

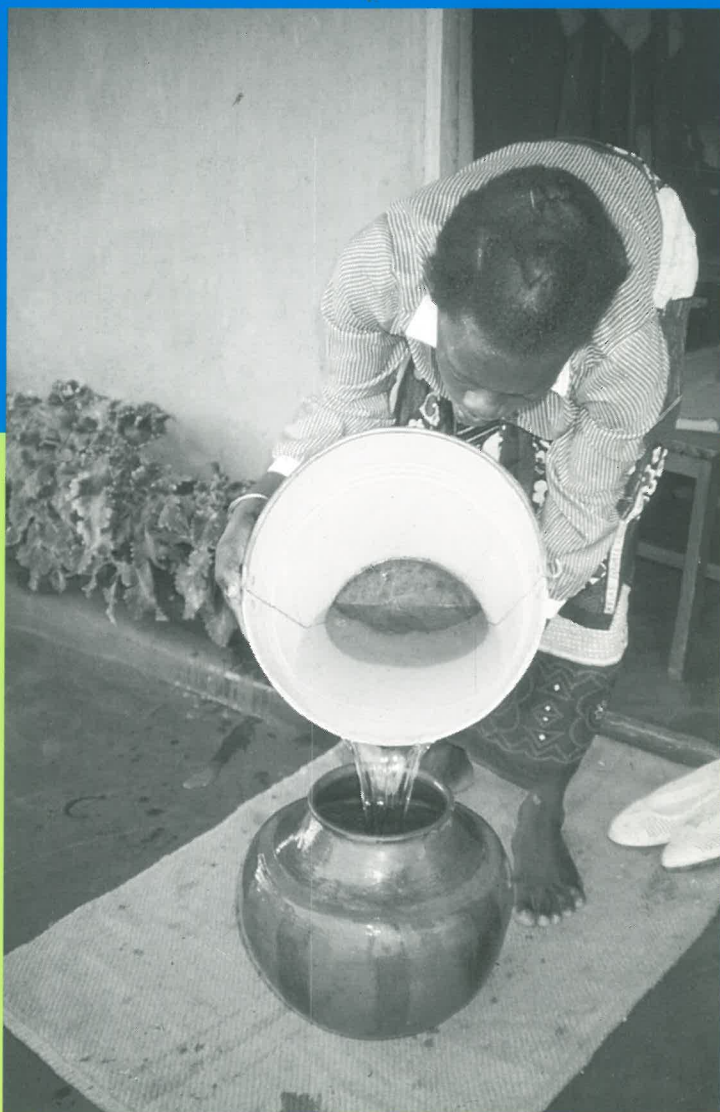


I R C

International Water and Sanitation Centre

WHO Collaborating Centre

Annual Report 1993



IRC INTERNATIONAL WATER AND SANITATION CENTRE

IRC is an independent, non-profit organization. It is supported by and linked with the Netherlands Government, UNDP, UNICEF, the World Bank and WHO. For the latter it acts as a Collaborating Centre for Community Water Supply and Sanitation.

The centre aims to ensure the availability and use of appropriate knowledge and information in the water, sanitation and environment sector in developing countries.

Activities include capacity development for information management, exchange of available knowledge and information, and development and transfer of new knowledge on priority issues. All activities take place in partnership with organizations in developing countries, United Nations organizations, bilateral donors, development banks, and non-governmental organizations.

Emphasis in programme activities is on community-based approaches including rural and low-income urban water supply and sanitation systems, community participation and hygiene education, the roles of women, maintenance systems, rehabilitation and environmental management.

The multi-disciplinary staff provides support through development and demonstration projects, training and education, publications, documentation services, general information dissemination as well as through advisory services and evaluation.

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IRC
International Water and Sanitation Centre

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Foreword

Despite what the International Drinking Water Supply and Sanitation Decade taught us during the 1980s, even now, several years later, water and sanitation coverage goals are not being met. In order to reach those still unserved with water supply and sanitation services, change is needed. If the Water Decade, although it was a successful endeavour, was able to do no more than keep pace with population increase, clearly not only a more forceful, but also a different approach is now needed.

Experiences during the eighties as well as sector conferences over the past few years have spawned many ideas on how to approach the shortcomings, and have led to a consensus on the nature of the changes that are necessary. UNCED, with its guiding Agenda 21, has on that basis not only created a new awareness that water supply and sanitation actions need to be integrated with water resources management and the concepts of sustainable development, it has also given a fresh opportunity to build on the consensus achieved during the Decade and to implement the lessons learned.

Change in Approach

At present it is widely recognized that all 'stakeholders' in the water supply and sanitation sector should participate in the development of water supply and sanitation services. It has been learned that change in behavioural patterns is required in the sense that programmes must be based on dialogue on what men and women in rural and peri-urban communities know and want, and what they are able to manage, maintain and pay for. Change is required in the approach governments and the political levels take, regarding their roles and those of men and women in rural and urban communities and those of other stakeholders. Change is required in building the capacity of these stakeholders to fulfill their new roles.

Change is also required in the sense that operation and maintenance are paid for and that this is done through innovative, flexible and appropriate ways of financing and practical financial management, and that these new ways of financing do not exclude the poor.

All these changes are required in strategies for water supply and sanitation alike; particularly sanitation development lags behind tremendously and needs, therefore, urgent attention.

The rural focus of the past decades has been a justified one, but the dramatic developments in urban settings today urgently require innovative measures. The above mentioned changes will need to form essential components of those measures.

Accordingly, at the second meeting of the Water Supply and Sanitation Collaborative Council in Rabat, Morocco in September, the need for a communications culture within the sector was underscored. Such a culture is the key to the behavioural change necessary at all levels, from users to national governments, to ensure optimal effectiveness and sustainability of water supply and sanitation interventions.

As part of this process, political advocacy should serve to make national governments aware of the importance of providing access to water and sanitation services. They must integrate water supply and sanitation planning and management into national programmes for water resources management, and must provide the financing to carry out these national programmes.

None of these benefits can be achieved, however, unless partners at all levels are equipped to take on their new roles. Once the role of each partner is clear, capacity building is crucial to enable them to play these roles.

Clearly, countries should become less and less dependent on external support and assistance. And particularly against the background of the changes required in direct government involvement in implementation, national resource centres should be strengthened or established to underpin the transition at government level from an implementing to an enabling role. These centres should take on supportive roles in information management, applied research, technical support and monitoring, appropriate training and human resources development, and advisory services.

It is only the power of this wave of involvement at all levels, that can make a reality of the realistic goals we are all striving for - some water and sanitation for all.

Hans van Damme
Director



Women at pump in rural Tanzania. Photo: J. Smet, IRC.

Country Support in 1993





Introduction

IRC's primary objective is to ensure that information (knowledge and experience) on current issues, problems and developments in the water and sanitation sector is available and accessible, and that communication efforts lead to its use and application. This requires, on IRC's part, a comprehensive overview of the overall sector situation, and access to information services worldwide, as well as a good insight in effective communication mechanisms and an effective network of partners.

Through information and communication IRC contributes to the efficient use of natural, human and financial resources, and to the optimum effectiveness of programmes towards sustainable water and environmental sanitation services. Its activities are aimed at enlarging the insight of partners at all levels in the prevailing problems and the knowledge of potential solutions. Of fundamental importance for the role IRC plays in these activities is the manner in which the work is organized. Through cooperation, a participatory approach and capacity building, IRC assists countries in developing the ability to carry out their support functions towards water supply and sanitation for all. Effectiveness, sustainability, partnership, and communication are thus keywords.

To generate and exchange information on important sector issues and to communicate with various partners, IRC uses seven different mechanisms: documentation services, awareness raising, desk research, publications, training, advisory services, and field activities. Taken together, these mechanisms describe the process through which IRC works. Information collection and desk research are used to obtain overviews of pertinent issues, which are then compiled into publications for various target groups. The processed information is put to use in the training and briefing programmes and field activities, and forms the basis for advisory services. All of these activities culminate in capacity building at the country level. The whole cycle begins anew when, for example, training, field work and project evaluations provide new information, or when field activities results in publications. The specific activities relating to these mechanisms are described in the body of this report.

The International Drinking Water Supply and Sanitation Decade led to a growing recognition of the need for a change to a more people-focused approach to sector problems. This was reinforced by the 1992 UNCED Conference in Rio de Janeiro, where political commitment was established towards a more social approach to water supply and sanitation interventions.

Such trends influence both the issues on which IRC works, and the allocation of its resources to the different mechanisms mentioned above. Currently approximately half of IRC's efforts are directly devoted towards integration of

social and technical aspects. Furthermore, 20% of activities concern issues such as community management, hygiene and gender. This figure continues to grow. Another 20% is devoted to capacity building and information management, and finally, 10% is spent on water resources management and urban issues - a figure which will increase in the coming years.

1. Information and Documentation Services

Background

In its function as a clearing house, IRC has a central role in providing a wide range of information relevant to the water supply and sanitation sector. IRC provides this information through the services of its Documentation Unit.

EXTERNAL INFORMATION SERVICES

Gathering of the diverse and widespread published information needed by the water supply and sanitation sector is a complex task that requires considerable effort and time. The multidisciplinary nature of the sector implies the need to keep abreast of a multitude of subject areas including environment, technology, health, sociology, management and communication. Much of this information is in 'grey' literature - unpublished project reports with a limited circulation. Information is scattered over many sources, few of which are entirely dedicated to the sector.

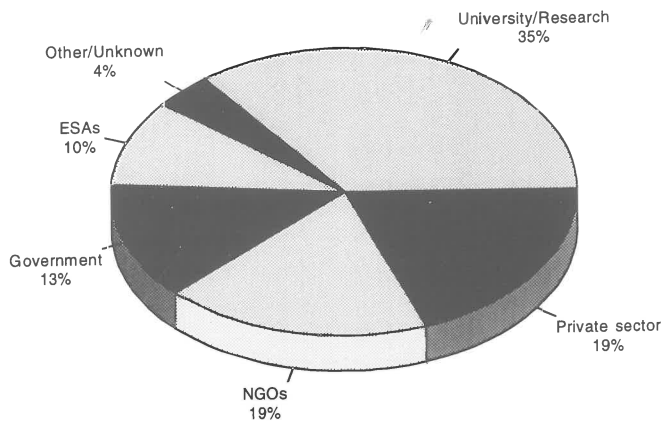
Aside from its publications and collection of videos, slides and posters, the Documentation Unit also has access to other databases on CD-ROM and those available from commercial database hosts such as ESA/IRS and ORBIT.

The effort put into gathering documentation over the years has resulted in one of the world's largest and most comprehensive collections on low-cost water supply and sanitation literature. The new publication in IRC's Reference Series, *A Guide to Secondary Sources of Information on Low-Cost Rural and Urban Water Supply and Sanitation for Developing Countries* is a reflection of the expertise that IRC has acquired on how and where to find information on water supply and sanitation relevant to developing countries. This publication is intended to provide some pointers for those interested in going about setting up similar library collections focusing on the water supply and sanitation sector.

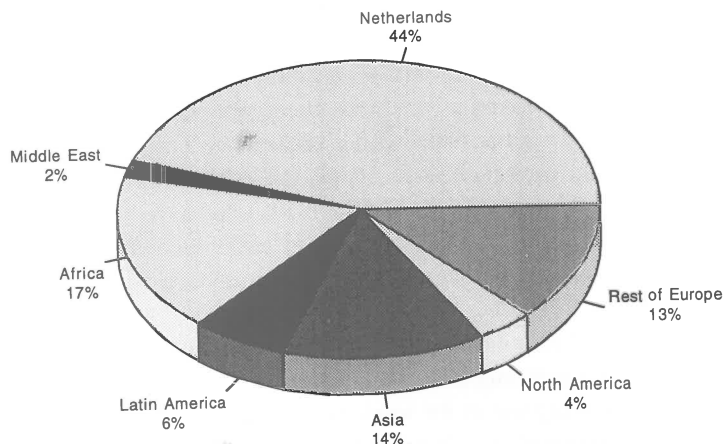
IRC responded to over 600 general requests for information during the year, and 275 specific subject queries. The number of clients making use of the services of the Documentation Unit has increased by approximately 16% each year since 1991. This increase can largely be attributed to the number of external

requests, which has doubled since 1991. An important group of clients are participants in IRC's training courses and programmes, who use the Documentation Unit extensively and consider it an essential aspect of their study. An analysis of the Documentation Unit's clients by type of organization shows that universities and research institutions form the largest group of clients. A breakdown is depicted on the pie chart below.

Documentation Unit Clients



Client Demographics



To better serve the sector two information services are offered. The first, a personalized current awareness service called 'Selective Dissemination of Information' (SDI) keeps subscribers up to date by providing references to documents recently received by IRC. On a bi-monthly basis subscribers receive a list of references of subjects, regions or countries of interest that have become available in the languages they have chosen.

Highlights

Few in the sector have ready access to the vast quantities of water, sanitation and environment-related information spread over a myriad of journals and periodicals. For those that do not, the second service, *Highlights*, the current awareness bulletin that has been published by IRC since 1990, offers an affordable solution. *Highlights* is published bi-monthly and contains a selection of news items and contents pages from over 250 journals, newsletters and other sources related to the water, sanitation and environment sector, and a listing of forthcoming events, training courses and new publications.

Newsletter

For 25 years the IRC Newsletter has been an important medium for spreading innovative developments and raising awareness about water supply and sanitation to those involved in the sector in both the developing and the industrialized world. The Newsletter in English and French is received by over 5600 subscribers worldwide.

The Newsletter spreads information about new trends and developments, field experiences, and other information to the sector. This year a new column, "News from the Collaborative Council" was added, which will appear from time to time as the Council deems appropriate. The Council made a significant contribution to a special double issue **Warming up for Rabat**, published in preparation for its meeting in Morocco in September. Other topics in 1993 included the first World Water Day, the WHO/UNICEF water and sanitation monitoring system WASAMS, structural adjustment policies in the sector, and announcements on an array of new courses, publications, and events.

DOCUMENTATION SUPPORT

The Documentation Unit participated in the activities of the newly established Association for Information and International

Development (VIIO). The VIIO aims to encourage institutional contacts between various professional organizations in the Netherlands which are concerned with information and development. The focus is on sharing knowledge, information and skills. One of the themes being explored by the Association is that of electronic networking, in particular through E-mail, about which the VIIO held a workshop in December.

The library also provided extensive documentation support to the forthcoming Ministerial Conference on Drinking Water and Environmental Sanitation to be held in the Netherlands in March 1994. In particular the library carried out searches in internal and external databases and provided documents for the authors of the Conference keynote papers.

2. Desk Research

Background

IRC's activities, carried out together with partners in developing countries, are aimed at creating a better insight into both sector problems and their potential solutions. To effectively use and further develop existing information, IRC, with these partners, draws on available recorded experience, and benefits from the results of research activities and hands-on project experience from many countries. Using a 'process' approach, problems are identified on the basis of requests coming into IRC. After discussion with counterparts, existing information is reviewed for addition to IRC's database. Additional information is then sought and experiences are reviewed. Such activities, referred to as 'desk research', form a large part of IRC's work, and are a basis for the publications which are regularly produced.

COMMUNITY MANAGEMENT

Activities in community management began in 1992 when, with an initiative from IRC's Governing Board, and with support from the UNDP/World Bank Water and Sanitation Program, UNICEF and DGIS, IRC hosted a pioneering international workshop on community management. The workshop resulted in a report published this year in the Occasional Paper Series, *Community Management Today: The Role of Communities in the Management of Improved Water Supply Systems*. The publication brings together field research and experiences on the subject, and highlights the key issues involved.

The workshop also led to research activities funded by DGIS, as well as DGIS-supported field activities in Central America, Asia and Africa which are to begin early in 1994 (see Chapter 6).

GENDER ISSUES

In the 1980s involvement of women in water supply projects developed from something incidental to a regular feature. Experience had shown that such involvement, when made possible, improves both the effectiveness of projects and women's position. At the same time, however, it was learned that focusing on women alone can also be counterproductive - increasing women's work

burden instigates opposition or withdrawal of men. Men also turned out to be an important group for achieving better hygiene. This led to the conclusion that for effective projects a *gender* approach is required, meaning the involvement of women and men in such a way that an equitable division of work, functions and benefits is achieved.

In 1985 PROWWESS and IRC prepared a first publication on how women have been involved in water supply projects and to what effect: the Technical Paper *Involvement of Women in Water Supply and Sanitation*. Since then regular requests have been received to follow up the Technical Paper with an operational field guide on how to involve women in water supply projects. Rather than desk work, IRC decided to develop this guide together with groups of women - and some men - working at the field management level in rural water supply projects, and to give this guide a gender focus. In 1993, with funding from DGIS's Spearhead Programme for Women, three workshops were held to develop region-specific field guides containing recommendations and strategies for taking gender relations and differences into account in water supply and sanitation projects. The workshops were held in Kenya with AMREF for the African region, in Colombia with Centro Inter-Regional de Abastacimiento y Remoción de Agua (CINARA) for Latin America, and in Sri Lanka with the NGO Decade Service for Asia. *Methods to Involve Women in Rural Water Supply, Sanitation and Water Resource Protection*, prepared by IRC in 1992, served as background paper for the workshops. The workshop participants reviewed experiences from their own field projects and used these to draft regional guidance documents. After review by their respective projects, these will be published by IRC and the regional partners, and distributed for regional use by implementation projects and agencies, and sector training institutes.

In collaboration with PROWWESS and with funding from NORAD, the third annual issue of the Abstract Journal *Woman, Water, Sanitation* was published. The journal gives full abstracts of recently published and unpublished documents and audio-visual materials, and a state-of-the-art review of one particular gender issue. This third issue pays specific attention to the public/private spheres for men and women and to the economic benefits of rural water supply projects for women.

Upon request of the EC, IRC furnished summary translations in Spanish and French of the Technical Paper *Participation of Women in Water Supply and Sanitation* and the three Abstract Journals. Funding agreements with PROWESS and UNICEF will enable the Abstract Journal project to be continued for another three years. Work will concentrate on collecting, analyzing and diffusing new material on gender aspects, particularly on how and to what extent women take part in projects and enjoy the benefits. Emphasis will be on documents from developing countries and written by developing country nationals.

IRC attended a workshop on "Gender and Water Resources Management: Lessons Learned and Strategies for the Future" hosted by SIDA in Stockholm on behalf of the OECD/DAC gender group, and in preparation of the OECD/DAC meeting on water resources management in May 1994. Staff members presented papers on gender and hygiene education, and on gender and urban water supplies.

HYGIENE AND BEHAVIOURAL CHANGE

Background

Experience in rural and low-income areas has shown that access to improved water supply and sanitation does not automatically lead to a significant reduction in water and hygiene-related diseases. Changes in technology have little effect when they are not accompanied by simultaneous changes in behaviour. Integrating a hygiene education component in a water supply and sanitation programme can contribute to maximizing the health benefits from new or improved facilities, and increase the users' motivation to enhance the sustainability of these facilities.

Hygiene Education

IRC continued its involvement with the Partnership for Child Development Programme (PCD), an operational research programme coordinated by the Imperial College of Science, Technology and Medicine in London and implemented by the governments of developing countries. The programme is a school health programme with three interventions: deworming, micronutrient supplements and health education. IRC supports the Programme's health education component, for which it went on a mission to *Ghana* to assess progress in the country's health

education programme, and to explore ways in which the Programme may make a stronger contribution. A similar mission was also carried out in *Tanzania*.

In the context of the programme, a training workshop was held in Tanzania in September on research and evaluation methods for health education. The workshop was conducted by PCD and facilitated by IRC, in cooperation with the Centre for Tropical Disease Research (TDR), a special programme at WHO, Geneva for research and training in tropical diseases.



*Participatory identification of prevailing water-related diseases in Nepal.
Photo: E. Bolt, IRC*

At a workshop on Planning for Health and Socio-Economic Benefits from Water and Environmental Sanitation Programmes held at UNICEF in New York in April, IRC presented a paper entitled *Using Hygiene Behaviour Indicators in Water, Sanitation and Hygiene Education Projects*. The workshop made recommendations towards guidelines for a global water and sanitation strategy which incorporates health benefit objectives. In doing so, it confirmed the increasing importance of hygiene education as an integral part of water supply and sanitation programmes.

For a joint WHO/UNICEF hygiene education strategy, IRC prepared a literature review of the motivational factors in changing hygiene behaviour. A case study of hygiene education in **Bangladesh** was also prepared, which includes information on hygiene education activities as well as on a programme on social mobilization designed to create mass support for sanitation.

Signals from the field implied the need for a course on hygiene education training. IRC began preparing this course in 1992 and offered it for the first time in October 1993. The course met with success and will be repeated next year (see Chapter 4).

Hygiene Behaviour

Actions Speak. An introduction to the study of hygiene behaviour in water supply and sanitation projects, co-edited with the London School of Hygiene and Tropical Medicine, was published this year. The book is the outcome of a workshop on the measurement of hygiene behaviour held in Oxford, UK in 1991 (see Annex III).

A draft publication on the use of structured observations in the study of behaviour for health intervention projects was prepared with partners for WHO, Diarrhoeal Disease Control Programme, and LSHTM.

School Sanitation

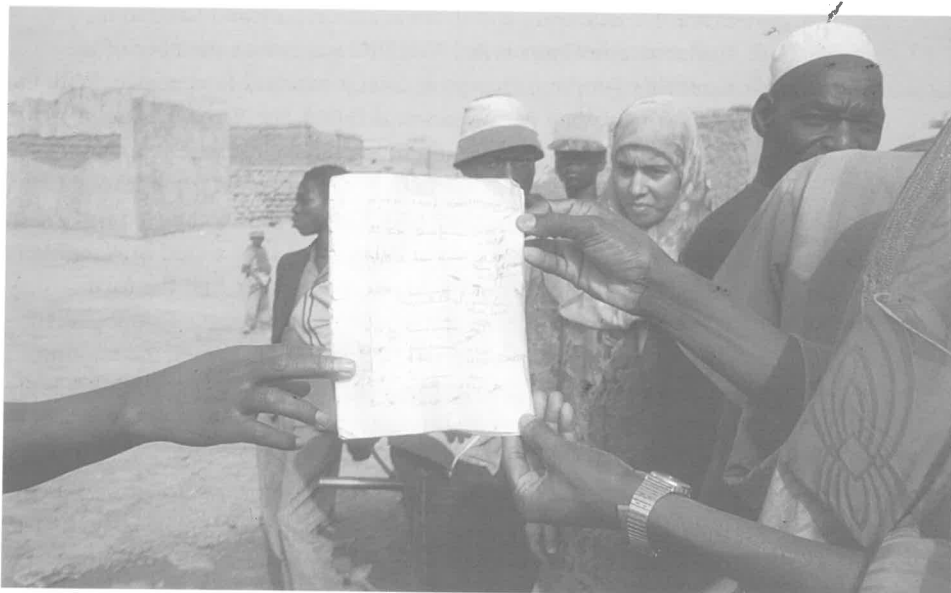
While it is widely agreed that the school environment can play an important role in altering children's basic behaviour and imparting knowledge, it is often an environment which poses important hygienic problems. A clean environment at the school is important for the health of the child. One of the challenges facing the water supply and sanitation sector is to develop programmes to improve

the sanitary conditions in schools, and to promote and stimulate hygienic behaviour.

In an effort to do this, WHO, with support from SIDA and SDC, and in collaboration with PAHO and IRC, implemented a programme in Latin America in 1992. The programme began with the preparation of a background document about school sanitation and hygiene education in Spanish and English, for use in a workshop held early in 1993. Studies were also carried out in *Colombia, Ecuador, Guatemala, Honduras, Nicaragua* and *Peru* to assess the status of school sanitation. The workshop, organized by WHO, PAHO and IRC, was held in Cali, Colombia in March to review the roles of schools in implementing and managing water supply and sanitation facilities at schools and changing hygiene-related behaviour through school hygiene education. The workshop resulted in a summary document on current experiences with school sanitation in different countries in Latin America, and draft country-level action plans. The document also included the case studies carried out in the countries mentioned above, and the findings and conclusions of the workshop.

COMMUNITY-BASED FINANCIAL MANAGEMENT

Resources coverage and community financing have become a central sector issue in the 1990s. While financial and economic issues in developing countries tend to be centralized at the agency level, it has become increasingly clear that communities should have a larger share of the responsibility in the coverage of the necessary resources. Improving cost efficiency and increasing cost effectiveness are important aspects in enabling communities to become more self-sufficient in resource coverage. Only when the partnership role of communities is incorporated into the sound economic and financial management necessary to ensure that improved water supplies continue to function, can long-term sustainability of water supply and sanitation programmes be ensured.



Community members showing their cash book, used for their operation and maintenance fund in Burkina Faso. Photo: E. Bolt, IRC

This increasing interest in economic and financial issues is reflected in the requests for IRC assistance in project evaluations and reviews in a number of countries. A few examples are the joint Indo-Dutch project in India and the review of the HESAWA project in Tanzania in 1992.

Other current activities dealing with financial issues include a literature review on costs and cost analysis, and research on micro-credit schemes in rural areas.

SUSTAINABLE SYSTEMS

The long-term sustainability of water supply and sanitation interventions is for a large part dependent on the sustainability of the individual systems and their operation and maintenance (O&M). Until the past few years little attention had been given to this issue, despite the general awareness that lack of proper O&M has been one of the key constraints for further development of the water sector. National governments and external support agencies now recognize that proper O&M towards the sustainability of water and sanitation systems should be a priority for the protection of their infrastructure investments.

Since the establishment of the Water Supply and Sanitation Collaborative Council in 1988, IRC has been a member of the Council's Working Group on Operation and Maintenance. With the aim of improving performance of O&M, the Working Group requested IRC to produce a training course package aiming to contribute to improved management of O&M in rural drinking water supply and sanitation. The package was completed in 1992 with financial assistance from WHO, and field-tested in *Namibia* in 1993. Adjustments to the package followed, and the final version was presented at the second meeting of the Collaborative Council in Rabat, Morocco in September. In Yemen the training package has been translated in to Arabic by GTZ, and UNICEF is considering a French translation for Francophone Africa.

The work on the training package has made it clear that a publication on operation and maintenance could make a significant contribution to the sector on this issue. Work on an Occasional Paper began in the second half of the year. To offer further instruction on O&M, IRC will begin conducting briefing programmes on the subject as of 1994.

In September Save the Children UK hosted a workshop on operation and maintenance in Blantyre, *Malawi*, in which IRC participated in the role of keynote speaker and facilitator, and in November IRC participated in a workshop on O&M held in Harare, *Zimbabwe*, sponsored by the WHO Regional Office for Africa.

WATER RESOURCES MANAGEMENT

The International Conference on Water and the Environment in Dublin and the United Nations Conference on Environment and Development in Rio de Janeiro, both held in 1992, placed water resources management high on the water agenda. Among the recommendations were the delegation of water resources management to the lowest appropriate level, and the use of a participatory approach. The approach should be coupled with training of water management staff, including women, at all levels.

In May 1994 the OECD/DAC will be holding a meeting on water resources management in Paris. For this purpose IRC was invited by SIDA to prepare a paper providing background information on the main donors in the sector and their efforts in relation to water

resources management. It addresses the consistency of donor policies with ideas and recommendations from the Dublin conference, and to what extent programmes are in place to translate these into practice.

At the end of the year IRC attended the World Bank's Water Resources Management Seminar in Virginia, USA, which was held to discuss country experiences with water resources management policy with respect to stakeholder participation and capacity building.

URBAN WATER SUPPLY AND SANITATION

Statistics on urban growth indicate that by the turn of the century, 60% of the world's population will be living in cities. There will be 22 cities in the world with over 10 million inhabitants, and 18 of these cities will be in developing countries. The urban population living in slum and squatter settlements with lacking infrastructural facilities, are already faced with inadequate water supply, sanitation, drainage and solid waste collection and disposal services. The downward trend in the coverage of these basic services will continue unless governments, hand in hand with communities, implement innovative, cost-effective approaches.

The operation and maintenance of urban infrastructure has been neglected by both sector professionals and decision makers for many decades. Governments are now faced with the fact that facilities have ceased to function properly, leading to major destruction of capital. Particularly the urban poor have been directly affected by the lack of proper operation and maintenance of low-cost sanitation.

This neglect prompted IRC to collaborate on a joint research programme focusing on the performance, use and operation and maintenance of low-cost sanitation systems in *India* and *Thailand*. In 1989, together with IHS in the Netherlands, HSMI/HUDCO in India, and NHA and CMU in Thailand, investigations began of operation and maintenance requirements for sanitation options in low-income urban areas, covering both on- and off-site technologies.

The project included field visits, an inter-country seminar in 1992, and national seminars to enhance the dissemination of research

results presented in reports from both countries. Several important lessons were learned from the project. Most importantly, that proper operation and maintenance depends on integrating its requirements in planning, design, implementation, organization and management in partnership between government, private agencies and residents.

In October a seminar was held at IHS to discuss the outcome of the project, where it was agreed that wide dissemination of the research results is required. Several recommendations came out of the seminar. Some of these included decentralization of responsibilities to lower levels of government; better coordination between agencies; support of a demand-driven approach; and investigation of financial options for delivering and servicing a complete package of basic infrastructure so as not to burden the urban poor.

The project results and experiences are documented in the end-of-project report entitled *Operation and Maintenance of Sanitation Systems in Low-Income Areas in India and Thailand*, which is to be published in the Occasional Paper series next year.

INFORMATION NEEDS

Upon request of the Netherlands Ministry of Housing, Physical Planning and Environment, an assessment of information needs in drinking water and sanitation in *CIS countries* was begun.

A draft briefing document describing the activity and providing reports for six countries was prepared, and a paper on *Community Management of Water Supply Systems* was presented at an international seminar on "Civil Society and its Involvement in Looking for Solutions to Drinking Water, Sanitation, Environment, and Quality of Life Problems" held in Warsaw, Poland in May. Another phase of the project consisted of joint problem assessment with respect to water resource, operational and financial aspects between 6-10 water supply works in Bulgaria, Romania and Slovakia. Possible avenues to problem solving, including twinning arrangements with Dutch companies and project formulation, were also discussed.

A workshop on monitoring of water supply and sanitation is planned in collaboration with UNICEF, WHO and UNDP. The

workshop, intended to develop a core group of national sector staff in 4-6 southern FSU states, should provide the basis for a self-sufficient unit linked to national sector planning, which can provide inputs in donor-assisted sector programming as well as stimulate exchange and utilization of Netherlands-based expertise.

In the context of the project a network was established of agencies based in the Netherlands who would be interested in collaborating with former East Bloc and CIS states.

3. Publications

Background

The end result of the information-gathering efforts through desk research and field activities is a publication on the subject at hand, which, after review by appropriate resource persons and experts, is issued for the benefit of those working in the sector. Lessons learned by project staff are also an important source of sector information, and these, too, are made accessible to others in such a way that they can be applied and/or built upon. Two examples of such ready-to-use lessons learned have been prepared by IRC in the recent past. One is a case study of the Baldia Soakpit Pilot Project in Pakistan, published in 1992, and the other a School Sanitary Facilities Guide for Latin America, published as a background document for a School Sanitation workshop held in Colombia early in the year.

The written results of the research form the IRC publication series, which consists of four types of documents. The Technical Paper Series (TP) comprises mature texts reflecting new subject trends, externally reviewed and meant to be of use to a wide audience for five to ten years into the future. Books in this series usually integrate software components such as community management and operation and maintenance, with technical issues. The Occasional Paper Series (OP) reflects activities and progress of IRC's ongoing work, dealing with specific subjects worthy of quick, low-key production for selected target groups, and may include material published for IRC's partners. The Training Series (TS) comprises practical information and knowledge for use in training various groups, and the Reference Series (RS) includes directories, inventories, thesauri and other information tools.

Cooperation on relevant subjects with other agencies and institutions often results in joint preparation of publications not classified into the IRC series.

NEW PUBLICATIONS*

New IRC publications contributed information and expertise about various pertinent sector issues.

* For abstracts of new publications, see Annex 3.

Community Management

Community Management Today. The Role of Communities in Management of Improved Water Supply Systems, an Occasional Paper which resulted from an international meeting at IRC on that subject in 1992, summarizes field experiences from six countries and several documented case studies.

Health and Hygiene

Actions Speak. The Study of Hygiene Behaviour in Water and Sanitation Projects, was prepared by the London School of Hygiene and Tropical Medicine and IRC. It builds on the measurement of hygiene behaviour through the experience of 44 specialists on the subject.

Gender Issues

The final issue of three annual abstract journals entitled *Woman, Water, Sanitation* was published with funding from PROWESS and NORAD. Recent negotiations have guaranteed continuation of the journal through 1996.

As a result of three regional expert consultations on methods to involve women in water supply and sanitation, field guides for regional use were prepared in Africa, Asia and Latin America with local men and women working at the field management level.

Operation and Maintenance

Management of Operation and Maintenance in Rural Drinking Water Supply and Sanitation, is a resource training package developed by WHO and IRC.

Taking Care of Your Water Supply, a product of the Piped Supplies project, was added to the Training Series. It provides guidelines for the effective involvement of users in operation and maintenance activities.

Pre-Treatment Technologies

The Occasional Paper *Pre-Treatment Alternatives for Drinking Water Supply Systems. Selection, Design, Operation and Maintenance* is a result of technical research from the Pre-Treatment project in Colombia.

Action-Learning

Another product of the Piped Supplies project is *Action Learning. Building on Experience*, in the Occasional Paper series. It stresses the importance of developing and using a learning approach at individual and project level.

Information Management

Information Management in the Water and Sanitation Sector. Lessons learned from field assignments in Africa and Asia, is an Occasional Paper presenting a collection of experiences from IRC projects in the early 1990s.

A Guide to Secondary Sources of Information on Low-Cost Rural and Urban Water Supply and Sanitation for Developing Countries was published in the Reference Series to assist with how and where to find information on water supply and sanitation in developing countries.

TRANSLATIONS

Demand from the field often makes it desirable to translate IRC publications into other languages for local use.

The Technical Paper *Slow Sand Filtration for Community Water Supply*, was translated into Spanish (*Filtración Lenta en Arena Tratamiento de Agua para Comunidades*), by CINARA, Colombia with financial support from DGIS.

The Occasional Paper *Pre-Treatment Alternatives for Drinking Water Supply Systems. Selection, Design, Operation and Maintenance*, was translated from Spanish by CINARA.

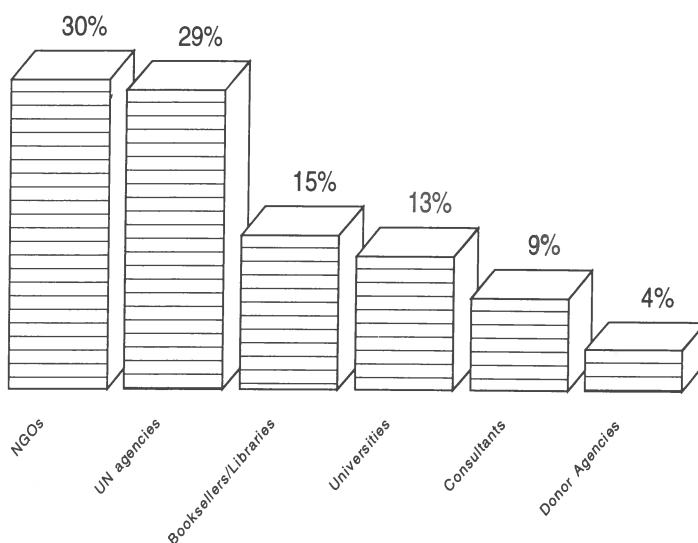
With funding from the EC, summaries of the three editions of the abstract journal *Woman, Water, Sanitation* were translated into Spanish and French, along with excerpts from the Technical Paper *Involvement of Women in Water Supply and Sanitation*.

SALES

More than 5000 publications were distributed on request to a wide range of clients all over the world. Leading in sales were *Actions Speak. The Study of Hygiene Behaviour in Water and Sanitation Projects*; *Community Management Today. The Role of Communities in Management of Improved Water Supply Systems*; and *Just Stir Gently. The Way to Mix Hygiene Education with Water Supply and Sanitation*.

Field offices of NGOs and UN organizations such as UNICEF and UNDP accounted for just over half of the total sales.

Publication Sales 1993



4. Training and Briefing Programmes

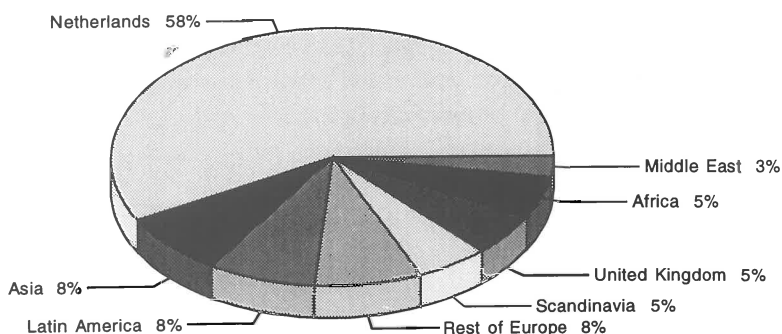
Background

To keep up with the pace of development cooperation, and to deal with the growing complexity of the water and sanitation sector, those involved must constantly update and supplement their knowledge. IRC is at the forefront of new developments in the water supply and sanitation sector, putting it in a unique position to share its professional expertise and vast documentation resources. It can also facilitate the exchange of experiences among national and expatriate staff working in water supply, sanitation and environment in developing countries. Through offering briefing programmes in the Netherlands and short training courses both at home and abroad in cooperation with developing countries, IRC keeps the participants abreast of the latest developments, and in turn benefits from their knowledge and experience.

BRIEFING PROGRAMMES

Five day *standard briefing programmes* are job oriented, preparing participants with relatively little experience in the sector for a new assignment. Five- to fifteen-day, subject-oriented *tailor-made briefing programmes* are intended for national level and senior staff with several years of experience, who are involved in planning, management, evaluation and strategy development. For those who do not have sufficient time to follow a tailor-made programme,

Region of Origin
Participants in IRC Briefing Programmes



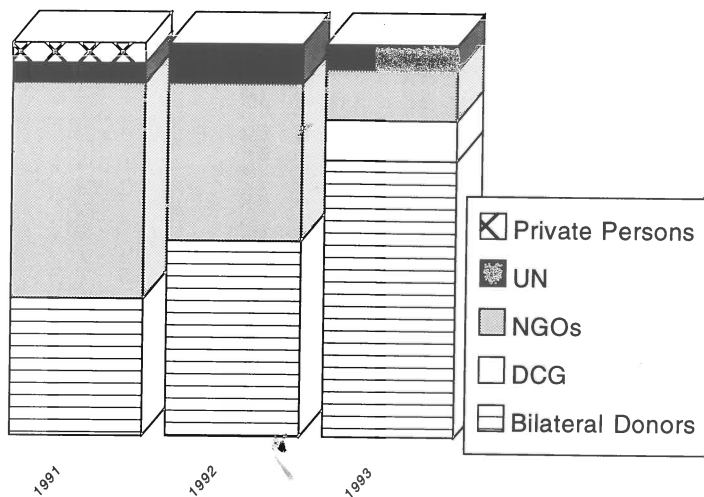
guidance is available from IRC's documentation and other staff in obtaining all the information they require during a three-day...*intensive briefing programme.*

Although gender issues and gender perspective are included in all programmes, often an extra focus on gender is called for. Since 1992 a briefing programme has been offered twice yearly in collaboration with the Dutch VENA Centre for Women and Autonomy. The programme includes three days for personal reflection on the future assignment from a gender perspective, and on key aspects of gender planning in water supply and sanitation programmes.

During the year a new briefing programme on operation and maintenance was developed which centres around the operation and maintenance training package IRC has developed in collaboration with WHO. The programme will be launched in 1994.

Briefing programmes drew 38 participants in 1993, with over 40% coming from outside the Netherlands. Participants came from, among others, Belize, Botswana, Colombia, Guinea Bissau, Kenya, India, Nepal, Norway, Switzerland and Vietnam. Sponsoring agencies included SIDA, DGIS, GTZ, UNICEF, OXFAM, and SNV.

Sponsoring Agencies Briefing Programmes



SHORT TRAINING COURSES

In collaboration with specialized training institutes both in the Netherlands and Africa, IRC offers more specific, in-depth training courses on key issues.

Netherlands

To assist project staff in upgrading management skills with regard to planning, implementation and maintenance of sustainable water and sanitation systems, IRC offers a three-week course which enables participants to ensure the integration of long-term sustainability in their projects. *Management for Sustainability in Water Supply and Sanitation Programmes* has been organized with the Management for Development Foundation in the Netherlands since 1989. The course was offered twice this year.

Two new courses have been developed and were offered for the first time in 1993. *Management and Implementation of Hygiene Education in Water Supply and Sanitation Programmes* is intended to improve skills to develop, plan, implement and manage hygiene education in relation to water supply and sanitation. The course met with great success. UNICEF showed its confidence in IRC's courses by sponsoring a large percentage of the participants, among them four from China.

A tailor-made information management course was organized at the end of the year for three staff members of the Kerio Valley Development Authority, which carried out the World Bank-funded Suam River Catchment Rehabilitation Project in Kenya. The three-week programme introduced them to geographical information systems, monitoring information, setting up a small documentation unit, report writing, and promotion of lessons learned. This contributed to the further development of the short course *Managing Information Resources in Water Supply and Sanitation*, which is scheduled to take place at IRC for the first time in mid-1994. It is intended to develop practical skills aimed at reinforcing the role of information as a resource to sector development, to assess information products and services, and to learn to develop services in accordance with the actual needs of the users of the information systems. The course is organized on request, and tailored to the specific needs of the participants.

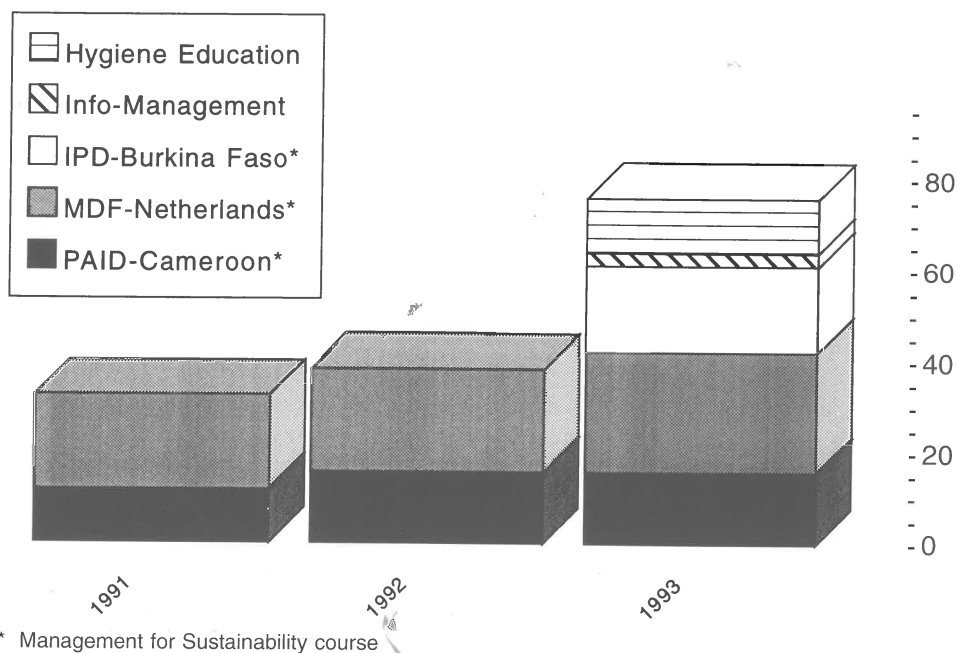
Developing Countries

The growing interest in *Management for Sustainability* led to the first course being offered abroad in 1991. In collaboration with the Pan-African Institute for Development (PAID), the course was offered twice in 1993 - in **Burkina Faso** in the French language with PAID's centre there (IPD/AOS), and in **Cameroon** in English with PAID's West Africa regional office (PAID/WA). This year, aside from the host countries, participants came from Benin, The Gambia, Ghana, Kenya, Malawi, Mali, Namibia, Niger, Nigeria, Rwanda, Sudan, Tanzania, Uganda and Zambia.

The IRC/PAID training courses held in both countries provide an important opportunity for PAID to strengthen its contribution to training for rural development. As part of a capacity-building process, IRC is reducing its inputs and transferring responsibilities for organization and subject contents to PAID.

Forty-two individuals participated in short training courses in the Netherlands this year, and 41 abroad. Sponsors included UNICEF, the World Bank, CARE International, DANIDA, and others.

Participants in Short Training Courses





*Participants in the **Management for Sustainability** course in Cameroon.
Photo: H. Heijnen, IRC*

Training Development

Keeping a finger on the pulse of the sector enables IRC to recognize the need for new courses. Signals from the field resulted in the development of the courses on hygiene education and information management as mentioned above, and also leads to expansion of courses into new regions. The success of the *Management for Sustainability* course has resulted in collaboration with AMREF, who will be hosting the course in Kenya for the first time in September 1994, and discussions are underway to organize the course for the Latin America region with CINARA. As part of

a larger effort for training and capacity building in Maharashtra, India, the course is going to be organized for 60 government staff members, in collaboration with the Nashik Research and Training Centre, and with support from ODA.

The development of new courses offers IRC staff a good opportunity for the compilation of readers, which offer easily accessible information on specific subjects for use in IRC's Documentation Unit.

At the end of every training course, participants thoroughly evaluate their experiences. These evaluations have enabled IRC training staff to adjust and improve the curriculum on a regular basis over the years.

LECTURES AND PRESENTATIONS

Another way IRC shares its knowledge and experiences is through lectures and presentations to groups of trainees, students, and professionals from or going to developing countries. Requests come from predominantly Netherlands-based organizations such as the Royal Tropical Institute (KIT), IHE, IHS, Technical University of Delft, and the Agricultural University of Wageningen. Lectures this year dealt with issues such as water supply-related epidemiology, hygiene education, water supply technology and sanitation, costs benefits of water supply projects for women, and the links between water supply and sanitation and hygiene, with focus on simple solutions to hygiene problems.

5. Advisory Support Services

Background

As IRC's reputation for high quality advisory support services grows, these services are becoming an increasingly large portion of its work. IRC has access to extensive information sources, a wide network of contacts, and experienced staff, and taps these resources on the request of a growing number of donors, developing country governments, and others in the sector.

A key element in the success of IRC's advisory support is the participatory approach it uses. The involvement of project staff in evaluation and monitoring has proven to enhance the probability that recommendations will indeed be implemented. These activities not only greatly benefit the projects, but ultimately provide IRC with a wealth of information which can be made available to a wider audience.

To foster the participatory approach, a resource book on participatory techniques has been prepared. *Reflecting Group Processes. A Resource Document on Participatory Techniques for Water Supply and Sanitation Projects* is currently being used internally and with participants in IRC training courses.

EVALUATION AND ADVISORY MISSIONS

Short Missions

- | | |
|----------------------|--|
| <i>Burkina Faso</i> | - advice provided to local Ministry of Water on technical options for sustainable water supply systems in secondary villages, for DGIS; |
| <i>Guinea Bissau</i> | - support provided to the Ministry of Natural Resources for development of a rural water supply policy, followed by support for policy development for the water supply in rural centres (the water programme is implemented by SNV and financed by DGIS); |
| <i>Honduras</i> | - support provided for activities towards development of methodologies for participatory evaluations and planning for UNICEF's UEBM programme in Tegucigalpa;
- with UEBM, UNICEF and Honduras University, carried out participatory evaluation of a UNICEF-supported water supply project for low-income urban areas in Tegucigalpa; |

- Malawi*
 - input in a workshop on operation and maintenance of piped and hand-pumped water supplies, and development of an information package, for Save the Children Foundation, UK;
- Namibia*
 - advice on low-cost water treatment in Namibia for UNICEF's Integrated Area-Based Programme;
- Panama*
 - facilitated workshop on community participation for UNICEF;
 - supported activities towards development of a proposal for a World Bank-financed water and sanitation project, also for UNICEF;
- Tanzania*
 - final report submitted to FINNIDA for 1992 review of Mtwara/Lindi rural water supply projects;
 - for DGIS, prepared overview paper on water supply and sanitation experiences in Tanzania, to be used in planning new phases of implementation projects.

ONGOING ADVISORY SERVICES

India

For eight years IRC has been policy advisor for the joint Indo/Dutch water and sanitation programmes in Gujarat, Kerala, Uttar Pradesh, Andhra Pradesh and Karnataka states. A sociologist and an engineer from IRC form the advisory team for the DGIS-supported programmes. Besides construction, which includes gender-specific community participation, these programmes focus on maintenance and institutional strengthening. In that context a discussion paper on operation and maintenance was prepared. DGIS also requested IRC to review the hygiene education work in the programme. A draft paper has been completed and will be discussed with the Indian implementing agencies in 1994.

Each year the project holds one joint meeting in India and two in the Netherlands to discuss the state of affairs, review progress, and discuss issues common in each state. Discussions this year focussed on sanitation, and on the influence of the projects on policy development in India.

On behalf of DGIS, IRC and IHE carried out a policy formulation mission for training support to the rural water supply sector in India. The output was a strategy paper, *Training in the Netherlands-Assisted Water Supply and Sanitation Programme in India*. Consultations are now going on between the national and state governments to formulate a training support project. The

transfer of the IRC/MDF *Management for Sustainability* course to the Nashik Research and Training Centre in Maharashtra, with financial support from ODA, will be part of this project.

Pakistan

DGIS is supporting policy implementation for the Provincial Strategic Investment Plans for Rural Drinking Water Supply and Sanitation coordinated by the World Bank. In this context advisory services are provided to DGIS for the Baluchistan Rural Water Supply Project. The project was implemented in 1992 and aims to develop a sustainable, community-based approach to water supply and sanitation through strengthening operation and maintenance, women's involvement and hygiene in small rural communities. It is being carried out by a newly established water and sanitation section within the Local Government and Rural Development Department, with support from a team of local consultants and two expatriates. Financial assistance is being provided by UNICEF.

Visits to the project late in the year revealed that progress is good in terms of community participation, role of women and hygiene education, but that capacity development in the local government and the Ministry of Rural Development is weak.

An IRC mission at the end of the year reviewed the activities undertaken in the first implementation phase. Advice and documentation support was provided to project staff, government and donor partners in Pakistan on key elements in the project. These included institutional strengthening and project operation at various levels, community-based approaches, gender issues, hygiene education, communication strategies, financing arrangements, privatization, operation and maintenance and project monitoring.

The UNDP-World Bank Water and Sanitation Programme in Pakistan has also requested IRC support for a project on promotion of integrated gender-sensitive participatory development in water supply and sanitation in Pakistan, which includes hygiene education and community management. IRC's role was being discussed at the end of the year.

Yemen

A 13-year project funded by DGIS on integrated rural development in the Yemen Arab Republic ended in 1993. Water supply and sanitation has always played a major role in this project. Through the 'Advisory Group Land and Water' IRC has been providing advisory services to the Netherlands Government for this project for the last ten years.

6. Field Activities

Background

Often issues arise on which sharing information alone is not sufficient to come to grips with the problem at hand. Solutions can only be found through working in partnership in practical, day-to-day situations. In such cases IRC will also draw on field activities. Field activities are specifically designed so that all those involved can benefit from the learning opportunities offered by the research activities. At the same time they lead to better insight and more information. Learning by doing is very effective, and getting the opportunity to experiment with approaches and technologies in a systematic way is very necessary for all who are gaining experience.

The development and demonstration projects in particular have a strong learning component. In these projects IRC aims to provide developing country nationals with the possibility to learn through experience and enable them to adapt technologies and methodologies to their specific situation. Current projects of this type include Piped Supplies for Small Communities (PSSC) in *Malawi* and *Zambia*, Simple Pre-Treatment Methods for Rural Water Supply (PRET) in *Colombia*, and community management projects in *Honduras* and *Guatemala*.

INTEGRATION OF TECHNOLOGY

Background

Essential in integrating technology with the social aspects (gender, community management) of a project, is that the technology is adapted to the local setting - that it makes use of local expertise. This integration is fundamental to all of IRC's activities. Once a new technology or implementation strategy has been successfully adapted to the local setting and national staff has gained hands-on experience, the foundation has been laid for implementation on a larger scale.

Piped Supplies for Small Communities

With financial support from the Dutch Directorate-General for International Cooperation (DGIS), the Piped Supplies for Small Communities project has been helping national staff in Malawi and Zambia develop better methods for community-based approaches

towards piped water systems since 1987. This characteristic development and demonstration project has now ended.

Malawi

Aside from greatly benefitting the communities involved, the project had a noticeable impact at the national level in both countries. In Malawi the Water Department has adopted methodologies developed over the years as a national standard for peri-urban and rural water supplies, and the project contributed to the establishment of a Community Water Supply Management Section in the Department. The multi-sectoral collaboration introduced by the PSSC programme has become a model for inter-agency coordination in the country.

Zambia

Through its experiences, the PSSC project contributed to the establishment of a Community Management and Monitoring Unit (CMMU) with a multi-disciplinary staff at the Department of Water Affairs in Zambia. Additionally, the programme's Project Management Committee model has been adopted for national and regional integrated activities in that country.

A workshop has been proposed for 1994 to learn from project experiences on community management in the Zambia PSSC project. These experiences will be disseminated into the new sector organization established after the recent re-organization of the water supply sector.

Regionally, IRC has actively promoted the sharing of experiences with neighbouring southern African countries, notably Zimbabwe, Namibia, Botswana and Swaziland. Programme staff have also made significant contributions to global initiatives to improve sector performance. Both Zambia and Malawi have hosted international meetings contributing to the development of a guideline manual on cost recovery under the direction of an international working group led by WHO.

In 1993 final reports on the country projects and an overall final project report were produced for DGIS, and two project documents were completed and published: *Taking Care of Your Water Supply* is based on community participation in operation and maintenance, and *Action-Learning. Building on Experience* presents an approach to capacity-building for sustainable development, using human learning capacity as the main tool.

Pre-Treatment

The Simple Pre-Treatment Methods for Rural Water Supply (PRET) project was established in Colombia in 1988 with funding from DGIS, to conduct research on chemical-free water treatment. Since then, together with CINARA, at that time a working group from the University of Valle, significant progress has been made on technical research to improve the performance of a combination of different pre-treatment technologies. The research combines roughing filtration with slow sand filtration, and includes both technical scale investigations and monitoring of full-scale treatment plants. The research has clearly proven the great potential for the treatment processes involved, and reliable water supply treatment is now within reach of many communities which currently use polluted surface water.

The project has contributed to the gradual development of CINARA into a recognized resource organization for the water sector in Colombia and Latin America. The centre has grown considerably, and carries out activities as part of collaborative agreements established with sector agencies in Colombia and other organizations in Latin America. CINARA increasingly receives



*The CINARA research and training station in Puerto Mallarino, Cali, Colombia.
Photo: J.T. Visscher, IRC*

requests for advice and support for issues which go beyond water treatment. It is thus gaining importance and has the potential of becoming a key research and information centre for the water sector in Colombia and Latin America. The project has also resulted in the establishment of a dependable infrastructure for research and technology in Puerto Mallarino in Cali, which provides sector professionals with an opportunity to participate in the applied research being carried out, focusing on technical as well as socio-economic issues.

During the year a report on the project research for the first phase was completed and submitted to DGIS, and an Occasional Paper *Pre-Treatment Alternatives for Drinking Water Supply Systems. Selection, Design, Operation and Maintenance* was published in both English and Spanish.

The first phase of the project ended in December 1993. In March DGIS sent a review mission to assess the feasibility of continuation of the research. Resulting positive advice led to approval of a second phase of the project until December 1995, with a budget of dfl 1.8 million. The second phase includes updating of guidelines for design, selection, construction, and operation and maintenance of pre-treatment systems, and an assessment of pre-treatment technology in combination with chemical water treatment. This pre-treatment stage is expected to make chemical water treatment more reliable and economic, particularly for communities of fewer than 30,000 people, which cannot afford highly trained staff. Phase two research so far has shown that applying roughing filtration before chemical treatment can reduce the chemicals needed by up to 50%.

Transfer of Slow Sand Filtration

The development and demonstration approach has been taken a step further in the Transfer of Slow Sand Filtration in Colombia (TRANSCOL) project. The TRANSCOL programme was initiated in 1989 by CINARA and IRC under a bilateral agreement between Colombia and the Netherlands Government. The purpose was to transfer slow sand filtration and pre-treatment technology to eight regions in Colombia. For this purpose regional working groups were established which were trained and which learned to work with the technologies through the implementation of 16 integrated development and demonstration projects, two in each region.

This approach has not only contributed to capacity building in the different regions, but also to the development of other projects supported by the regional groups. Other regions in Colombia, as well as groups in neighboring countries, have now shown a great deal of interest in this approach.

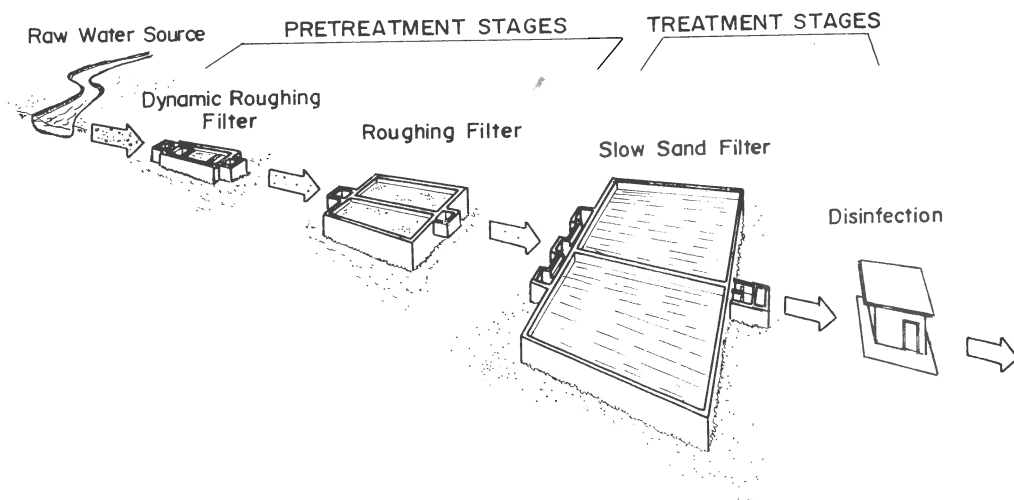


Illustration of the pre-treatment technology employed in Colombia. Drawing: CINARA

By the end of the year ten projects were operating, and another nine (three more than originally planned) were in various stages of construction. All were meeting with good response from the regions, and were fully financed with national, regional and local funds. With this the first project phase met its objectives, and a proposal for an extension until December 1995 was approved by DGIS, with financial support amounting to dfl 1 million. Phase two will focus on transferring the methodology into a ninth region, consolidating advisory capacity in all nine regions, establishing a systematic community-based approach to sanitation improvements in selected communities, and strengthening CINARA's information and training capacity.

The extension of the project designates a major step in the development of CINARA as a resource centre for Latin America.

COMMUNITY MANAGEMENT

Background

Experience suggests that a more prominent role for communities as managers of their improved water supply systems has several advantages. Greater efficiency in system performance, improved cost-effectiveness for both communities and agencies, and long-term sustainability are some of these. The potential for the community's role in management has become evident through the widespread use of community participation in water supply and sanitation development. A great deal of experience has been gained in rural areas where simple water systems have been introduced. The incapacity of agencies to maintain and manage these facilities has led to the implementation of policies to turn the management of these systems over to the user communities.

Community Management Development

A draft proposal was sent to DGIS in 1992 to request funding in support of an action research project to assist communities and agencies in six developing countries to assess and enhance self-reliant management of their improved rural water supply systems. During the course of 1993 the proposal underwent further development with inputs from new staff members. Resubmittal resulted in approval at the end of the year, with a budget of dfl 3 million.

The project will be implemented in Cameroon through PAID, in Colombia through CINARA, in Guatemala through Agua del Pueblo, in Kenya through AMREF/NETWAS, in Nepal through NEWAH, and in Pakistan through the Aga Khan Rural Support Programme. In each country a support group will be established to maximize the impact of the project. Combining participatory action research and learning methodologies, it will aim to improve the efficiency, sustainability and cost-effectiveness of water management by rural communities in developing countries. The capacity of partner organizations to provide support to this end will be enhanced in the process.

In *Honduras* IRC continues to provide support to a project being implemented by the Ministry of Health (SANAA) with financial support from KfW. The project covers 46 rural communities close to the township of Choluteca. IRC support, with help from a local

consultant, focuses on community management and hygiene education. A multidisciplinary team has been set up within the project and training modules are being developed and tested.

In *Guatemala* a similar KfW-financed project is being implemented with the Ministry of Public Health (UNEPAR) to construct 113 water supply systems in Quetzaltenango. Here, too, IRC's support focuses on community management and hygiene education. A support group within the project has been established to develop a training strategy for water committees, with support from Agua del Pueblo and IRC. Training modules are being developed which focus both on the water committees in the communities and staff from UNEPAR. Each training module is being pre-tested in a few communities before it will be used throughout the programme.

During the course of the year future activities were planned in both countries and a workshop was held in Quetzaltenango on community support strategies and elaboration of the training modules.

IRC's Latin American activities spread to *Panama* in 1993. Together with UNICEF's Panama office a workshop on community participation was held to promote and support the implementation of community participation in projects implemented by the government institutions and Panamanian NGOs. As a result of the workshop IRC was invited to lend technical support to the Ministry of Health in formulating a proposal to the World Bank for a water and sanitation project.

Community Self-Improvements

A demand-driven approach towards water supply and sanitation is required to meet needs of the urban population and those in outlying areas, where isolation makes provision of standard services impossible. Community-based processes leading to the selection of sustainable and appropriate technologies are essential. Through an approach based on community self-improvements (COSI), IRC hopes to support local and national organizations in providing the people in these areas with the skills to select, improve and maintain their own water supplies.

In Tanzania potential donor funds are being sought by AMREF and IRC to initiate the COSI approach through a review workshop. In Colombia CINARA is including a COSI component in their peri-urban water supply and sanitation. Agencies in the rural water supply sector in Mozambique are also looking into ways to include the approach in their programmes. Other countries showing interest are Ethiopia and Cambodia.

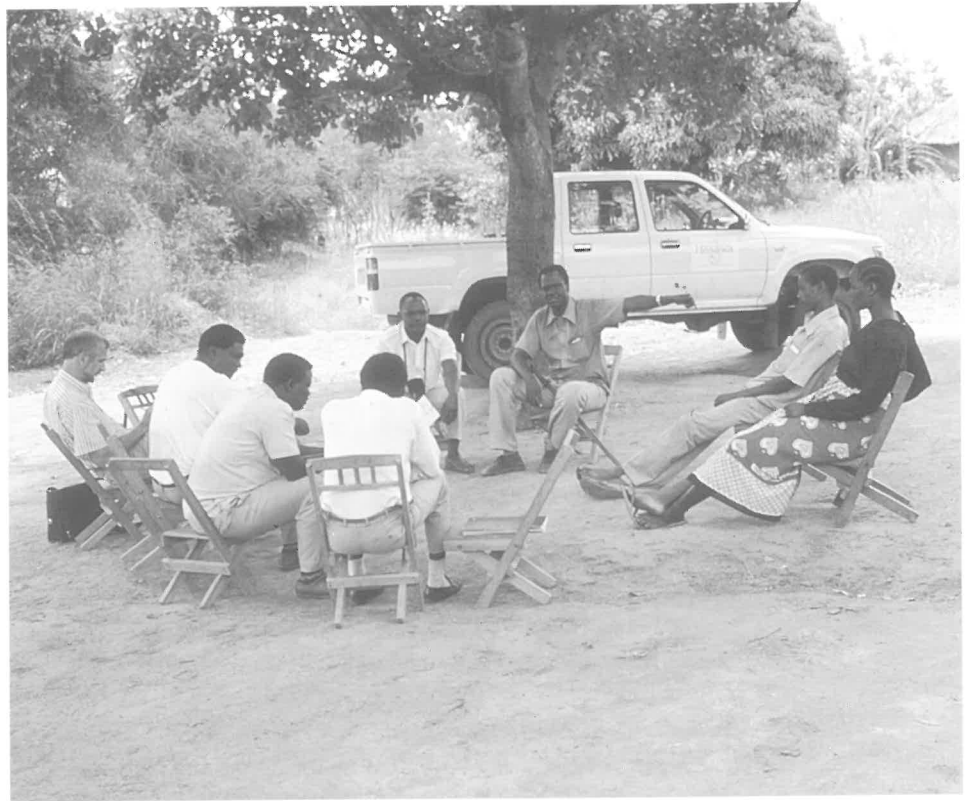
PARTICIPATORY METHODOLOGIES

For the past few years there has been growing recognition of the importance of using participatory approaches in development work. The concept of "community participation" has been readily accepted throughout the sector, but questions as to 'how to do it' are still prevalent.

Building upon experiences and ideas of others, such as of PROWWESS, and upon participatory rural appraisal and rapid rural appraisal techniques, IRC is developing and using participatory methodologies and tools at different levels.

Training is an important area for the development and use of participatory approaches. Unlike traditional teaching methods which emphasize the transfer of knowledge, participatory training focuses more on capacities to plan, create, organize and take initiatives, in addition to sharing knowledge. IRC tests and applies participatory training and learning methods in its own courses, and incorporates them in course manuals which have been developed over the past few years. These include *Action-Learning. Building on Experience*, a product of the PSSC project, and *Reflecting Group Processes. A Resource Document on Participatory Techniques for Water Supply and Sanitation Projects*. The approach outlined in the manual *Action-Learning. Building on Experience* is also relevant for monitoring and evaluation purposes, as it emphasizes a process of continuous feedback to ensure that projects are tuned to the real needs of recipients.

Another area is **participatory methodology in fieldwork**, for working with communities in planning, implementation, and evaluation of projects. Particularly through the participatory evaluations which IRC has set up and conducted itself, much experience has been gathered in the use of participatory methods with extension workers and communities.



In Tanzania, project staff and Village Health Workers discuss project progress with an IRC staff member. Photo: P. Evans, IRC.

Finally, together with developing countries, IRC is working to develop **field guides** which include and emphasize participatory methods. To be effective it is essential that these field guides be local or region-specific, and be written and illustrated locally. Therefore IRC is training local staff to make their own field guides and manuals, incorporating participatory approaches. With funding from DGIS, three such region-specific field guides were produced this year in Africa, Asia and Latin America (see Chapter 2 under Gender Issues). They have been written by teams of local female experts in water and sanitation, who aim at integrating participatory methodologies with a gender-aware approach.

7. Resource Centres

In most developing countries the water and sanitation sector does not have the institutional facilities to compile knowledge and experience, to make these available in a way which ensures effective use, and to keep the information easily accessible for future use. IRC's work is therefore directed, on the one hand, towards filling the existing information gap, and on the other, towards contributing, in the long term, to the development of national 'resource centres' which can play a crucial role in information and knowledge communication at the national and local level. These resource centres should ultimately be able to function independently, in a similar way to that of IRC, in transmitting knowledge through documentation services, desk and field research, training, advisory services, and awareness raising.

In *Colombia*, the Centro Inter-Regional de Abastecimiento y Remocion de Agua (CINARA) at the University of Valle is an outstanding example of such a resource centre. It is a flourishing national centre for research, which since 1987 has been developing with assistance from IRC. A strong sense of commitment and a focused approach have led to the remarkable results achieved in pre-treatment and slow sand filtration technology, and now CINARA stands out as an excellent centre for support to sector development in Latin America.

Several staff members from CINARA have participated in training and briefing programmes at IRC, and IRC regularly participates in CINARA planning meetings and in national workshops in Colombia. A library and documentation centre will open its doors at CINARA in 1994, which will serve as a resource centre for the region.

IRC's growing partnership with NETWAS in *Kenya* has resulted in increased activities towards the latter's role as a resource centre. Support activities include strengthening NETWAS's information management development and performance, involvement of NETWAS in development, demonstration and research projects such as the community management project mentioned in Chapter 6, collaboration as partners in advisory services to develop NETWAS capacity, and support of training capacity development through joint training and implementation. In 1994 the

Management for Sustainability in Water Supply and Sanitation Programmes course will be held at NETWAS for the first time.

In *India* establishment of an up-to-date reference and documentation unit for water and sanitation in Maharashtra State is part of a three-year IRC support programme to the Nashik Research and Training Centre (NRTC). This is being supported by ODA. Other elements in the 1994-1997 Maharashtra Government/IRC training development programme concern training of some 60 staff at various levels, for which a joint NRTC/IRC *Management for Sustainability* course is under preparation.

In *Zimbabwe* the Institute of Water & Sanitation Development, formerly known as Training Centre for Water and Sanitation is gradually changing into an NGO. The Institute has requested IRC support in their efforts to improve their information management services for Zimbabwe and other countries in Southern Africa. The information centre is now well established, with the documentation, mainly grey literature, having been put on the computer. Following advice from the IRC information management consultant, the Institute was rewriting a proposal to establish an information management system at the IWSD. The proposal will be submitted to a donor for funding in 1994.

In direct follow up of the earlier IRC-supported information assessment in *Angola* steps have been taken by the National Water Directorate (DNA) to strengthen its capacity in information management. A working group has been created to deal specifically with the information issue in this war-affected Portuguese-speaking African country. DNA has prepared a proposal for an information management unit which would collect, process and disseminate information covering hydrological data, water and sanitation monitoring information and documentation, supported by UNICEF and IRC.

8. Partners

Background

The partnership approach between agency and community that has proven to be so essential for the success of water supply and sanitation projects is also crucial at the agency level. Whether it be a partnership between a community and government, a donor and a national agency in a developing country, or national agency and a local one, these partnerships are necessary for efficient and effective action in bringing about sustainable water and sanitation coverage. It is through working together that the lessons learned as a result of the International Drinking Water Supply and Sanitation Decade can be successfully applied to provide water and sanitation to people in developing countries without wasting precious financial resources.

IRC is currently working on developing methodologies which facilitate the development of partnerships, particularly between agencies and communities.

Over the years partnerships have greatly influenced IRC's current approach to its mandate: the generation and communication of information leading to enhanced knowledge among partners in the sector through information exchange, research, training and advisory work. Through involving partners in our work and building upon their experiences and their lessons learned, a growing network of mutually beneficial partnerships has been created.

IRC's work is focused at the country level, where it works intensively with selected partners such as ministries, NGOs, UN field offices, professional organizations and universities in an advisory role towards local project staff.

At the global and regional levels IRC works closely with UN organizations and international donor organizations, and close relationships with international NGOs continue to grow.

IRC regularly participates in forums held by the Water Supply and Sanitation Collaborative Council and contributed to six of its working groups in 1993. It also takes part in the UN Interagency Steering Committee for Water Supply and Sanitation and technical

meetings with UN agencies. In addition, IRC participates regularly in a variety of other meetings at country level.

Governing Board

The members of IRC's Governing Board are its oldest and most trusted partners. Since IRC's establishment by WHO and the Netherlands Government in 1968, the latter has been providing IRC with a basic subsidy to enable it to develop its programmes and to generate funds for specific country-oriented activities. The UN-agencies (UNICEF, UNDP, WHO and the World Bank) provide backing, advice and general support to IRC activities.

The relationship with **DGIS** (Directorate-General for International Cooperation of the Netherlands Ministry of Foreign Affairs) does not only involve membership in the Governing Board and an annual subsidy. IRC expertise is regularly sought in policy formulation for the joint Indo/Dutch Water and Sanitation Programme in five Indian states, and for evaluation and advisory services in Baluchistan, Pakistan and the Advisory Group Land and Water in Yemen.

DGIS has funded IRC's Piped Supplies for Small Communities project since 1987, the pre-treatment project in Colombia since 1988, the TRANSCOL project since 1989, and this year approved funding for the activities of the Water Supply and Sanitation Collaborative Council's Working Groups on Information Management and IEC - Information, Education, Communication. IRC expertise was also sought to prepare an overview paper on water supply and sanitation experiences in Tanzania and to advise on sustainable water systems in Burkina Faso.

1993 saw intensified cooperation with **VROM** (Netherlands Ministry of Housing, Physical Planning and Environment). Aside from the annual subsidy VROM provides and its membership on IRC's Governing Board, significant inputs from IRC were sought in the management and coordination of substance-related preparations for a Ministerial Conference on Drinking Water Supply and Environmental Sanitation which the minister will host in March 1994. IRC was a member of an international steering group which was formed to develop the content of the Conference, and which met twice during the year.

In collaboration with UNICEF, IRC is investigating information needs on water supply and sanitation in CIS countries at VROM's request.

IRC has been a **WHO** Collaborating Centre for Community Water Supply and Sanitation since its foundation. Activities in 1993 included collaboration on a joint WHO/UNICEF hygiene education strategy, development of a training package on operation and maintenance, and a project on school sanitation in Latin America. IRC also assists WHO in strengthening sector monitoring through its association with the WASAMS monitoring system.

UNICEF lends support to various IRC activities and relies on IRC expertise for others. Significant support was given to the IEC initiative, particularly to the work in West Africa. Advisory services were provided for UNICEF projects in Panama, Namibia and Honduras. IRC contributed to UNICEF's hygiene education work by presenting a paper at a workshop on Planning for Health and Socio-Economic Benefits in the Water and Sanitation Sector in New York, and preparing hygiene education case studies from Bangladesh and a literature review on motivational factors in changing hygiene behaviour. Involvement in the hygiene education strategy being developed with WHO is another important IRC activity, as is cooperation on an assessment of information needs in CIS countries on request of the Netherlands Ministry of Housing, Physical Planning and Environment. Over the past three years UNICEF has regularly sponsored its developing country staff's participation in IRC's training and briefing programmes.

Two other close partners since IRC's establishment are **UNDP** and the **World Bank**. An agreement was reached this year to continue UNDP/PROWESS funding of the abstract journal *Woman, Water, Sanitation*. UNDP has also rendered support in the development of the IEC initiative for the water and sanitation sector.

The UNDP-World Bank Water and Sanitation Program in Pakistan has requested IRC support for its project on promotion of integrated gender-sensitive participatory development in water supply and sanitation in Pakistan, which includes hygiene education and community management.

IRC has been a partner in the World Bank's International Training Network (ITN) since its inception. Collaboration centres around information exchange and dissemination, including information management. A close relationship has been established with the ITN centres in Africa, resulting in collaboration with individual centres to run training courses on the issue of sustainability.

With the World Bank Regional Water Supply and Sanitation Group in India and other agencies, a proposed training strategy was discussed in preparation of the formulation of a training support programme in the Netherlands-supported water programmes in that country.

Water Supply and Sanitation Collaborative Council

IRC continues its involvement with the Water Supply and Sanitation Collaborative Council, which evolved out of a sector meeting in The Hague in 1988. IRC chaired the Council's Working Groups on IEC - Information, Education, Communication, and Information Management. IRC was also member of the Working Groups on Operation and Maintenance, Applied Research, and Country-Level Cooperation. It also contributed to the work of the Urbanization group.

A proposal from the Council's secretariat resulted in funding from DGIS for activities of the Working Groups on Information Management and IEC.

Working Group on IEC - Information, Education, Communication

At their meeting in Rabat the Council members endorsed the IEC Working Group report and agreed to a Council recommendation that sector agencies and donors recognize the crucial role of IEC in development strategies. Council members also recommended that a guideline package on IEC, developed by the Working Group, be published and made available.

The IEC Working Group's mandate from the Collaborative Council included mobilizing resources for communication activities in developing countries. Following strong interest expressed by two of its members - from Guinea Bissau and Nigeria - the Working Group developed a proposal on behalf of the Council for a pilot project to initiate IEC activities in the West African region. In the latter part of the year the proposal was approved by the Netherlands Government.

The aim of the pilot project is to initiate the promotion and development of communication strategies in at least one and possibly two countries, and in doing so to develop the general IEC guidelines further for the benefit of other countries. Its launch will also be an opportunity to promote WSS communication strategies in neighbouring countries. The project work will then provide a foundation for follow-up proposals from some other countries, under different funding arrangements. In the pilot countries one national institution will be equipped during the course of the project to sustain the communication activities after the project comes to an end. The pilot project is planned to begin with a regional workshop in Nigeria, scheduled to take place in late 1994.

In the meantime, UNICEF committed support for an investigatory phase in both countries. In September 1993 IRC staff carried out an IEC support mission in Guinea Bissau. The mission assisted the Ministry of Natural Resources and UNICEF with preparation of a situation analysis about IEC and with the development of a strategy document for IEC for water supply and sanitation in the country. Real community involvement, financing and management of services in partnership and hygiene education are the key issues which need to be addressed.

The mission was also requested to give inputs from the water sector in a 'day of reflection' about the development of an overall communication strategy for rural development in Guinea Bissau. In 1994 a national workshop on the same subject will be held, to which a national workshop on IEC for water will contribute. Various ministries such as agriculture and health are also planning communication support for their sector goals. The State Secretariat for Information and State Secretariat for Planning are involved in coordinating and steering these communication support activities in Guinea Bissau.

Also in Nigeria UNICEF had planned IRC involvement in 1993 on IEC for water supply and sanitation goals. The political problems in the country prevented the mission from taking place.

*Working Group on
Information
Management*

The Working Group on Information Management had its second meeting in Amman, Jordan in April, with the purpose of following up on recommendations of the first meeting in Bangkok in 1992, and preparing for the Council's meeting in Morocco in September.

The main outcome of the meeting was a strategy which, at different levels, can effectively integrate information into water supply and sanitation development activities and water resources management.

At Rabat a report was presented which contained strong advocacy for improved information management in the sector, and which included numerous examples of its effectiveness to date in improving sector performance. The meeting recognized the essential role of information management for effective planning, management and decision making in all facets of water supply and sanitation, as well as the broader area of water resources management. Recommendations by the Collaborative Council included country level collaboration for information management and endorsement of the WHO/UNICEF Joint Monitoring Programme.

The Working Group, after having satisfactorily completed its assigned tasks, was dissolved. However, a need was seen for a mechanism to monitor the Group's recommendations, and to report back to the Council at its third meeting in 1995. IRC, together with UNICEF and WHO, will develop a protocol for this purpose.

Lusophone Initiative

In order to fill the information gap and improve access and utilization of information in and among Portuguese-speaking countries, the Collaborative Council started the 'Lusophone Initiative' in 1992. This initiative, which is directed primarily at African Lusophone countries, focuses on information management and training through capacity building and human resources development. IRC is the coordinating institution for the information management component of the initiative.

In follow-up of information assessments carried out in Angola and Guinea Bissau in 1992 and an inventory of information materials already available in the Portuguese language, reports were presented at an international conference which was held in Lisbon, Portugal in May 1993, under the aegis of the Collaborative Council. As a result of the meeting IRC was urged to do similar information assessments in Mozambique, Sao Tomé & Príncipe, and Cape Verde, for which the Italian Government agreed to provide funding. A request to publish the inventory of information materials led to steps towards finalization of the document at the end of the year.

Practical development activities for the implementation of the information management activities in each of the five countries have been prepared. A proposal for financing of the translation and printing of a small basic library was submitted to the EC.

A consultant travelled to Guinea Bissau to follow up on the assessments carried out there last year, and at the same time, lent backstopping support to the IEC project there.

Bilateral Donor Organizations

Activities with donor organizations form the largest part of IRC's activities. The major ones are described below.

- | | |
|-------|---|
| GTZ | - development of operation and maintenance training package, also with WHO; |
| KfW | - community management strategy development for the local rural water administration UNEPAR in Guatemala;
- development of community management and hygiene education components of a KfW-financed programme in Choluteca, Honduras, implemented by the national water and sanitation agency SANAA; |
| NORAD | - abstract journal <i>Woman, Water, Sanitation</i> ; |
| ODA | - training provided to Indian staff members and discussions started on training in India; |
| SDC | - school sanitation project in Latin America, which is being carried out with WHO and PAHO; |
| SIDA | - study on donor involvement in water resources development in preparation of the OECD/DAC meeting on Water Resources Management to be held in 1994;
- papers for the OECD/DAC gender group in Stockholm, on gender issues relating to water supply and sanitation;
- school sanitation project in Latin America being carried out with WHO and PAHO. |

Other Sector Support Institutions

Other sector support institutions worldwide, but particularly those in the developing countries themselves, are also close partners, with whom IRC works on a variety of issues.

Agua del Pueblo, Guatemala	community management and hygiene education
Agua para el Pueblo, Honduras	community management and hygiene education
AMREF/NETWAS, Kenya	information, training, community self-improvements, evaluation and advisory missions, Expert Consultation on Involvement of Women
CEHA, Jordan	information issues
CEPIS, Peru	information issues
CINARA, Colombia	integration of pre-treatment technology, transfer of slow sand filtration technology, school sanitation workshop, Expert Consultation on Involvement of Women
CREPA, Burkina Faso	information issues
ENSIC/AIT, Thailand	information issues
IHS, Netherlands	urban water supply and sanitation, training
Imperial College of London, UK	hygiene issues
KIT, Netherlands	lectures on health issues
LSHTM, UK	hygiene issues
MDF, Netherlands	training
NGO Decade Service, Sri Lanka	Expert Consultation on Involvement of Women
PAID, Cameroon and Burkina Faso	training and community management

SANAA, Honduras	hygiene education, community management
Save the Children, UK	workshop on operation and maintenance
SNV, Netherlands	rural water supply policy development
UEBM, Peru	participatory evaluation methodologies
UNEPAR, Guatemala	hygiene education, community management
VENA, Netherlands	training with focus on gender perspectives

9. General Management

Background

With 25 years of service to the water supply and sanitation sector behind it, IRC will enter 1994 with a renewed commitment to excellence in making knowledge and experience available and accessible to those seeking solutions to pressing sector problems. In follow-up to a 1992 analysis of IRC's approach, a working group was established early in the year to develop a business plan to facilitate long-term planning development, and to help secure its continuity and ensure optimum impact of its work in future years. The working group analyzed IRC's basic characteristics, the external and internal situation, and expected developments. These findings will be the basis for the plan, which will serve as a framework within which IRC's activities can be developed and executed. It will also provide the Management Team with a tool for monitoring and evaluating the Centre's progress.

Four main activities, all related to the 25-year anniversary, have been planned for the coming year. One is a forward-looking assessment of IRC, arranged through the Governing Board, which will be executed in 1994. A collection is being made of references, quotes and letters pertaining to IRC and its activities over the years, and an analysis of operational issues is also being undertaken. Finally, a publication on the experiences of the past 25 years is being compiled.

Governing Board

The international character of IRC is reflected in the membership of its Governing Board. Its representatives from WHO, UNDP, UNICEF, the World Bank, the Water and Supply and Sanitation Collaborative Council (guest member), as well as the Netherlands Government (Ministry of Foreign Affairs, and of Housing, Physical Planning and Environment) meet twice yearly to approve the plans and budgets prepared by the Centre, and to discuss the changing nature of IRC's involvement in water supply and sanitation issues. The representatives of the two Netherlands ministries also meet separately twice a year to discuss matters of finance and administration. Additional issues occupying the Board this year included decisions regarding financial and manpower investments in new areas of work, preparations for the Ministerial Conference

on Drinking Water Supply and Environmental Sanitation in 1994, and an external assessment of IRC to be conducted following IRC's 25th anniversary, also in 1994.

Management Team

The Management Team consists of the Director, Administrator and the two Senior Programme Officers. In their bi-monthly meetings, the Management Team coordinates preparation of the plan for the longer term, and in that context, compiles the Annual Plan and the Annual Budget. In 1993 key agenda points concerned IRC's longer-term business plan, prepared in collaboration with IRC's accountants; recruitment of new staff; IRC's 25th anniversary; and issues around the Water Supply and Sanitation Collaborative Council's working groups and the Ministerial Conference mentioned previously.

Staff

IRC's growing staff consists of over 40 individuals of various nationalities, and includes, among others, planning, public health and sanitary engineers; sociologists; anthropologists; documentalists; a psychologist; social scientist; urban planner; geologist; economist; accountant; journalist; and an information specialist. Where time or expertise is unavailable, the staff is supplemented with consultants who are hired to carry out a multitude of assignments related to various current issues. In 1993 consultants provided their services for information management, a hygiene education training course, publications on a great variety of subjects, translations, preparation of papers for the Water Supply and Sanitation Collaborative Council's meeting in September and for the Ministerial Conference on Drinking Water Supply and Environmental Sanitation in 1994, and more.

Budget

IRC operates with a core subsidy provided by the Netherlands Government. This budget of dfl 2.1 million (US\$ 1.1 million)*, was supplemented by extra-budgetary resources of approximately dfl 2,890,000, which was acquired as a result of advisory services and research work carried out for bilateral donors in the Netherlands and Scandinavia, and other international organizations in the northern hemisphere. Other sources of revenue included

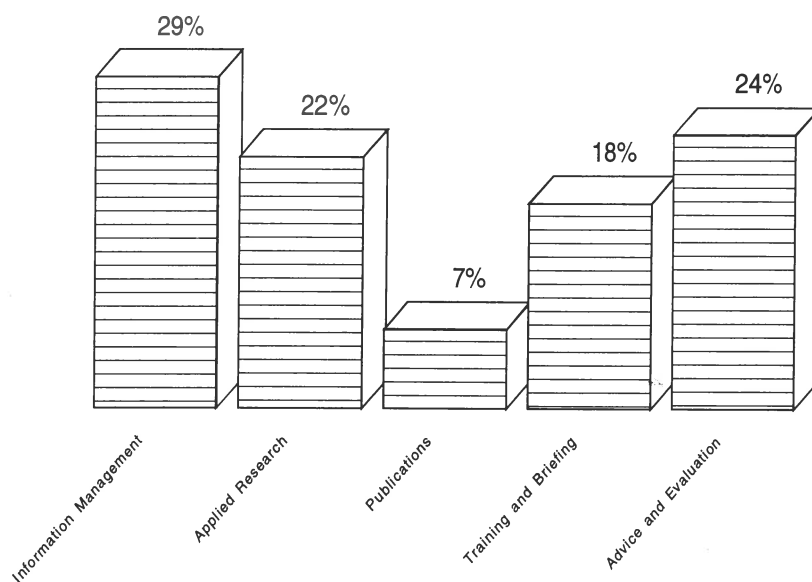
*(US1.00 in 1993 = approx dfl 1.90)

approximately dfl 540,000 from training activities, dfl 130,000 from publication sales, and miscellaneous income of close to dfl 240,000. IRC's total turnover in 1993 was dfl 5,900,000. Expenditures amounted to dfl 5,850,000, leaving dfl 50,000 to be added to IRC's reserves.

Of the Centre's total expenditures for 1993, dfl 2,080,000 was allocated to direct project costs, dfl 2,800,000 to salaries and other personnel costs, and dfl 970,000 to general operating costs.

IRC Programmes 1993

as percentage of time allocated to projects



10. Looking Ahead

The need for a communications culture which raises awareness within the sector has become clear. Social mobilization is the key to the behavioural change necessary at all levels, from stakeholders to national governments, to ensure optimal effectiveness and sustainability of water supply and sanitation interventions.

A major trend, of which the importance was confirmed by the Water Supply and Sanitation Collaborative Council at its meeting in Rabat, Morocco in September, is the emphasis on the social component of development work. Also, in line with international developments, the focus on rural issues of past years is being expanded to include activities pertaining to low-income urban areas and water resources management. The areas in which IRC will be working in 1994 will encompass rural water supply and sanitation, low-income urban area water supply and sanitation, and water resources management. Sociologically-oriented aspects such as gender, hygiene education and community management will be integrated into all activities. To be able to contribute to new sector priorities, recruitment will focus on hiring new staff members experienced in water resources management and in urban water supply and sanitation.

Existing applied research activities will continue. The field activities on community management with KfW and local agencies in Honduras and Guatemala, and pre-treatment and transfer of slow sand filtration with CINARA, will be set forth. IEC activities will be implemented to bring about behavioural change at the community and government level. Desk research will include further work with WHO on school sanitation, a publication on monitoring, and research on community financing and on urban water supply and environmental sanitation. The abstract journal *Woman, Water, Sanitation* has been extended through 1996 with funding from PROWESS and UNICEF.

Advisory services, which grew to be a surprisingly large portion of IRC work during 1993, will continue in India and Pakistan for DGIS. For UNICEF and the Partnership for Child Development Programme based in the UK, expertise will be lent for hygiene education activities. Analysis of the information situation in CIS and FSU countries will continue for VROM. Numerous short

advisory missions for various partners which share IRC's approach will also be executed during the year.

Training and briefing programmes, which are in increasing demand, will continue their growth. Particularly the short training courses in developing countries will be expanded, with new courses scheduled in Kenya with AMREF, and plans for India with DGIS, and Latin America with CINARA.

Information and documentation support, as well as publications, will continue their clearing house role in communicating news on pertinent issues to the sector. Subscribership to the current awareness bulletin *Highlights* continues to grow, and the *IRC Newsletter* will increasingly become a communication vehicle for the Water Supply and Sanitation Collaborative Council.

With the Water Supply and Sanitation Collaborative Council, involvement will continue on IEC and information management. IEC activities in West Africa will take off with workshops in Guinea Bissau and Nigeria, and, with support from the Council, activities towards changes in approach at the community and government level will be initiated. The Lusophone Initiative activities will be expanded into Mozambique, Sao Tomé & Principe and Cape Verde.

In addition to the information generation and communication activities mentioned above, awareness raising on new developments will be developed as part of IRC's work.

I. Governing Board

Mr. H. Scheltema (Chairman)	Former Ambassador
Mr. G.W. Ardon (Secretary)	Head, Water Supply Division Directorate-General for Environmental Protection Netherlands Ministry of Housing, Physical Planning and Environment
Prof. W.J. Kakebeeke (Treasurer)	Director, International Environmental Affairs Department, Directorate-General for Environmental Protection Netherlands Ministry of Housing, Physical Planning and Environment
Mr. I.M. de Jong	Chief, International Organizations Department Directorate-General for International Cooperation Netherlands Ministry of Foreign Affairs
Mr. K. Kuiper	Chief, Sector Programmes, Coordination and Technical Advice Department Directorate-General for International Cooperation Netherlands Ministry of Foreign Affairs
Mr. F. Hartvelt	Deputy Director Division for Global and Interregional Programmes United Nations Development Programme
Mr. G. Ghosh	Chief, Water and Environmental Sanitation Section United Nations Children's Fund
Mr. J. Blaxall	Program Manager UNDP/World Bank Water and Sanitation Program The World Bank
Dr. D. Warner	Manager, Community Water Supply and Sanitation Unit Division of Environmental Health World Health Organization

Permanent Invitee

Mr. R. Wirasinha	Executive Secretary Water Supply and Sanitation Collaborative Council
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II. IRC Staff

Director

Hans M.G. van Damme *

Research and Advice

Jan Teun Visscher *	Senior Programme Officer Dept. Head Programme Activities
Ms. Marieke Boot	Programme Officer [#] Evaluation, Hygiene Education
Phil Evans (until January)	Programme Officer Community Management
Marc Peter Lammerink (from October)	Programme Officer Community Management
Michael Seager (from July)	Programme Officer Urban Issues, Resource Centre Development
Jo Smet	Programme Officer Technology Development
Ms. Christine van Wijk- Sijbesma	Programme Officer Community Education and Participation, Roles of Women
Ms. Mary Boesveld	Research Officer Community Participation, Participatory Methodologies
François Brikké	Research Officer Economic Issues, Training Development
Ms. Norah Espejo	Research Officer Community Management
Tom de Veer (from September)	Research Officer School Sanitation
Ms. Madeleen Wegelin- Schuringa**	Research Officer Urban Water Supply and Sanitation, Community Participation

* *Members of Management Team*

** *Ms. Madeleen Wegelin-Schuringa left the Netherlands in September and continues to work for IRC on a part-time basis in Nairobi, Kenya.*

Ms. Maria Sörensson (from April)	Project Research Assistant Social Issues
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Ms. Anneke Groenendal	Programme Assistant
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Ms. Pocha Horton	Programme Assistant
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Ms. Mariela Rauwerda (from October)	Programme Assistant
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Research Fellows

Willem Ankersmit (until February)	Community Involvement in Piped Schemes
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Ms. Maria Sörensson (until April)	School Sanitation/Participatory Processes
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Consultants Based in Developing Countries

Stephen Parker (until November)	Technical Information Exchange Sri Lanka
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Information and Training

Han Heijnen *	Senior Programme Officer Dept. Head Information Management
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Ms. Eveline Bolt	Research Officer Training Development
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Ms. Lizette Burgers (until September)	Research Officer Hygiene Education
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Ms. Ineke van Hooff (from December)	Research Officer Training
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Dick de Jong	Public Information Officer
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Stephen Parker (from November)	Consultant, Technical Information Exchange
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Ms. Bettie Westerhof	Senior Documentalist
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Nigel Browne	Documentalist
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Cor Dietvorst	Documentalist
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* *Members of Management Team*

Ms. Annick Coulon (until January)	Programme Assistant
Ms. Maria Lucia Borba (from February)	Support Officer, Lusophone Initiative
Rob Soekhlal (until June)	Library Assistant
Ms. Izabel Wimmers	Staff Assistant
Ms. Carmen Tjon Kon Joe	Publication Assistant
Oskar Barendse (from September)	Training Assistant

Administration and Finance

Robert Jansen *	Administrator
Ms. Hilda de Vries	Personnel Officer
Ms. Loekie Broersma	Management Assistant
Ms. Jennifer Francis (from September)	Management Assistant
Ms. Nicolette Wildeboer	Management Officer
Ms. Hanneke Cusell-Schaap	Bookkeeper
Ms. Irene van Dieten	Automation Officer
Michel van der Leest	Office Assistant
Ms. Lia Wahab	Receptionist
Ms. Lauren Wolvers	Image Processor

Mr. T.K. Tjiock serves as Advisor, with particular emphasis on relations with East Asian countries and water quality and treatment issues.

* *Members of Management Team*

III. New Publications

OCCASIONAL PAPER SERIES

*Information Management in the Water And Sanitation Sector.
Lessons learned from field assignments in Africa and Asia,*
Prepared by J. Stephen Parker , OP 19, 84 pp

In the early 1990s IRC carried out a number of field assignments on information management in institutions in the water and sanitation sector in Africa and Asia, with the aim of identifying and analyzing problems in delivering information effectively to users in the sector and, where possible, suggesting solutions. This work aims to bring together the main lessons learned from these assignments in an attempt to help managers in sector institutions in other countries to identify and solve common information management problems.

Community Management Today. The Role of Communities in Management of Improved Water Supply Systems
Co-edited by Phil Evans and Brian Appleton, OP 20, 35 pp

To consolidate desk research and field studies and to provide guidance on this subject, IRC in collaboration with UNDP, UNICEF, WHO and the UNDP/World Bank Water and Sanitation Program organized an international workshop in November 1992: *The Role of Communities in the Management of Improved Water Supply Systems*. In the workshop, up-to-date practical experience of community management from Cameroon, Guatemala, Honduras, Indonesia, Pakistan, Uganda and Yemen was presented. This document brings together this experience and the results of the desk research; it also highlights the key issues involved.

Community management as a necessity for reliability, sustainability and replicability of water supply and sanitation projects is explained; community management from the perspective of the partners involved is described, and guidelines on putting community management into practice are presented. Key issues and actions which governments should take into account to create an enabling environment for community management are touched upon. Issues treated are: political will, strategic planning, policy and legislation, decentralization, training and education, public education and social marketing, and monitoring and evaluation. The final chapter identifies a number of ways of implementing successful community management. Throughout the booklet experiences from field cases are presented in boxes to illustrate relevant points.

Action-Learning. Building on Experience
Prepared by Norah Espejo, OP21, 35 pp

Evolved from the need to develop training material for project staff for community development and action-learning in the Piped Supplies for

Small Communities project in Malawi and Zambia. Before developing training material, the importance of developing and using the learning approach at individual and project levels must be recognized.

This publication aims to assist water sector staff in using learning in a systematic and analytical way. It provides the basic concepts of action-learning as the main tool for capacity building. Action-learning procedures are presented and explained with examples and illustrations. Guidelines for implementation of action-learning in water and sanitation projects are also included.

Pre-Treatment Alternatives for Drinking Water Supply Systems. Selection, Design, Operation and Maintenance

Prepared by Geraldo Galvis, Jan Teun Visscher, Javier Fernández and Fabiola Berón. OP 22, 101 pp

The publication has been developed to cater to the need for information about pre-treatment technologies which can be combined with slow sand filtration. Comprises information about the selection, design, operation and maintenance of different pre-treatment alternatives, all using coarse media filtration followed by slow sand filtration. It also includes some general concepts and considerations on drinking water treatment for domestic use. The concepts discussed greatly enhance the possibility of providing reliable water supply treatment particularly in rural areas and small and medium-sized towns. It is particularly useful for staff involved in planning, design and supervision of operation and maintenance of water supply schemes in developing countries and countries with increasing water pollution problems.

REFERENCE SERIES

A Guide to Secondary Sources of Information on Low-Cost Rural and Urban Water Supply and Sanitation for Developing Countries

Prepared by Nigel Browne, RS 8, 108 pp

Part one of this Guide on subject definition indicates a number of useful tools (dictionaries, glossaries, thesauri) which can be used when looking for information on specific subjects. Part two on document identification lists various formal means of finding out what has been written on specific fields or subjects. Part three on organizations is concerned with both identifying organizations involved in relevant areas of work for the purpose of cultivating further professional contacts, and also, in the context of libraries, for possible document acquisition.

The following categories of secondary sources of information are covered: bibliographies, literature reviews, abstract journals, current awareness bulletins, data bases, directories (international) organizations, and information networks. The Guide also includes a short list of useful documents for resource centres and a comparison of relevant CD-Roms. The guide aims to help those interested in setting up small libraries in developing countries. It is also useful for people wishing to know how and where to find specific subject-related information.

TRAINING SERIES

Taking Care of Your Water Supply
TS 10, 86 pp

This manual draws on the experience of the two projects on community-based public standpost water supplies in Malawi, Zambia, Indonesia and Sri Lanka, supported by the Netherlands Directorate-General for International Cooperation (DGIS).

The manual provides guidelines on the essential issues to consider for the effective involvement of users in operation and maintenance activities. It is intended as an aid to personnel at district and similar level, who are responsible for piped supplies for small communities. Text lay-out and illustrations and a glossary of terms assist the user.

OTHER DOCUMENTS/PUBLICATIONS

Actions Speak. The study of Hygiene Behaviour in Water and Sanitation Projects

Prepared by Marieke T. Boot and Sandy Cairncross, Editors, 150 pp

This book builds on the outcome of an international workshop held in 1991 on the measurement of hygiene behaviour, which captured the experience of 44 specialists on this subject. This distilled knowledge is now available to assist those engaged in water, sanitation and hygiene education programmes in developing countries. A liberal use of practical examples helps to demonstrate the book's recommended approaches for overcoming recognized difficulties in gathering and analyzing data on sensitive and personal topics. The combination of anecdotes and practical advice covers the planning and pretesting of hygiene behaviour studies, including the involvement of community members in study design and information gathering. It discusses the pros and cons of different interview and observation methods, and the types of behaviour which are most relevant to the achievements of health improvements.

Management of Operation and Maintenance in Rural Drinking Water Supply and Sanitation

Prepared jointly by WHO and IRC, 450 pp

The 8-module resource training package is an outcome of the work of the Working Group on Operation and Maintenance of the Water Supply and Sanitation Collaborative Council.

It is aimed at working-level managers, and is designed to be a guide for facilitators who will conduct O&M training courses. The general objective of the course is to contribute to improved management of programmes by enhancing participants' understanding of sustainability issues as well as to increase their ability to sustain adequate O&M activities. The duration of the course is 80 hours, or two weeks. Its structure is flexible enough to be adapted to local circumstances and needs. The training package was field-tested in Namibia in May 1993.

PERIODICALS

Woman, Water, Sanitation

Compiled by Christine van Wijk-Sijbesma and Eveline Bolt
Joint publication IRC/PROWWESS/NORAD. Annually 1991-1993

Annual state-of-the-art on women's roles in improving water supply, sanitation and hygiene. Contains a summary and abstracts of selected books, reports and audio-visual materials grouped into several subject areas, a resources list, addresses and an index.

Highlights. News on water supply, sanitation and environmental aspects Compiled by IRC's Documentation Unit, 6 times annually

Contains an edited selection of new items and contents pages from 250 journals, newsletters and other sources related to the water supply and environment sector.

IRC Newsletter

English: 10 times annually, French: 5 times annually

Contains news, trends in the sector, and announcements on selected courses, new publications and events.

TRANSLATIONS

Slow Sand Filtration for Community Water Supply, TP24, into Spanish (Filtración Lenta en Arena Tratamiento de Agua para Comunidades), by CINARA, Colombia (with financial support from DGIS).

Pre-Treatment Alternatives for Drinking Water Supply Systems. Selection, Design, Operation and Maintenance, OP 22, from Spanish by CINARA.

Woman, Water, Sanitation, abstract journal: excerpts from first three issues into Spanish and French, with funding from the EC.

Involvement of Women in Water Supply and Sanitation, TP 22: excerpts into Spanish and French, with funding from the EC.

IV. Meetings, Workshops, Seminars and Symposia

Consultation on Water Supply and Sanitation Information Needs.
Weikersheim, Germany, 21-22 January

Informal Meeting on Follow-Up to the Report of the Oxford Workshop on the Measurement of Hygiene Behaviours. Community Water Supply Unit. World Health Organization, Geneva, Switzerland, 5 February

Expert Consultation on Involvement of Women. Naro Moru, Kenya, 15-27 February

Seminar on Water Management in the Next Century. SOTA, Garderen, The Netherlands, 4 March

Workshop on Community Management Support Strategy. Facilitated by IRC, with UNEPAR/KfW. Quetzaltenango, Guatemala, 14-19 March

WHO/UNICEF Joint Monitoring Programme Donor Consultation. At WHO, Geneva, Switzerland, 22 March

Workshop on School Sanitation and Hygiene Education in Latin America: Conditions, Experiences and Potentials. Organized by PAHO and hosted by CINARA, Cali, Colombia 22-27 March

Third Meeting of the Working Group on Applied Research. Thun, Switzerland, 29-31 March

"Open for Africa" Congress. Organized by HIVOS/INZET, Rotterdam, The Netherlands, 1 April

ECLIPSE (European Convention of Library and Information Products and Services). Amsterdam, The Netherlands, 6 April

Second Meeting of the Working Group on Information Management. Organized by CEHA, Amman, Jordan, 20-22 April

Planning for Health and Socio-Economic Benefits in the Water and Sanitation Sector. UNICEF, New York, USA, 21-22 April

Meeting of the Working Group on IEC - Information, Education, Communication. UNICEF, New York, USA, 23 April and WHO, Geneva, Switzerland, 11 May

Meeting of Water Supply and Sanitation Collaborative Council's Working Group on Urbanization. Siena, Italy 25-28 April

Workshop on Gender-Sensitive Game "Africulture". ETC Foundation, Leusden, The Netherlands, 11 May

Central and Eastern Europe International Seminar: Civil Society and its Involvement in Looking for Solutions on Drinking Water, Sanitation, Environment and Quality of Life. Warsaw, Poland, 16-19 May

Workshop on Evaluation at Institutional Level. Tegucigalpa, Honduras, 10-12 May

Workshop on Community Participation. Led by UNICEF and IRC, Panama City, Panama, 18-22 May.

International Conference on Capacity Building in the Water Supply and Sanitation Sector in the Lusophone Countries in Africa. Lisbon, Portugal, 26-28 May

Preparatory Meeting for 1994 OECD/DAC Meeting on Water Management. Paris, France, 1-2 June

International Steering Committee for Ministerial Conference on Drinking Water Supply and Environmental Sanitation. Hosted by Ministry of Housing, Physical Planning and Environment, The Hague, The Netherlands (1-2 July and 4-5 November)

9th Aguasan Workshop on Issues Relating to Community Financing of Water Supply and Sanitation Facilities. Rotschuo, Switzerland, 11-13 July

Workshop on Applied Methodology for Involving Women in Rural Water Supply and Sanitation and Water Source Protection Projects. Expert Consultation on Involvement of Women. CINARA, Cali, Colombia, 12-17 July

Stockholm Water Symposium. Stockholm, Sweden, 11-13 August

Methods to Involve Women in Water Supply, Sanitation and Water Resources Management. Expert Consultation on Involvement of Women. Mt. Lavinia, Sri Lanka, 6-17 September

Second Meeting of the Water Supply and Sanitation Collaborative Council. Rabat, Morocco 7-10 September

Research and Evaluation Methods for Health Education. Training Workshop. Organized by Partnership for Child Development Programme, Dar es Salaam, Tanzania, 7-17 September

Day of Reflection on Intersectoral Information, Education and Communication. Organized by the State Secretariat for Information. Guinea Bissau, 15 September

Regional Workshop on Operation and Maintenance of Rural Water Supplies. Sponsored by Save the Children Foundation and facilitated by IRC, Blantyre, Malawi, 20-24 September

WHO/Manteau Conference on Training and Information Management for Tropical Diseases. Conference organized by Laboratoire de parasitologie et epidemiologie tropicale of the University of Poitiers, Poitiers, France, 30 September-1 October

Seminar on Operation and Maintenance of Sanitation Systems in Urban Low Income Areas. IHS, Rotterdam, The Netherlands, 1 October

Regional Workshop on Operation and Maintenance. Sponsored by WHO Regional Office for Africa and Ministry of Health and Child Welfare, Harare, Zimbabwe, 8-12 November

Second meeting of the Sanagua Group of European Water Supply and Sanitation Information Agencies. SKAT, St. Gall, Switzerland, 11-12 November

Annual Meeting of ITN Africa Managers. Naivasha, Kenya, 29-30 November

ITN Africa Seminar. Naivasha, Kenya, 1-2 December

NETWAS Advisory Board Meeting. Nairobi, Kenya, 3 December

Gender and Water Resources Management, Lessons Learned and Strategies for the Future. OECD/DAC workshop organized by SIDA in Stockholm, Sweden, 1-3 December

World Bank Water Resources Management Seminar. Richmond, Virginia, USA, 7-9 December

Participatory Technology Development, Innovation through Dialogue. International Symposium organized by ATOL, GATE, GRET, ITDG, SKAT and TOOL. Amsterdam, The Netherlands, 10 December

V. Papers, Presentations and Articles

Papers and Presentations

Women's Involvement in Water Supply and Sanitation. Lecture given by Christine van Wijk-Sijbesma, Free University of Brussels, Brussels, Belgium, March.

Using Hygiene Behaviour Indicators in Water, Sanitation and Hygiene Education Projects, by Marieke Boot. Paper presented at UNICEF workshop "Planning for Health and Socio-Economic Benefits in the Water and Sanitation Sector", UNICEF, New York, NY, USA, April

Community Management of Water Supply Systems, by Han Heijnen and Maria Sörensson. Paper presented by Marieke Boot at international seminar "Civil Society and its Involvement in Looking for Solutions to Drinking Water, Sanitation, Environment, and Quality of Life Problems", Warsaw, Poland, May.

Planning for Better Hygiene: The Importance and Use of Motivational Factors. Paper prepared for UNICEF staff by Tineke Murre and Christine van Wijk-Sijbesma, November

Gender Aspects of Sanitation, the Missing Slipper of Cinderella?, paper by Christine van Wijk-Sijbesma, presented at the OECD/DAC workshop "Gender and Water Resources Management, Lessons Learned and Strategies for the Future", organized by SIDA, Stockholm, Sweden, December

Gender and the Management of Drinking Water Supply in Low-Income Urban Communities in Latin America (English Summary). Paper by Norah Espejo, presented at the OECD/DAC workshop "Gender and Water Resources Management, Lessons Learned and Strategies for the Future", organized by SIDA, Stockholm, Sweden, December

Articles

Sustainability of Urban Water Supply: The Case of Zanzibar, in Water and Sanitation News, Vol 1. No 9, April 1993, AMREF, by Han Heijnen

Participation of Women in Urban Water Supply and Sanitation, in Shelter, Human Settlement Management Institute, India, May 1993, by Christine van Wijk-Sijbesma, Madeleen Wegelin-Schuringa, Eveline Bolt and Marieke Boot

Information policy and the water supply and sanitation sector at national level, in Informatie en Internationale Ontwikkeling, Vol 5, no 1, June 1993, by Nigel Browne and Han Heijnen

The Baldia Soakpit Pilot Project in Karachi, Pakistan, in Voices from the City, Vol. 3. September 1993, WASH, by Quratul Ain Baktheari and Madeleen Wegelin-Schuringa

Comparative Study of Different Pre-Treatment Alternatives, in Journal of Water Supply Research and Technology-Aqua, Vol. 42, No 6, December 1993, by Gerardo Galvis, Javier Fernández and Jan Teun Visscher

IRC's Collaboration with the ITN, in Water and Sanitation News, Vol 2, No 2, AMREF, December 1993

Feature Articles on IRC:

Dutch:

IRC Ook Buiten het Geld Sterk Verbonden met VROM, (IRC Also Strongly Linked to VROM Apart from the Money) interview with Hans van Damme in VROM Venster, no 15, 8 September 1993

French:

Viabilité des programmes d'eau et d'assainissement: La maîtrise des difficultés de maintenance et de durabilité des installations, in Sidwaya, 27 January 1993 (start of the Management for Sustainability course in Ougagadougou)

Viabilité des programmes d'eau et d'assainissement: Des séminaristes apprécient, in Sidwaya, 11 February 1993 (about the Management for Sustainability course in Ougagadougou)

Viabilité des programmes d'eau et d'assainissement: Un accent particulier sur la participation de la femme, in Sidwaya, 15 February 1993 (about the Management for Sustainability course in Ougagadougou)

Programmes d'eau et d'assainissement en Afrique: Développement de la participation communautaire, in Sidwaya, 14 Décembre 1993 (after the Management for Sustainability course in Ougagadougou)

Eau et assainissement en Afrique: L'IRC, une référence pour la viabilité des programmes, interview with François Brikké, in Sidwaya, 23 Décembre 1993

VI. Country/Project Matrix

This matrix contains a list of countries in which or with whom specific activities were undertaken in 1993, (see also map on page viii and ix) in addition to general information exchange in more than 100 countries.

ACTIVITIES

	<i>Water Technology, Operation and Maintenance</i>	<i>Sanitation Technology</i>	<i>Low Income Urban Water and Sanitation</i>	<i>Water Resource Management, Environmental Issues</i>	<i>Information Management</i>	<i>Community Management</i>	<i>Health and Hygiene</i>	<i>Gender</i>	<i>Monitoring and Evaluation</i>	<i>IEC - Information, Education, Communication</i>	<i>Financial Management</i>	<i>Resource Centre Development</i>
COUNTRIES												

Africa

Angola					*							
Burkina Faso	*				*							
Cameroon	*				*							*
Ghana							*					
Guinea Bissau					*					*		
Kenya								*				*
Malawi	*					*						
Namibia	*											
Nigeria										*		
Tanzania						*						
Zambia	*					*						
Zimbabwe	*											

Asia

Bangladesh							*					
India		*	*			*	*	*			*	
Philippines	*											
Sri Lanka								*				
Thailand		*	*									

ACTIVITIES (continued)

COUNTRIES	<i>Water Technology, Operation and Maintenance</i>	<i>Sanitation Technology</i>	<i>Low Income Urban Water and Sanitation</i>	<i>Water Resource Management, Environmental Issues</i>	<i>Information Management</i>	<i>Community Management</i>	<i>Health and Hygiene</i>	<i>Gender</i>	<i>Monitoring and Evaluation</i>	<i>IEC - Information, Education, Communication</i>	<i>Financial Management</i>	<i>Resource Centre Development</i>
Eastern Mediterranean												
Jordan					*							
Latin America												
Colombia		*	*			*	*	*				*
Ecuador							*					
Guatemala						*	*					
Honduras						*	*		*			
Nicaragua							*					
Peru							*					
Panama						*						
Central and East European countries												
Slovakia					*							
Bulgaria					*							
Former Soviet Union												
Kyrgyzstan					*							

VII. List of Abbreviations

AMREF	African Medical Research Fund (Kenya)
CD-ROM	Compact Disc - Read-Only Memory
CEHA	Centre for Environmental Health Activities (Jordan)
CEPIS	Pan-American Centre for Sanitary Engineering and Environmental Sciences (Peru)
CINARA	Centro Inter-Regional de Abastecimiento y Remoción de Agua (Colombia)
CIS	Commonwealth of Independent States
CMU	Chiang Mai University (Thailand)
COSI	Community Self-Improvements
CREPA	Centre Regional pour l'Eau Potable et l'Assainissement à Faible Coût (Burkina Faso)
DANIDA	Danish International Development Agency
DNA	National Water Directorate (Angola)
DGIS	Directorate-General for International Cooperation (The Netherlands)
EC	European Community
ESA	External Support Agency
ESA-IRS	European Space Agency Information Retrieval Service
FINNIDA	Finnish International Development Agency
FSU	Former Soviet Union
GTZ	German Agency for Technical Cooperation
HESAWA	Health through Sanitation and Water project (Tanzania)
HSMI	Human Settlement Management Institute (India)
HUDCO	Housing and Urban Development Corporation (India)
IDWSSD	International Drinking Water Supply and Sanitation Decade

IEC	Information, Education, Communication
IHS	Institute for Housing Studies (The Netherlands)
IHE	International Institute for Infrastructural, Hydraulic and Environmental Engineering (The Netherlands)
IPD-AOS	Institut Panafricain pour le Developpement, Afrique et l'Ouest et du Sahel (see also PAID)
IRC/WD	International Reference Centre for Waste Disposal (Switzerland)
ITN	International Training Network for Low-Cost Water Supply and Sanitation
IWSD	Institute of Water & Sanitation Development (Zimbabwe)
KIVI	Koninklijk Instituut voor Ingenieurs (The Netherlands)
LSHTM	London School of Hygiene and Tropical Medicine
MDF	Management for Development Foundation (The Netherlands)
MUG	Minis User's Group
NEWAH	Nepal Water and Health
NETWAS	Network for Water and Sanitation (Kenya)
NHA	National Housing Authority (Thailand)
NGO	Non-Governmental Organization
NORAD	Norwegian Agency for International Development
NRTC	Nashik Research Training Centre (India)
O&M	Operation and Maintenance
ODA	Overseas Development Administration (United Kingdom)
OECD/DAC	Organization for Economic Cooperation and Development/ Development Assistance Committee
PAHO	Pan-American Health Organization (Peru)
PAID	Pan African Institute for Development (Cameroon)
PAID/WA	Pan African Institute for Development/West Africa (Cameroon)

PROWWESS	Promotion of the Role of Women in Water and Environmental Sanitation Services
PRET	Pre-Treatment
PSSC	Piped Supplies for Small Communities
SANAA	Servicio Autonómo Nacional de Acueductos Acantarillados (Honduras)
SDC	Swiss Development Corporation
SDI	Selective Dissemination of Information
SIDA	Swedish International Development Authority
SKAT	Swiss Centre for Appropriate Technology
SNV	Netherlands Development Organization
TDR	Centre for Tropical Disease Research
TRANSCOL	Transfer of Slow Sand Filtration in Colombia
UEBM	Unidad Ejecutora de Barrios Urbanos Marginales (Honduras)
UNDP	United Nations Development Programme
UNEPAR	Unidad Ejecutora del Programe de Acueductos Rurales (Guatemala)
UNICEF	United Nations Children's Fund
VENA	Women and Autonomy Centre (The Netherlands)
VIIO	Association for Information and International Development (The Netherlands)
VROM	Ministry of Housing, Physical Planning and Environment (The Netherlands)
WASAMS	Water and Sanitation Monitoring System
WEDC	Water and Waste Engineering for Developing Countries (United Kingdom)
WHO	World Health Organization
WSS	Water Supply and Sanitation

