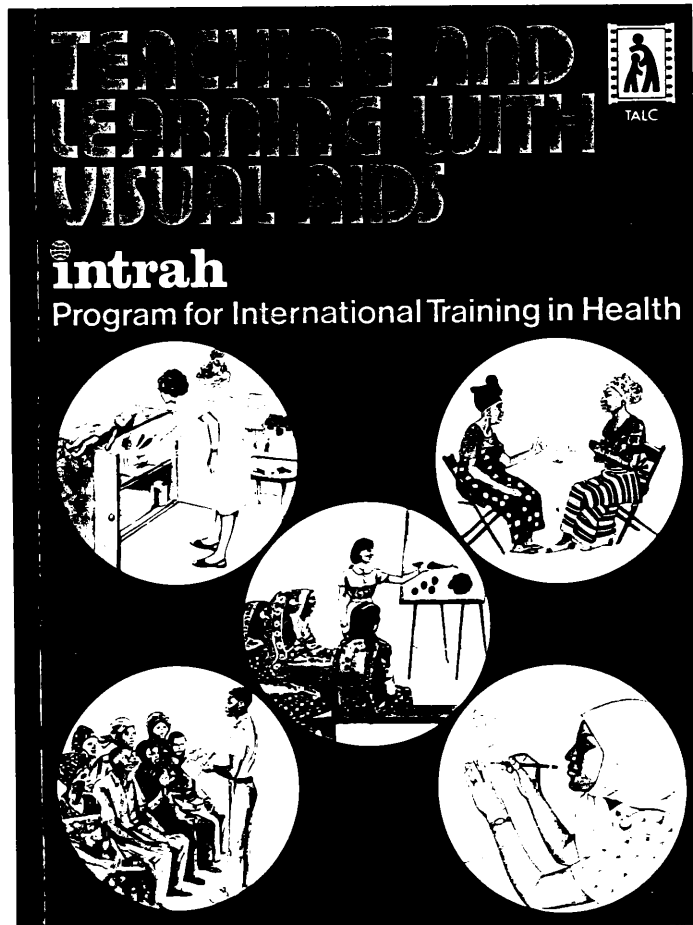


Illustration 3

A book of methods, aids,  
and ideas for instructors  
at the village level

# Helping Health Workers Learn

David Werner and Bill Bower



Illustration 4

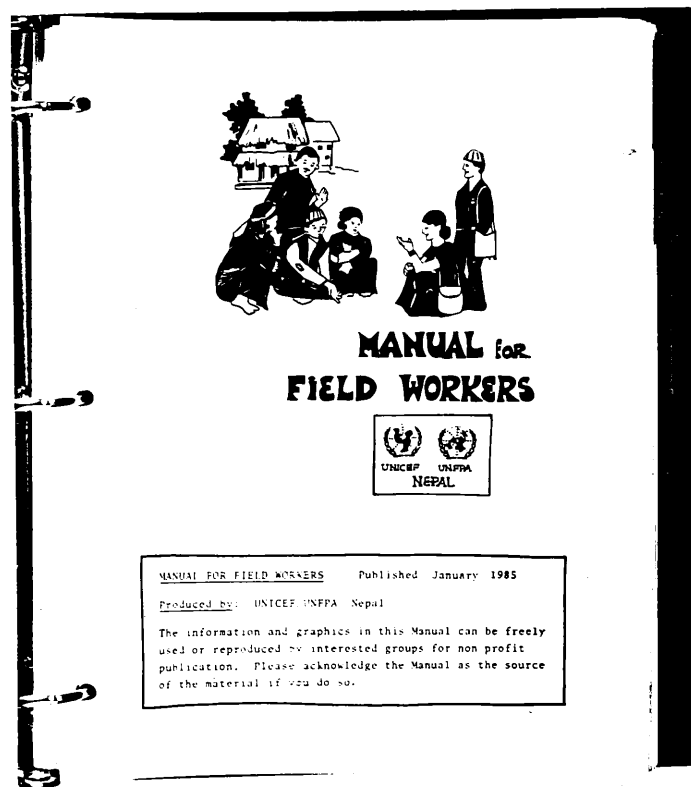


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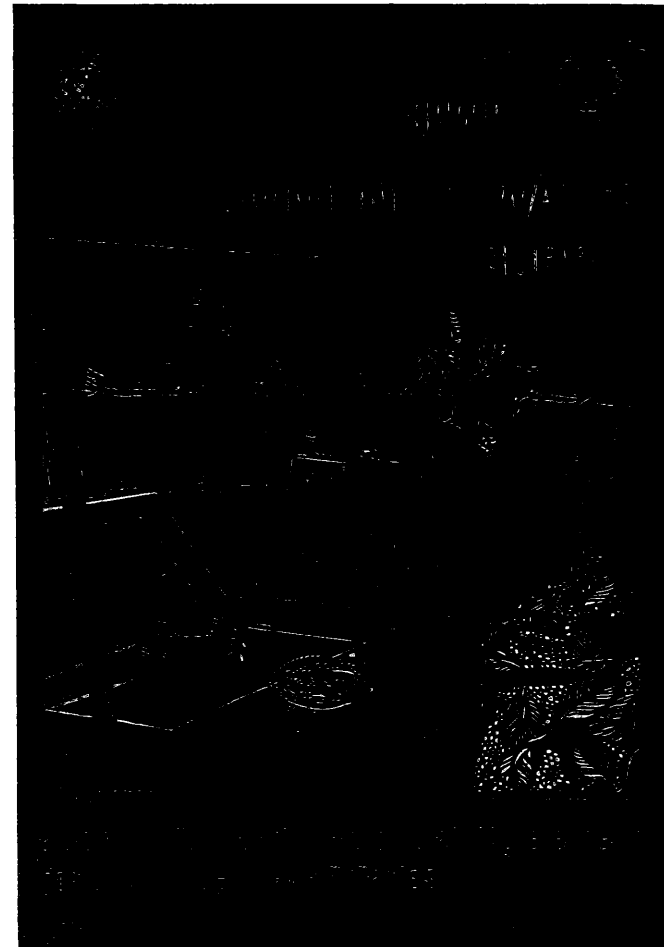


Illustration 6

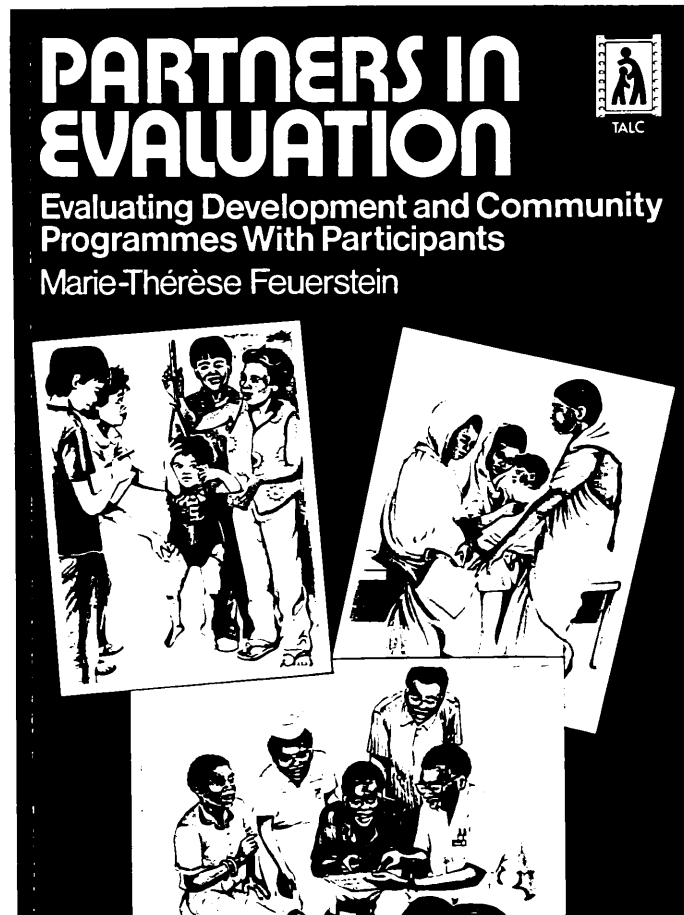


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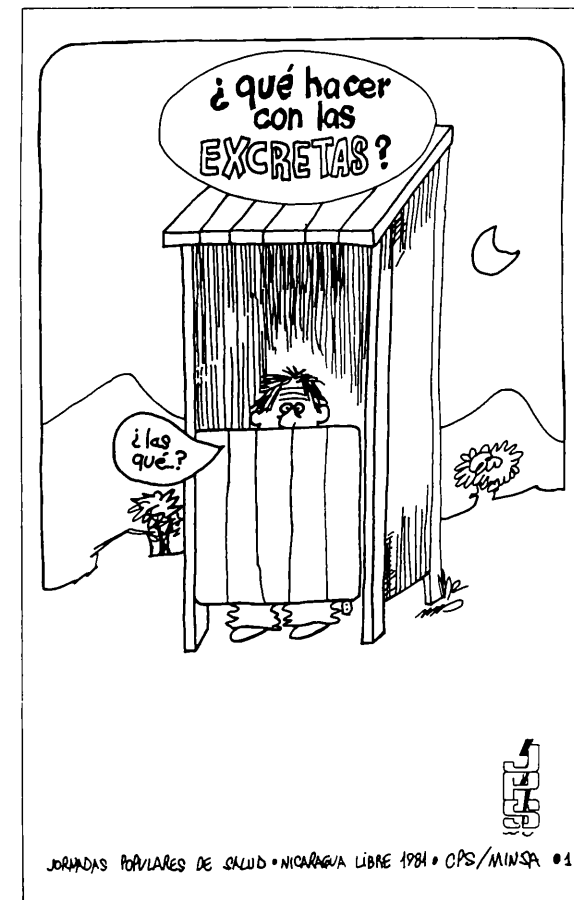


Illustration 8

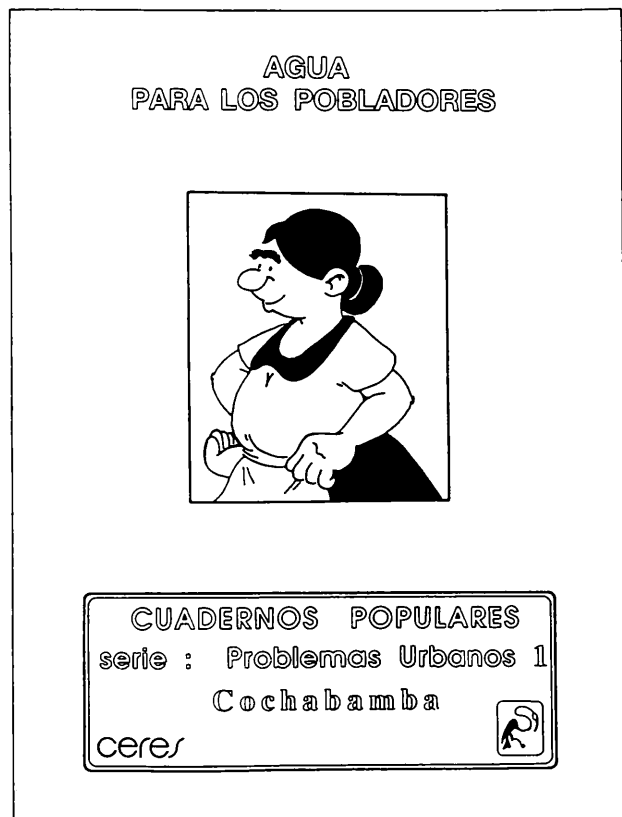


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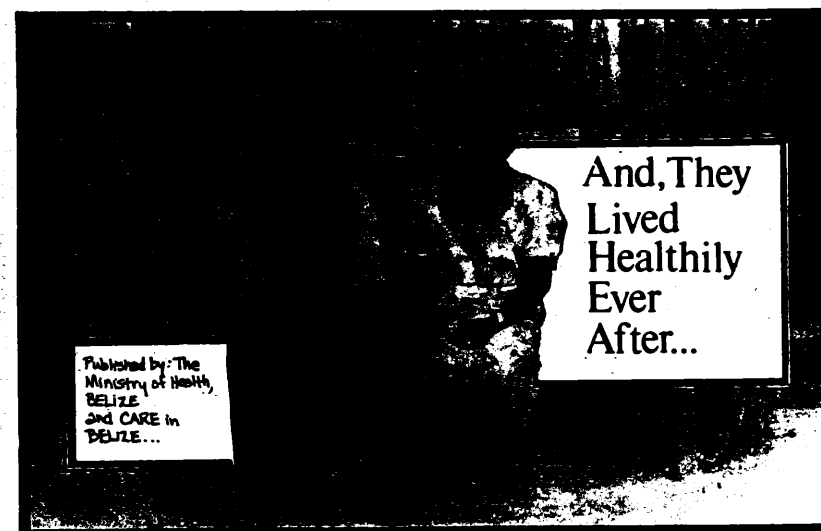


Illustration 10





LET US  
PROMOTE  
**SANITATION**



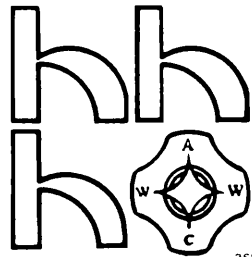
Illustration 11



Illustration 12

no. 4

## Water & Sanitation for All



Elizabeth O'Kelly

associated country women of the world

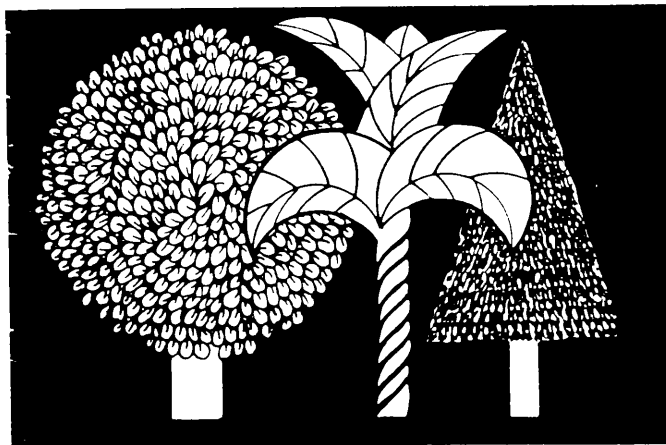
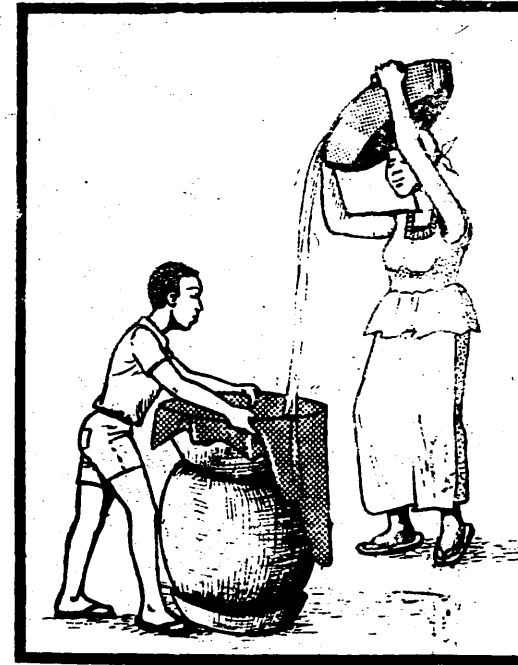


Illustration 13

## LEARNING ABOUT WATER



LESSONS IN WATER SANITATION  
FOR PRIMARY SCHOOL AND ADULT GROUPS

Illustration 14



WATER AND SANITATION  
FOR HEALTH PROJECT

Organized by  
WHO and Associates  
Sponsored by the U.S. Agency  
for International Development

1611 N. Kent Street, Room 1001  
Arlington, VA 22209-2111 USA

Telephone: (703) 243-8200  
Fax: (703) 525-9937  
Telex: WASH 54522  
Cable Address: WASHA1D

The WASH Project is managed  
by Camp Dresser & McKee  
International, Inc. Principal  
cooperating institutions and  
subcontractors are: Associates  
in Rural Development, Inc.  
International Science and  
Technology Institute, Inc.  
Research Triangle Institute  
Training Resources Group  
University of North Carolina  
at Chapel Hill

# TEACHING ABOUT GUINEA WORM PREVENTION: A MANUAL FOR SECONDARY SCHOOL TEACHERS

WASH FIELD REPORT NO. 223  
FEBRUARY 1988



Prepared for  
the Office of Health,  
Bureau for Science and Technology,  
U.S. Agency for International Development  
WASH Activity No. 375

Illustration 15

# La Historia Del Agua Potable



Illustration 16

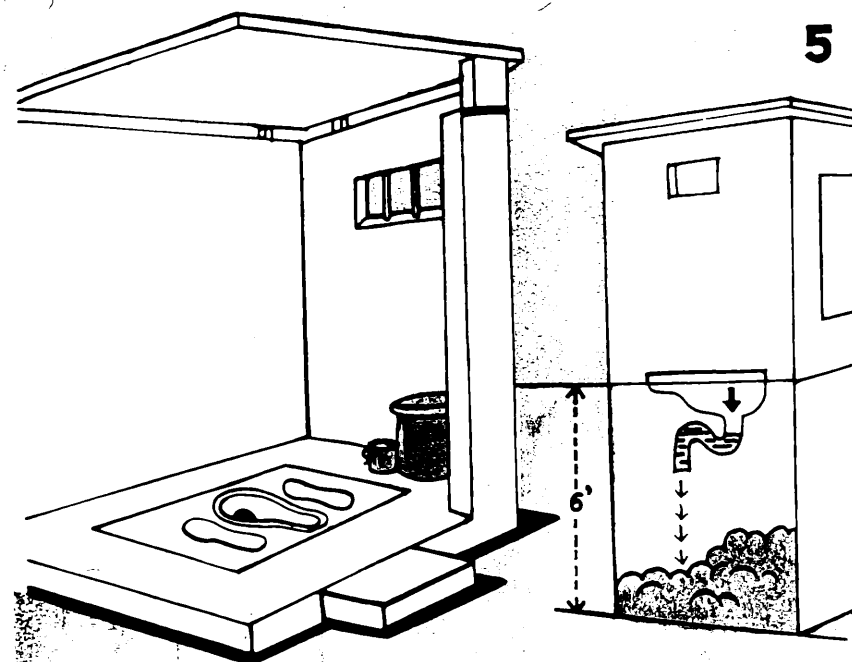
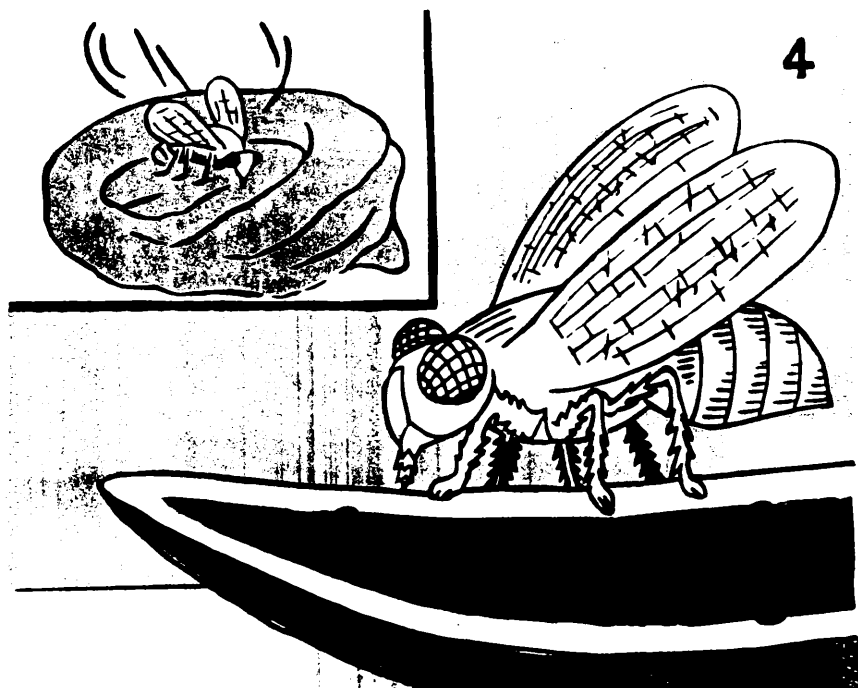
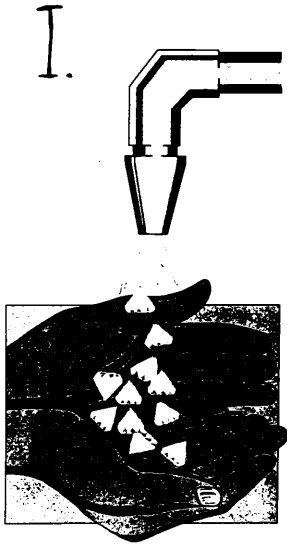


Illustration 17



I. അമൂല്യമാണ് ശുദ്ധജലം  
പാഴാക്കരുതേ ഒരു തുള്ളിപോലും

ജീവനും വിടം ശുദ്ധജലം  
മലിനജലം രോഗത്തിനും വിടം.

DUTCH-DANISH SUPPORTED WATER AND SANITATION PROJECT SOCIO-ECONOMIC UNITS KERALA KERALA WATER AUTHORITY



V. കുടിവെള്ളത്തിൽ  
കൈയ്ക്ക് ഇടരുത്

ഇത്തിരി വൃത്തി  
ഒത്തിരി രോഗങ്ങൾ തടയും

DUTCH-DANISH SUPPORTED WATER AND SANITATION PROJECT SOCIO-ECONOMIC UNITS KERALA KERALA WATER AUTHORITY

Illustration 18

VII.



മാലിന്യങ്ങൾ ഒഴിവാക്കാൻ  
കിണറുകൾക്ക് വലയിടുക

DE LUJANUSI SUPPORTED WATER AND SANITATION PROJECT SOCIO-ECONOMIC UNITS KERALA KERALA WATER AUTHORITY

Illustration 18



AIR

YANG BERSIH

MEMBUAT ANAK

SEHAT

dan

CERDAS

UNICEF  
DEPARTEMEN KESEHATAN  
INDONESIA

Illustration 19

GAMBAR 1



Illustration 20

A N N E X   B



## A N N E X   B

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Appropriate Health Resources &  
Technologies Action Group Ltd.  
AHRTAG  
1, London Bridge Street  
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CEPIS  
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Urb. Camacho  
La Molina  
Lima, Peru

International Reference Centre for  
Community Water Supply & Sanitation  
IRC  
Prinses Margrietplantsoen 20  
The Hague  
The Netherlands

Associated Country Women of the World  
ACWW  
Vincent House  
Vincent Square  
London SW1P 2NB  
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Cooperation for American Relief Everywhere  
CARE  
660 First Avenue  
New York, NY 10016  
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International Research and Training Institute  
for the Advancement of Women  
INSTRAW  
1, United Nations Plaza, Room S-3094  
New York, NY 10017  
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Pan American Health Organization  
PAHO  
525 23rd Street, N.W.  
Washington, DC 20037  
U. S. A.

Promotion of the Role of Women  
and Environmental Sanitation Services  
PROWESS  
304 East 45th Street, 12th Floor  
New York, NY 10017  
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Teaching Aids at Low Cost  
TALC  
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30 Guilford Street  
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WASH PROJECT  
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Instituto de Investigación Nutricional  
Av. la Universidad cdra. 5  
La Molina  
Lima, Peru

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1818 H Street, N.W.  
Washington, DC 20433  
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and Nutrition Awareness - CHETNA  
Drive-In Cinema Building, 2nd Floor  
Thaltej Road  
Ahmedabad 380-054  
India

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sobre Tecnología Apropriada  
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Guatemala 01012  
Guatemala C.A.

Christian Medical College Hospital  
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Tamil Nadu  
India

Centres for Disease Control  
Training & Laboratory Programme Office  
Division of Technical Services  
Still Picture Archives  
Building 2, B-46, F02  
Atlanta, Georgia 30333  
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Christian Aid  
Inter-Church House  
35 Lower Marsh  
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United Kingdom

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Ouagadougou  
Burkina Faso

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Banjul  
Gambia

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ILO Publications  
4, Route des Morillons  
CH-1211 Geneva 22  
Switzerland

Ministerio dos Recursos Naturais  
e Industria  
Projet Hydraulique des Regions  
Rurales  
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Banjul  
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The Arts Building Normal College  
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Gwynedd LL57 2DE  
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Development Education Division  
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Rangoon  
Burma

United Nations Population Fund  
UNFPA  
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Kathmandu  
Nepal

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Diarrhoeal Disease Control Programme  
CH-1211 Geneva 27  
Switzerland

World Health Organization  
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South East Asia  
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India

World Health Organization  
Community Water Supply & Sanitation  
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Switzerland

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Copenhagen Ø  
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Western Pacific Region  
Regional Centre for the Promotion of Environ-  
mental Planning and Applied Studies - PEPAS  
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